

SOS on the high seas

Responsibility of financial institutions
in the ship financing business

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Foreword



Tommy Piemonte – Head of imug Sustainable Investment

If you look closely at the shipping industry, it quickly becomes apparent that there are a number of different sustainability challenges to overcome. It is all the more surprising that while a few of these sustainability issues are reported in the media and civil society, extensive and systematic analysis of the environmental, social and governance risks has been scarce. The industry's very complex and often confusing ownership and responsibility structures could be a reason for this, together with the legal connections these structures entail. This lack of transparency makes it difficult to allocate ultimate responsibilities when it comes to considering sustainability issues. A documentary broadcast¹ on the television channel ARD in March 2016 introduces, I think, a very apt phrase into the debate. "Sea-blind" expresses well how difficult it is for an outsider to penetrate the complexity of the industry structure, and it also shows just how little public attention shipping receives in comparison with other sectors.

As a sustainability rating agency, our work involves helping to make complex issues manageable and assessable so that investors can translate their sustainability ideas into investment decisions. By the same token, we think it equally important to give the companies we rate some new momentum on improving their sustainability performance and contributing to the discourse on the subject. With companies, we achieve this through active dialogue during the rating process and transparency with regard to the rating result and the individual scores in each criteria element rated. At the same time, we make our contribution to the sustainability discussion within the industries we rate in a variety of ways and at different levels. To illustrate one example: when we develop and refine our criteria, we engage experts from politics, academia and non-governmental organizations together with investors, rated companies and other stakeholders in an extensive exchange of thoughts and ideas. The dialogue we initiate and the effect on the various stakeholders of the viewpoints that emerge from it provide the impetus for fresh ideas. Moreover, this procedure enables us to compile sustainability criteria that are sound, extensive, differentiated and challenging.

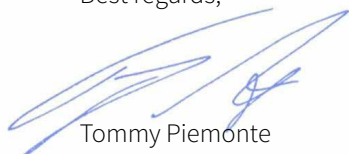
Accordingly, the results of this working paper will provide the foundation for further developing the sustainability criteria that imug applies to the ship financing business of

¹ "Seablind – The real price of shipping" broadcast 30.03.2016 on ARD

financial institutions. By publishing the study results we also hope to create more transparency and awareness of the subject matter and to encourage greater engagement with sustainability issues in shipping on the part of financial institutions, investors and shipping sector stakeholders.

With these goals in mind, on behalf of my imug Sustainable Investment team, I wish you interesting and stimulating reading.

Best regards,

A handwritten signature in blue ink, appearing to read 'TP', is positioned above the name 'Tommy Piemonte'.

Tommy Piemonte

1. Introduction and objectives

Public interest in the shipping sector from the point of view of sustainability is increasing. Politicians and scientists, the media and non-governmental organizations (NGO's) are engaged - sometimes very publicly - in raising general awareness of sustainability issues in shipping. Given that the requirements and the challenges of sustainability in shipping have so far not received much public attention, this is a welcome development, but this increased public interest is all the more important because the shipping sector is facing sustainability challenges across a full range of ESG (Environment, Social and Governance) factors. It is not only the environmental protection issues in the shipping industry, such as emissions of environmentally undesirable substances, which require attention. The challenges of social issues have to be met, e. g. the inhumane working conditions in some ship dismantling facilities in developing countries and emerging economies, and governance risks, i.e. risks that can be avoided through responsible corporate governance and effective regulation of shipping, also need to be addressed and overcome. Even though some in the shipping industry are already integrating aspects of sustainable action into their business decisions, the ESG risks described in this paper have not yet been comprehensively addressed. For this reason, and simply because the global economy is so important, an integrated approach to and assessment of the environmental, social and ethical corporate governance indicators in shipping seem indispensable.

The relevance of shipping for global trade can be explained by the recent increase in intercontinental interdependence in trade and production processes whereby most goods traded are transported by sea. The volumetric proportion of goods transported by ships is currently 90 percent of total world trade (ICS: 2016). Sea trade has been growing by 4 percent a year on average since the seventies (EPA: 2015). The world's merchant fleet currently comprises more than 55,500 ships² (Department for Transport: 2013, p. 1) and the world's entire fleet of ships now exceeds 100,000 (Allianz Global Corporate & Specialty AG: 2012, p. 12).

Funding for this fleet has been and will continue to be provided in large part by financial institutions. Economically speaking, as (one of) the main shipping industry financiers, these institutions are crucial stakeholders in the shipping industry. Financial institutions are especially important from a sustainability perspective because of their financing activities in the shipping sector. The integration or absence of ESG criteria in their granting of loans and during the repayment period enable financial institutions to exercise enormous control over the sector's orientation towards sustainability – right from the design stage and construction through to the ship's operation and dismantling.

This link between financial institutions and shipping, and the important role that shipping plays in global trade and in terms of sustainability is catching the attention of SRI

² This list only contains vessels over 100 GT.

(Socially Responsible Investment) investors and, since we are a sustainability rating agency, of imug mbH (imug) as well. SRI investors incorporate ESG issues into their investments, for which they rely on sustainability ratings like those created by imug. These investors invest in the shipping sector directly by investing in companies via shares, direct investments etc. and indirectly through the purchase of bank bonds, e. g. ship mortgage bonds, which are issued by a financial institution to refinance its own ship financing business. Mindful of both the importance of bank bonds for constructing investor portfolios and taking financial institutions' specific responsibility for sustainability into account, imug developed a dedicated sustainability rating for bank bonds back in 2007.

Using the reasoning shown here as a basis, this paper essentially intends to provide an overview:

- ▶ of the ESG risks relevant for the shipping industry
- ▶ the financial institutions' current initiatives, prospects and motivation to take these risks into account in their ship financing business.

imug's motives here are twofold:

- ▶ to provide a foundation for further developing the sustainability criteria of ship financing banks and the ship mortgage bonds used for refinancing, and
- ▶ to encourage and support financial institutions, investors and experts from the shipping sector in discussing the consideration of ESG risks in shipping.

In addition to imug's fundamental research on the design and revision of rating criteria, this working paper thus is also addressed to stakeholders in the shipping industry and especially financial institutions active in ship financing. The study can also serve as an overview for SRI investors who envisage investing directly or indirectly in the maritime sector.

In order to obtain as comprehensive and differentiated an insight into the subject matter as possible, besides analyzing the literature imug also surveyed ship-financing institutions and various experts in the shipping sector, and did an analysis of recent sustainability initiatives undertaken by financial institutions. In order to better understand the results of the survey and the analysis, the following section will describe the procedure and methodology used in the survey and the subsequent assessment of financial institutions' sustainability initiatives.

The paper encompasses the on the next page following areas of analysis.

Figure 01: Elements of the study



Source: internal

2. Methodology

When drafting sustainability criteria, imug generally follows not only the proviso of creating a solid information base, but also of paying special attention to considering sustainability issues in a differentiated manner. This makes it necessary to explore the argumentation used by the various stakeholder groups who encounter the respective sustainability issues. Due to the nature of the subject matter, the positions and underlying interests of specialized NGO's, for example, may differ from those of the entities being rated.

In our approach to the topic of “sustainability in ship financing”³, we examined position papers and studies published by trade associations, NGO's, governmental organizations, quasi-governmental organizations and other groups of experts. While researching the literature we initially conducted interviews with experts and talked with NGO's who specialize in sustainability in shipping, financial firms involved in ship finance, and others. These putative ESG risks were then compiled in a questionnaire (Annex 1). At this point, these risks do not necessarily correspond to the ESG issues imug regards as definitive or relevant for ship financing.

The questionnaire we designed aims to enable a better understanding of the relevance of the ESG risks considered in the shipping industry. imug wants to know whether the list of ESG risks considered relevant is exhaustive and whether financial institutions can factor these risks into their ship financing. The questionnaire also enables us to determine why financial institutions should concern themselves with ESG issues in ship financing for commercial reasons and whether these issues are already being integrated.

³ This study refers only to sustainability issues in maritime shipping and not to inland waterway transport. The reasons here are the higher relevance of maritime shipping for global trade and by contrast the relatively low relevance of IWT from the higher sustainability perspective as well as the relatively low importance for refinancing via ship mortgage bonds. It would nevertheless be conceivable to do follow-up study which also considers inland waterway transport.

Figure 02: Study design



Source: internal

The questionnaire was emailed to a total of 124 individuals from 119 financial institutions, NGOs and other expert groups in November and December of 2014. In order to prevent duplication or distortion of the survey's results, we only accepted one questionnaire per institution⁴.

In order to obtain a meaningful population of ship-financing financial institutions for this study, we analyzed and approached a total of 56 financial institutions. The choice of financial institutions was made as follows: we approached the 37 largest ship-financing financial institutions by loan volume as reported in the "2013 Shipping portfolio League Table"⁵ (see Annex 2) and 19 additional financial institutions that are active in ship finance and listed among imug's sustainability ratings of bank bonds.

⁴ The decision to approach several people from the same institution was made in order to reach the person responsible for ship finance and sustainability and thus increase the likelihood of a response. Insofar as the departments existed and the contact details were available, we wrote to both the department responsible for ship financing and the sustainability management department of the respective financial institutions. In other cases we wrote to the financial institution's point of contact entrusted with public inquiries - e. g. Investor Relations or the Press Department.

⁵ For the purposes of this study, HSH Core und HSH Non Core are counted as a single financial institution.

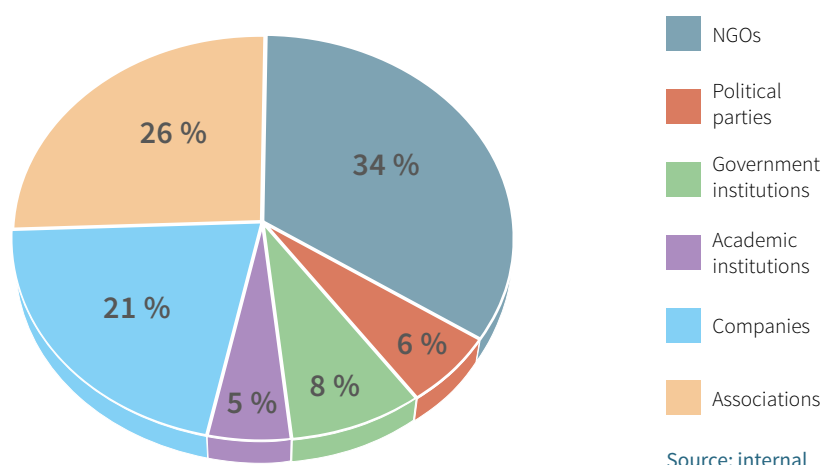
The following financial institutions received the questionnaire and were subsequently rated by imug:

-
- | | |
|---|---|
| ▶ ABN AMRO Bank N.V. | ▶ Hypo Alpe-Adria Bank International AG |
| ▶ Alpha Bank A.E. | ▶ Industrial and Commercial Bank of China Limited |
| ▶ Banca Monte dei Paschi di Siena S.p.A | ▶ ING Group N.V. |
| ▶ Banco Popolare Società Cooperativa S.p.A | ▶ Intesa Sanpaolo S.p.A. |
| ▶ Bank of America Corporation | ▶ KBC Bank N.V. |
| ▶ Bank of China Limited | ▶ KfW IPEX-Bank GmbH |
| ▶ Belfius Bank N.V. | ▶ Korea Development Bank |
| ▶ Joh. Berenberg | ▶ Landesbank Hessen-Thüringen Girozentrale |
| ▶ Gosler & Co. KG | ▶ Lloyds TSB Bank PLC |
| ▶ BNP Paribas SA | ▶ National Australia Bank Ltd. |
| ▶ Bremer Landesbank Kreditanstalt Oldenburg-Girozentrale | ▶ National Bank of Greece |
| ▶ China Development Bank | ▶ NIBC Bank N.V. |
| ▶ Citigroup Inc. | ▶ NORD/LB Norddeutsche Landesbank Girozentrale |
| ▶ Commerzbank AG | ▶ Nordea Bank AB |
| ▶ Commonwealth Bank of Australia Ltd. | ▶ Pohjola Bank PLC |
| ▶ Coöperatieve Centrale Raiffeisen-Boerenleenbank B.A. (Rabobank) | ▶ M.M. Warburg & CO |
| ▶ Crédit Agricole CIB | ▶ Skandinaviska Enskilda Banken AB |
| ▶ Crédit Industriel et Commercial | ▶ Société Générale CIB |
| ▶ Credit Suisse Group AG | ▶ SpareBank 1 SR-Bank AS |
| ▶ Danish Ship Finance A/S | ▶ Standard Chartered Bank |
| ▶ Danske Bank A/S | ▶ Sumitomo Mitsui Banking Corporation |
| ▶ DekaBank Deutsche Girozentrale | ▶ Sumitomo Mitsui Trust Bank Limited |
| ▶ Deutsche Bank AG | ▶ Swedbank AB |
| ▶ DNB ASA | ▶ The Export-Import Bank of China |
| ▶ DVB Bank SE | ▶ The Governor and Company of the Bank of Ireland |
| ▶ Eksportfinans ASA | ▶ The Royal Bank of Scotland plc |
| ▶ European Bank for Reconstruction and Development | ▶ Unicredit S.p.A. |
| ▶ European Investment Bank | |
| ▶ Export-Import Bank of Korea | |
| ▶ HSH Nordbank AG | |

The shipping industry experts we also approached were identified from the literature and internet research for their involvement in the subject matter. The questionnaire they received was almost identical to the questionnaire⁶ the financial institutions were sent. In all, imug wrote to 21 NGOs (such as Greenpeace), 4 major German political parties, 6 governmental institutions, 3 academic institutions, 13 companies operating in the shipping sector and 16 trade associations (such as the Association of German Pfandbrief Banks).

⁶ Points/questions not relevant or not applicable to “non-financial institutions” were removed from the questionnaire (See Annex 1).

Figure 03:
Distribution of contacted experts by organisation type



A total of 7 financial institutions (12.5 %) answered and returned the questionnaire. 10 financial institutions (17.5 %) contacted or agreed to discuss the subject matter with imug, but returned the questionnaire unedited. 39 financial institutions (70 %) did not respond to the questionnaires despite repeated follow-up. The questionnaires returned by the experts surveyed were as follows: 11 institutions (17 %) filled out and returned the questionnaire, 3 institutions (5 %) made contact and discussed the matter with us but did not fill out the questionnaire. 49 institutions (78 %) did not respond despite our follow-up efforts.

In evaluating the questionnaire, the experts' answers were given equal weighting and summarized without taking "group membership" into consideration; a justified approach in that it does not reduce the number of questionnaires that can be evaluated. The financial institutions that participated in the questionnaire were given access to the questionnaire evaluation results for their benchmark comparisons.

Based, then, on the questionnaire analysis, previous literature research, interviews with experts and our review of both confidentially provided and publicly available information on financial institutions integrating sustainability aspects into their ship finance, imug developed a preliminary set of criteria and a rating methodology⁷ for assessing the sustainability initiatives of financial institutions. We then discussed the set of criteria and the underlying rating methodology that resulted with selected experts and financial institutions, before developing and finalizing it (see Section 5.3). We then used it to assess⁸ the sustainability initiatives in ship finance implemented by the 56 financial institutions mentioned earlier. The evaluation results are given in aggregated form in Section 5.4 and best practice examples worked out in Section 5.5. These examples are intended to show the practical implementation of sustainability aspects in ship finance and to provide orientation to financial institutions wanting to expand their efforts in this field.

⁷ The rating methodology is confidential. However, imug does discuss it with the financial institutions we rate and major parts of it are made available to them.

⁸ Confidential internal documents that the financial institutions made available to imug were also considered during the assessment process.

3. Background

3.1 Stakeholders and their interaction in ship financing

This section provides an overview of some of the basic relationships between the investor, the institution financing the vessel and the stakeholders involved in the construction and operation of a ship. Although not exhaustive, this summary provides the background information required for this working paper.

In simplified terms, the ship owning company or initiator of the vessel's construction (owner) receives a loan from a financial institution for a newbuilding. A distinction is made here between two important financing phases (Brauckmann, Heitzer: 2010): construction financing and permanent term financing.

- Construction phase financing guarantees the payment obligations between the initiator/owner and the shipyard during the vessel's construction. The repayments owing to the bank resulting from the loan it has granted can be collateralized in the construction phase by mortgaging the ship under construction or through security guarantees.
- Permanent term financing on the other hand covers the period from delivery of the completed vessel to the ship owner until the final payment on the debt / loan taken out by the ship owner. The principal and interest payments on this permanent term financing are usually made based on the vessel's charter and transport rates, i.e. the operation of the vessel.

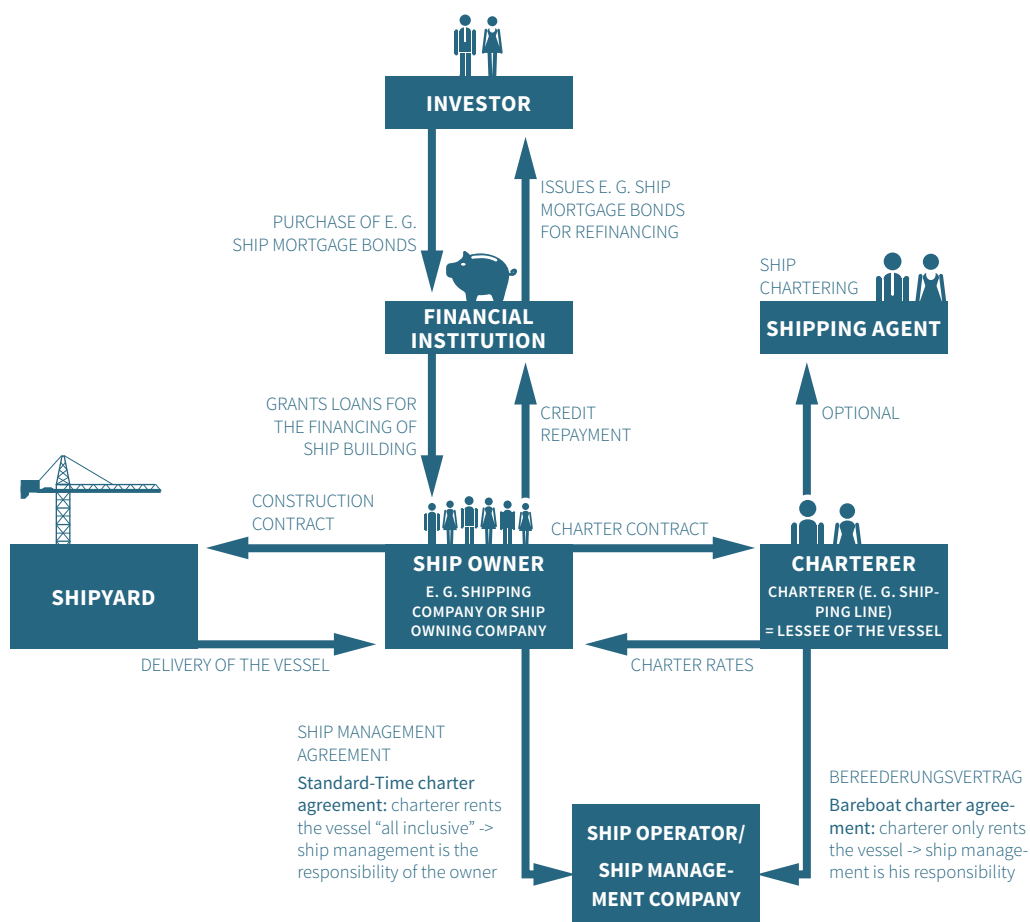
Although two separate phases of financing, the transition from one phase to the other is fluid in practice because the construction phase loan is normally repaid from the permanent term financing. A financial institution which is supporting a client / ship owner with construction phase financing, thus usually knows the terms of the permanent term financing prior to the ship owner signing the contract with the shipyard. In most cases, financing for both phases is provided by one and the same financial institution, but several financial institutions may also be involved.

The stakeholders involved in the construction and operation of a commercial vessel⁹ may vary. This depends on whether the shipping company or the initiator (owner) of the new building is officially a charter company, whether the vessel's management and technical and commercial operation is entrusted to a service provider / ship manager, and whether the charterer then commissions a shipping agent to take charge of the freightage.

⁹ Fishing vessels are also considered within this study.

Capital market investors have a number of options to secure a stake in the maritime sector, e. g. via closed-end investment funds, or the shares of companies active in the shipping industry. Purchasing ship mortgage covered bonds, however, connects a capital market investor with the ship financing described above. Ship mortgage bonds are secured bank bonds which, strictly speaking, serve to refinance a financial institution's ship financing business. The ship mortgage bond is mainly covered by loan claims that are secured by mortgages on ships and ships under construction. The cover assets referred to here serve the investor as collateral on his investments.

Figure 04: Simplified overview of the main actors in ship financing



! The ship management does not necessarily need to be transferred to a third party. If the charter shipping company or the owner undertake this themselves they also have to undertake the tasks themselves depending on the charter contract.

- contract agreement regarding the use of the vessel
- HR matters such as the recruitment of a captain and ship officers
- Preservation of the vessel
- equipment and catering
- bookkeeping and accounting

Source: internal

3.2 Flagging vessels, flagging in foreign countries and flags of convenience

A commercial vessel is obliged to carry a flag that identifies it with a sovereign country. This is done by entering the vessel in that country's ship registry. It was initially common for a vessel to be registered in the country where the ship's owner lived and organized the vessel's commercial operations. However, this is no longer the case for the majority of the world's merchant fleet. In most cases, vessels are registered in one country and managed from another¹⁰. This situation is known as flagging the vessel¹¹ in a foreign country (Gerstenberger, Welke: 2005, p. 226 et seq.). To register a ship outside the country of origin, the ship is registered in the chosen country in an "open registry". Unlike national or "closed" registries, the open registries do not require the ship owner or operator registering the vessel to be a national of that country (European Parliament: 1999).

Changing the nationality of the flag places the ship under the legal responsibility of the registry country (UN: 1982, p. 26). The laws of the country in which the vessel is managed no longer apply to the ship's operations. On this basis, some open ship registries can provide a vessel's management with several advantages over the national registry of its home country. Examples include low taxes on the ship's operations or lower requirements for a seafarer's minimum wage. A ship owner can thus achieve significant cost reductions by flagging the vessel in a foreign country (FIS: 2003). Some stakeholder groups in the maritime sector are criticizing some registry countries for not being able to guarantee consistent enforcement of national and international standards, guidelines and laws on board their ships (see Section 4). The reason given is that these countries lack the will, the power or the administrative apparatus to enforce effective control, facts which could act as an incentive for a ship's operator to circumvent the minimum environmental, social and technical standards or other legal requirements for the vessel's operation (ITF, 4: 2015; Gersterberger, Welke: 2005, p. 236 et seq.; ver.di: 2008). According to the International Transport Workers' Federation (ITF) – a trade union umbrella organization that advocates for the legal interests of seafarers – optimized labour costs, low taxation and fewer regulations are the main reasons for flagging vessels in foreign countries (ITF, 1 : 2015).

Against this background, certain open "national flag" registries are often referred to as "flags of convenience" (FoC). However, there is no general or official definition of the term FoC, or a description of what characterizes a registry country as "convenient".

The Rochdale Committee¹² defined flags of convenience using, among others, the following characteristics¹³ (Kwasniewski, Wagner: 1975). The process of ship registration, for example, is straightforward, and removal from the registry is equally unproblematic. The registry country requires few or no taxes¹⁴ to be paid on income generated through the ship's operations and, in the absence of crewing requirements, the ship can be

10 In terms of the nationalities of the owners, Greece, Japan and Germany have the largest fleets, totaling more than one-third of the world merchant fleet. Using the national registry entries as an indication, however, Panama, Liberia and the Marshall Islands have the world's biggest fleets (CIA 2010) (Annex 3). More than 75 % of all merchant ships are registered in an open registry (see definition in the text).

11 In Germany, for example, flagging a vessel in a foreign country is legally possible in accordance with § 7 of the German Flag Act. It stipulates that the owner or the operator of a vessel has the right to register a vessel for a period of up to two years under a flag other than the German flag. This time limit can also be circumvented because an owner can lodge as many successive applications to register a vessel in a foreign country as required. (Deutsche Flagge, 1: 2015).

12 Rochdale Committee – Committee of inquiry into shipping, London 1970

13 Presented in abbreviated form

14 Levies are often no more than a registration fee and an annual licensing fee calculated according to the vessel's tonnage.

manned by foreign sailors. Another aspect is that these FoC's themselves have no need for any portion of the total registered tonnage for their own commercial trade purposes.

With regard to flagging vessels in foreign countries generally and FoC's in particular, the ITF cites that in most cases there is no "genuine link"¹⁵ as described in the United Nations Convention on the Law of the Sea (UNCLOS) between the owner of the vessel and the country of registration. This makes it difficult for representatives of civil society, trade unions or industry players to obtain transparency and conduct checks on shipping companies. The ITF also points out that FoC's can be identified in cases where the country of registration does not ratify or sufficiently implement important international conventions (ITF, 1: 2015).

3.3 Main stakeholders in the regulation of shipping

Ships sail in national and international waters flying different flags and usually with crews comprising different nationalities. This means that in the maritime sector, national provisions and also international and other higher-level regulations come into play. The international character of maritime traffic makes it difficult to determine which provisions apply when and where. In addition to the national regulatory requirements that the individual registry countries place on vessels and shipping operations, there are also international conventions and directives governing the minimum standards accepted in international maritime traffic. Among other objectives, these conventions aim to make the shipping sector more socially responsible and safer for humans and the environment. The international organizations involved include, e. g. the International Maritime Organization (IMO) and the International Labour Organization (ILO).

"Shipping can only work when the ship as transport medium is also subject to international regulations which are then recognized by the nation states."

Association of German Pfandbrief Banks

The above-mentioned complexities initially evident in the regulatory framework are exacerbated by the fact that different stakeholders are responsible for monitoring and enforcing compliance with these regulations. Inspections are carried out by classification societies, unions or the organizations involved in "port state controls" (see below in the text) to check compliance with the international rules on e. g. maritime safety, the marine environment and the working and living conditions of seafarers.

The following is an outline of the shipping regulation stakeholders who are considered important in connection with the information presented in this paper.

¹⁵ Article 91 of the United Nations Convention on the Law of the Sea states: "... Ships have the nationality of the State whose flag they are entitled to fly. There must exist a genuine link between the State and the ship."

Flag states

The term “flag state” refers to a country that maintains a ship registry in which vessels are registered, or under whose flag a vessel sails. Flag states regulate the legal framework for the ships in its registry. This means that the laws of the flag state determine the laws prevailing on board a ship. Flying the German flag, for instance, is associated with observance of the German Constitution and the German Seaman’s Act, which contains regulations on the working and living conditions of seafarers (ver.di / ITF, 1: 2015).

Once international conventions etc. are ratified, flag states are required to enact these conventions into national law in order to apply them to the ships registered. A flag state is further responsible for ensuring that compliance with these international conventions aboard vessels that fly its flag is checked and enforced. “The quality and intensity of inspections differs greatly, however, among the individual states.” (Deutsche Flagge, 1: 2015).

International Maritime Organization (IMO)

The IMO is a United Nations specialized agency comprising 171 member states and three “associate members”¹⁶. The IMO’s main task is to develop general conditions for the shipping sector, which regulate, inter alia, maritime security, maritime safety and environmental and marine conservation. The IMO’s draft conventions were also created in conformity with and on the basis of the United Nations Convention on the Law of the Sea (UNCLOS), which is the foundation of international maritime law (IMO, 1: 2014).

The IMO has drawn up in excess of 50 conventions and over 1,000 codes and recommendations. A convention does not enter into effect, however, until it has been ratified by a set minimum number of member states, who together must also represent a fixed percentage of the global commercial tonnage. Once these two conditions have been met, the member states that ratified the convention are bound by it and responsible for enacting its provisions into national law and applying the convention on vessels that fly their flags (IMO, 1: 2015). These circumstances make it difficult to clearly conclude the extent to which the standards laid down in a convention enjoy worldwide validity and compliance.

Major conventions which - due to the number of ratifications - have very wide application include the “International Convention for the Prevention of Pollution from Ships” (MARPOL), which is a globally applicable Convention for the protection of the marine environment, the “International Convention for the Safety of Life at Sea” (SOLAS), which essentially deals with the safety regulations and minimum requirements for equipment and provisions on board ships, and the “International Convention on Standards of Training Certification and Watchkeeping for Seafarers” (STCW), which sets out minimum standards for training seafarers (IMO, 1: 2015).

International Labour Organization (ILO)

Like the IMO, the ILO is also a United Nations specialized agency which has as its goal the advancement of social justice, human rights and labour rights. It sees itself as responsible for the formulation and implementation of international labour and social standards, especially the core labour standards. Its significance for the maritime sector lies mainly in its drafting of the Maritime Labour Convention (MLC) in 2006. This convention, ratified by over 30 member states accounting for more than a third of the world’s

¹⁶ Associate members: the Faroe Islands, Hong Kong and Macao (IMO, 1: 2015)

commercial tonnage has been in force since 2012. Among other things, the MLC governs the minimum standards of living and working conditions on board and the health and occupational safety of seafarers. This convention is also only applied by states which have ratified it (ILO: 2006).

Coastal states

The term coastal state designates a country that has access to the sea within its national borders. According to the United Nations Convention on the Law of the Sea (UNCLOS), these countries have entitlements that further define the regulatory framework for international shipping. Thus, a coastal state not only has the right to intervene if a ship's passage within its waters is classed as "prejudicial to the peace"¹⁷, it can also enact corresponding regulations and laws. Under Article 21 of UNCLOS, a coastal state is permitted to establish rules ensuring e. g. safety at sea, protection of the environment¹⁸, preservation of "the living resources of the sea" and compliance with fisheries laws¹⁹. Furthermore, under Article 22 of UNCLOS, a coastal state can adopt provisions and laws with regard to the routes that foreign ships are required to navigate within its territorial waters (UN: 1982).

The UNCLOS has been regulating the responsibilities between coastal and flag states²⁰ since 1982. It also states that vessels - irrespective of their flag - must, when entering a port, comply with the respective regulations and international conventions that apply inside the borders of that coastal state (see port state controls).

Major stakeholders in policing and enforcement

As mentioned earlier, the legal regulations and international conventions established in the various frameworks by the different framework-providing entities such as UNCLOS, IMO, ILO, flag states and coastal states do vary in their application, scope and emphasis. Ensuring that ships, ship operators and ship owners comply with these rules, standards and regulations requires inspections as well as enforcement or sanctioning capabilities for violations. With this in mind, more detailed descriptions are provided below of some of the stakeholders who make important contributions to checking and achieving compliance with these regulations and standards. They include the organizations with both governmental and multinational legitimacy under the "Memoranda of Understanding on Port State Control", private commercial companies such as classification societies who, acting as appraisers, among other things assess and certify the seaworthiness of ships, and unions like the ITF who defend the labour rights of dock workers and mariners.

¹⁷ According to Article 19 of UNCLOS, "Passage is innocent so long as it is not prejudicial to the peace, good order or security of the coastal state".

¹⁸ Article 221 of UNCLOS states that coastal states have the right to enact laws to prevent, reduce and control marine pollution within its coastal waters – they may not exercise any influence on the situation (crew selection, equipment etc.) on board foreign ships.

¹⁹ Article 61 of UNCLOS states that a coastal state can determine the catch size permitted in its waters.

²⁰ UNCLOS, Articles 217 and 218

Port state controls and Memorandum of Understanding on Port State Control

The cornerstone of port state control was laid by 14 European countries in their 1982 agreement on the “Memorandum of Understanding on Port State Control” (Paris MoU²¹). In addition to the Paris MoU, there are also eight other multinational agreements on port state control²² (Bureau Veritas - Marine Division: 2009). These agreements allow member states to make unannounced inspections using uniform inspection standards of vessels entering their ports under a foreign flag in order to ensure compliance with international regulations. Aspects of maritime safety are checked, with attention given to compliance with the need to protect the oceans, the environment and the working and living conditions of seafarers. It is not the conventions that have been ratified by the vessel's flag state that apply in these cases, but rather the conventions recognized by the port state. Vessels sailing under the flag of a country that has not ratified a convention can consequently be inspected for compliance with its guidelines during port state controls.

A ship found to have violations must rectify them. A serious violation can result in a “detention”, with the vessel not permitted to leave the port. The ship itself, the shipping company involved, the flag state where the vessel is registered and the classification society doing the appraisal all undergo performance evaluations based on the number of deficiencies found and detentions already imposed.

These results are recorded in an internationally accessible database and influence the frequency and intensity of future inspections. Which vessels will be inspected and the respective time intervals until a subsequent inspection are determined by the risk factors of each vessel. These factors include the age and type of ship, flag state, classification society, previous detentions (prevented departures), number of defects and the performance of the shipping company (operator) (Deutsche Flagge, 2: 2015).

Flag states and classification societies are ranked according to their performance in port state controls. For flag states, there are basically three categories or rankings (Paris MoU, 2: 2015). If infringements are being discovered on vessels under a certain flag at an above-average frequency, the corresponding flag state is placed on a “black list”. If, by contrast, the port state controls result in no or only a few complaints, this flag is placed on a “white list”. A “grey list” is also kept for upgrading and downgrading between the two lists and for cases where a flag state's performance is only average.

About 18,000 inspections a year are carried out on board foreign²³ vessels under the Paris MoU alone (Paris MoU, 2: 2015). In 2015, 1300 ships were inspected in German ports and well over half were found to have deficiencies. 39 vessels were detained. According to the German flag state administration, the number of offences is increasing with the reason given that there “...is not always enough investment in safety, maintenance and training due to the current...difficult economic climate of maritime shipping” (Deutsche Flagge, 3: 2015).

²¹ 27 states are currently members of the Paris MoU (Paris MoU, 1: 2015).

²² The biggest active organizations in this case are the Paris MoU and Tokyo MoU (Paris MoU, 2: 2015; Tokyo MoU: 2015). In addition to the multinational agreements on port state controls, there is also the U.S. Coast Guard, an organization operating purely on a national level in the United States (Bureau Veritas - Marine Division: 2009).

²³ A vessel which is not in a coastal state's national registry is said to be foreign to the coastal state.

Classification societies

The vessel's operator is generally responsible for the ship's safety and seaworthiness, the crew's living and working conditions on board and for protecting the environment and marine ecology. As mentioned earlier, these considerations are not only monitored and enforced by the flag state and port state; the classification society chosen by the ship owner also plays an important role (BG Verkehr: 2014). Commissioned by the shipping company, classification societies are private companies who act as technical appraisers. In this capacity they design the guidelines for the construction and maintenance of ships and check them. The classification society then certifies the performance level of the criteria established as a so-called "class", which provides information on a vessel's seaworthiness (Goldrein et al.: 2013, p. 83).

Moreover, classification societies are also entrusted by flag states to monitor the compliance of the vessel's equipment with international safety regulations. The scope of such delegation and the classification society chosen can vary among flag states. The choice often favours one of the ten most prestigious classification societies, all of which are members of the International Association of Classification Societies (IACS)²⁴ (Deutsche Flagge 4: 2015). In addition to the companies organized under the IACS, there are about 30 other classification societies (Groß: 2011, p. 133).



Thorben Wengert / pixelio.de

International Transport Workers' Federation

The International Transport Workers' Federation (ITF) is an international trade union umbrella organization uniting about 700 trade unions from the transport industry. The ITF thus represents the interests of more than 4.5 million union members or transport industry employees. One of the ITF's stated aims is to promote compliance with labour rights and human rights worldwide. In the maritime sector, the ITF represents, among other things, the interests of the transport unions at international institutions such as the IMO, serves as a point of contact for seafarers in case of conflict, and initiates or supports campaigns in the maritime sector, such as the abolition of flags of convenience (see Section 3.2). The ITF conducts regular inspections of the living and working conditions on ships whose owners have entered into a cooperation agreement with the ITF. These checks are carried out by over 130 ITF inspectors in ports worldwide. The ITF can inform, e. g. the port state control of any violations discovered and facilitate consultation and legal support for the sailors. (ITF, 2: 2015; ITF, 3: 2015).

²⁴ The IACS is made up of the American Bureau of Shipping (ABS), Bureau Veritas (BV), China Classification Society (CCS), Det Norske Veritas-Germanischer Lloyd (DNV-GL), Korean Register of Shipping (KRS), Lloyd's Register of Shipping (LRS), Nippon Kaiji Kyokai (NK), Registro Italiano Navale (RINA) and the Russian Maritime Register of Shipping (RS).

4. Sustainability in the shipping industry

Over the centuries, the international shipping industry has repeatedly been confronted with regulations introduced in response to devastating accidents or grievances. The UN Convention for maritime safety or SOLAS, for example, originated in response to the RMS Titanic sinking (IMO, 2: 2015). Quite apart from the importance of increasing people's safety at sea, questions about protecting the environment and the oceans and the environmental costs of international shipping have become gained attention over the last few decades. Here, it was the goal of limiting oil pollution on coastlines and not least the accidents involving the oil tanker "Exxon Valdez" in 1989 and the "Prestige" in 2002 that has dominated discussions (Spiegel Online: 2014).

Despite global recognition of international environmental standards like the UN convention MARPOL, and social accountability and labour standards like the UN convention MLC, various experts in the shipping sector still see several areas where action is needed in moving towards greater sustainability in shipping. Interestingly, the feeling is that there is catch-up potential on sustainability issues in all three ESG areas.²⁵

This section contains an overview of the ESG risks that interviews with experts and financial institutions, our research process and the questionnaire results identified as important.²⁶

²⁵ During the survey, experts and financial institutions indicated whether they considered a certain ESG risk as relevant (Annex 1, Question 3). The descriptions of the risks are each followed by an analysis of this question.

²⁶ See Annex 6 for the complete results table.

4.1 Environment

4.1.1 Air pollution and environmental damage

According to a study by a Danish research institute, 50,000 Europeans alone die each year from the effects of air pollution caused by ships (Vesterager: 2012). Some shipping emissions such as carbon dioxide cause climate change²⁷ while others like nitrogen oxides contribute to air pollution.

The following is an overview of some of the emissions attributable to shipping that impact the environment and public health. It contains information on their regulatory status and the technical approaches used to reduce emissions. Although not exhaustive, this information should give an indication of the problem area.

Sulphur and nitrogen oxide emissions

It is in particular the use of heavy fuel oil (HFO) as ship fuel that results in significant emissions of sulphur oxides (SO_x) in maritime transport. The shipping sector is responsible for 13 percent of global anthropogenic SO_x emissions²⁸. SO_x emissions contribute to air pollution and can lead to acid rain and an overabundance of nutrients in the oceans (BUND, 1: 2013).

It should be pointed out here that the permissible sulphur content in HFO is many times that of the permissible content in fuels used on land, e. g. in diesel fuel for passenger cars. Although MARPOL Annex VI has been gradually reducing the permissible sulphur content in marine fuels since 2008, each of the limits stipulated are nonetheless still well above those permitted ashore. The maximum sulphur content permissible by law has remained below 3.5 percent since 2012, with plans in place to reduce it further to 0.5 percent by 2025 (ISL: 2010, p. I). Certain regions and waters classified as particularly worth protecting contain Sulphur Emission Control Areas²⁹ (SECAs) in which additional regulations apply for sulphur emissions from ships (AEC Maritime: 2015). The maximum permissible sulphur content in the Baltic and North Seas SECA's has been 0.1 percent since 2015. However, even at this reduced level, the percentage is many times higher than that permitted ashore - By comparison, the maximum permissible sulphur content in passenger car fuels is set at 0.001 percent (BUND, 2: 2013).

“Shipping companies that choose to use distillate fuel as opposed to HFO should be commended and rewarded”

International environmental organization (anonymised)

It is already possible to use fuels with significantly reduced sulphur content in shipping. Called distillate fuels, their manufacture is however considerably more complicated and thus more expensive. Vessels also need to be modified to use distillate fuel (ISL: 2010, p. 3 et seq.).

²⁷ 2.8 percent of greenhouse gas emissions (in CO₂ equivalents, and on average for the period 2007 – 2012) and 3.1 percent of global CO₂ emissions (on average for the period 2007 – 2012) are attributable to the shipping industry (IMO, 2: 2014, p. 1).

²⁸ Average calculation for the period 2007 – 2012 (IMO, 2: 2014, p. 2).

²⁹ The Baltic Sea, the North Sea, the English Channel and larger areas off the US and Canadian coasts are designated ECA's. Sulphur emissions from ships sailing in these waters cannot exceed 0.1 percent (as of 2015) (ISL: 2010, p. 1).

Besides emitting SO_x, the combustion of ship fuels can also emit nitrogen oxides (NO_x). Overall the shipping sector is responsible for 15 percent of all global anthropogenic NO_x emissions³⁰.

Nitrogen oxides are classed as harmful to humans; they can cause asthmatic reactions and even cancer. As with SO_x, MARPOL Annex VI also specifies maximum emissions values for NO_x. These limits vary depending on the engine class and the age of the vessel (Annex 4).

In the first instance, fuel consumption and thus also SO_x and NO_x emissions can be lowered by reducing a vessel's speed. In general however, the demand from environmental organizations, for example, is that shipping should switch to cleaner fuels. According to a calculation by the German environmental organization BUND, using conventional onshore diesel fuel could reduce by two thirds the SO_x and NO_x exhaust gases emitted by shipping and would save roughly 40 billion Euros worldwide in environmental costs (BUND, 1: 2013).

Sulphur and nitrogen oxide emissions

FINANCIAL INSTITUTIONS' STATEMENT

YES: 100 %

EXPERTS' STATEMENT

YES: 100 %

Source: internal

Particulate emissions

The sum total of particulate emissions caused by ship traffic has increased significantly over the past several years. In the 10-year period starting from 1997, global emissions increased by about 50 percent to 1.8 million tonnes per year in 2007. (Helfre, Couto Boo: 2013, p. 4).

Besides damaging the lungs, particulate matter also adversely affects the heart. It can not only cause lung cancer but also increase susceptibility to heart attacks (NDR.de: 2015). Port city populations in particular are being increasingly exposed to health risks due to the concentration levels of ship emissions, so there is an obvious need on the part of shipping industry stakeholders to do something about the problem. Particulate filters have never been legally required in shipping and, unlike SO_x and NO_x emissions, there are no specific limits for particulate emissions.

There is a correlation between particulate and SO_x emissions. Any action which leads to a reduction of SO_x emissions will also reduce particulate emissions (Helfre, Couto Boo: 2013 p.4). Particulate emissions from ships could be redressed by switching to more environmentally friendly shipping fuel. Converting the exhaust systems to use efficient particle filters could also significantly reduce particulate emissions. (NDR.de: 2015).

Volatile organic compound emissions

Another potential health risk associated with emissions from shipping operations is the release of volatile organic compounds, or VOC's. VOC's are gases and vaporous materials of organic origin that are mainly emitted when tankers load or transport oil products. Washing tanks with crude oil releases VOC's, and they also occur marginally as a

³⁰ Average calculation for the period 2007 – 2012 (IMO, 2: 2014, p. 2).

waste product of combustion engines (Umweltbundesamt: 2004, p. 33, 119).

The potential impact of VOC's on humans is comparatively low. It is mainly during prolonged exposure indoors that VOC's pose a health risk (German Federal Environment Agency, 1: 2014). VOC's are also less harmful to the environment than other shipping emissions because any environmental damage they cause can only occur when they react with sunlight and nitrogen under natural conditions (Department of the Environment, Community and Local Government: 2015). A reduction in VOC's is nonetheless advisable.

Together then with stipulations on the proper handling of other marine pollutants, MARPOL Annex VI governs how VOC's should be handled on board. It stipulates that e. g. tankers carrying crude oil must have in place and implement an approved VOC Management Plan (Seum et al.: 2011 page 51). This management plan describes, for example, which procedure to follow in order to reduce VOC levels emitted during the voyage and when the vessel is being loaded or unloaded (MARPOL Annex VI: 2016). VOC emissions can be reduced through e. g. a combination of increased pressurization and cooling of the load. In the short-haul transport of crude oil, a different approach sees condensation used to harvest VOC's from a tank's atmosphere for use in the ship's engine (Umweltbundesamt: 2004, p. 129).

Emission of volatile organic compounds (VOCs) and particulate matter

FINANCIAL INSTITUTIONS' STATEMENT

YES: 100 %

EXPERTS' STATEMENT

YES: 100 %

Source: internal

CO₂ emissions

Carbon dioxide is responsible for more than 60 percent of global warming, which is why it is considered a driver of climate change (WWF, 1: 2015) and the CO₂ emissions produced by international shipping are enormously important. Shipping is responsible for 2.8 percent³¹ of global greenhouse gas emissions (in CO₂ equivalents) and for 3.1 percent³², or 1,015 million tons, of all global CO₂ emissions (IMO, 2: 2014, p. 1). Just to put this figure in context: in 2014, Germany was the world's sixth largest CO₂ emitter with a balance of 789 million tonnes (Global Carbon Project: 2016). These statistics are made even more alarming by the fact that the IMO is outlining scenarios in its current greenhouse gas study that see marine CO₂ emissions increasing by between 50 and 250 percent by 2050 (IMO, 2: 2014, p. 4).

However, it should also be noted that CO₂ emissions caused by shipping are comparatively low per transported tonne when compared to emissions from other means of transport. An airplane³³, for example, emits 435 grams of CO₂ per tonne-kilometre (tkm), a truck³⁴ releases 80 grams of CO₂ per tkm, while a bulk carrier³⁵ emits only 7.9 grams of CO₂ per tkm and a large tanker³⁶ just 3 grams of CO₂ per tkm (ICS: 2014, p. 2). Considering

³¹ Average calculation for the period 2007 – 2012 (IMO, 2: 2014, p. 1)

³² Average calculation for the period 2007 – 2012 (IMO, 2: 2014, p. 1)

³³ Boeing 747 with a payload of 113 tonnes

³⁴ A weight of over 40 tonnes

³⁵ Between 10,000 and 34,999 DWT (Dead Weight Tonnage)

³⁶ Over 18,000 TEUs (Twenty-foot Equivalent Units)

the importance of shipping to global trade and the fact that CO₂ emissions nearly doubled³⁷ in the 1990-2007 period alone, the goal should be to increase the CO₂ efficiency of sea transport.

The IMO also sees a need to reduce carbon dioxide emissions in the maritime sector. Binding targets to reduce CO₂ emissions have been in place in MARPOL Annex VI since 2013, according to which the CO₂ efficiency of ships will be gradually improved. The plan is to use mandatory measures to reduce the CO₂ that ships emit by between 19 percent and 26 percent³⁸ (depending on the type of vessel) by 2030. In order to achieve this, the IMO has established the “Energy Efficiency Design Index” (EEDI). In force since July 2011, the EEDI stipulates a maximum CO₂ emission level for new vessels. In addition to these regulations, the IMO has also published a guide called the “Ship Energy Efficiency Management Plan” (SEEMP) that promotes various ways to reduce CO₂ emissions, such as improving fuel efficiency. (See IMO, 3: 2015)

Alternative propulsion technologies, alternative propulsion materials and efficiency measures are technical solutions that can be used to reduce fossil fuel consumption in shipping and lower CO₂ emissions. Examples include using residual heat to provide auxiliary forward propulsion, improving the propeller’s efficiency, harnessing wind energy using sails or optimizing the hull design. In addition to these technical approaches, some vessel types could also be modified to use alternative fuels with lower CO₂ emissions such as liquefied natural gas (LNG) or marine diesel oil (See Seum et al.: 2011, p. 12).

CO₂-emissions

FINANCIAL INSTITUTIONS’ STATEMENT

YES: 100 %

EXPERTS’ STATEMENT

YES: 100 %

Source: internal

Air pollution from port operations

Another particularly problematic area very closely linked to the air pollution and environmental damage caused by shipping is clearly evident in port operations, where emissions from incoming vessels and ships moored in port coalesce into high concentrations. The OECD estimates that the port of Singapore alone is responsible for 5.9 percent of Singapore’s total CO₂ emissions and 6.5 percent of the city’s SO_x emissions (Merk: 2014, p. 20). The previously mentioned particulate pollution caused by shipping also exposes seaport populations in particular to greater health risks. (NDR.de: 2015).

The SECA regulations specified by the EU limiting sulphur emissions do include all European ports, but as already mentioned only address the handling of one single pollutant.

One way to reduce emissions from ships in port, for example, is to install shore-side electricity, or cold ironing, which allows the ships to turn off their auxiliary engines and use power supplied by the port. (FIS: 2010).

³⁷ The CO₂ emissions from maritime traffic increase from 562 million tonnes a year in 1990 to 1,050 million tonnes in 2007 (IMO: 2009, p. 29)

³⁸ Compared to the CO₂ emitted at the same energy efficiency without the IMO regulations implemented.

FINANCIAL INSTITUTIONS' STATEMENT

YES: 67 %

NO: 33 %

EXPERTS' STATEMENT

YES: 100 %

Source: internal

4.1.2 Water pollution

Waste and pollutants such as sewage or toxic substances invariably find their way into the sea and onto the coasts, putting the environment and marine life at risk. Despite international regulations specifically aimed at preventing water pollution, the problem is still very widespread.

Water pollution

FINANCIAL INSTITUTIONS' STATEMENT

YES: 100 %

EXPERTS' STATEMENT

YES: 100 %

Source: internal

Illegal disposal of oil sludge

Using heavy oil to operate diesel engines not only releases harmful emissions into the atmosphere, it also causes other forms of environmental damage. A ship's ambient temperature does not allow highly viscous oil to be pumped, and as such it cannot be burned. As a consequence, the oil has to be heated on board ship; a process during which incombustible and toxic components accumulate at about two percent by weight in the form of sludge, which is then drawn off by separators and centrifuges and collected in on-board tanks (poel-tec.com: 2014). The fee-based disposal of this sludge must occur at a port as per MARPOL. Despite MARPOL (Annex I: 2016) prohibiting the disposal of oil sludge at sea due to the damage it causes to the marine environment, oil sludge is repeatedly illegally flushed into the sea in order to save on the disposal charges that would otherwise be incurred in port (Greenpeace magazine, 2014). This practice results in a variety of serious environmental consequences; the plumage of seabirds, for example, loses its insulating effect upon contact with oil sludge and the animals die of hypothermia (World Ocean Review: 2014, p. 50).

Converting to more environmentally friendly fuels that contain fewer harmful by-products is one way to reduce or even prevent sludge. The illegal disposal of oil sludge at sea can also be countered through the appropriate on-board inspections. The logbooks on heavy oil consumption required as per MARPOL (Annex I: 2016) can be used to determine how much sludge is accumulating. The captain of a ship is obliged to maintain a proper record, so comparing these logs with the documentation on the appropriate disposal of oil sludge can uncover a potential violation. However, reviewing the documents is very time-consuming for the authorities in question (Balasko: 2010).

FINANCIAL INSTITUTIONS' STATEMENT

YES: 100 %

EXPERTS' STATEMENT

YES: 100 %

Source: internal

Contaminated bilge water

Bilge water accumulates in the ship's bilge and is a mixture of sea water and a variety of liquids such as heavy oil, lubricating oil, cleaner emulsions, residual cleaning agents, hydraulic oil residues, leakage water, condensation water, corrosion inhibitors and other chemicals in liquid form. The chemical constituents of bilge water pollute the seas. Some of these chemicals can be toxic in nature and absorbed by marine organisms, which not only contaminates the fish but can also impact on those who consume the contaminated animals. (WWF, 2: 2015).

According to MARPOL Annex I, it is permissible to discharge bilge water into the sea insofar as a specific residual oil content value is thereby not exceeded (EPA: 2008). The WWF has stated, however, that this proviso is often ignored, resulting in further pollution of the seas. (WWF, 2: 2015).

In order to reduce the amount of high oil content bilge water being discharged from ships, structural measures on board need to be optimized so that contamination of the bilge water is prevented. This can be achieved through the installation of tanks, for example, that separate sludge and bilge water from each other as much as possible, storing the fluids for proper disposal in port (Safety4Sea: 2011).

Contaminated bilge water

FINANCIAL INSTITUTIONS' STATEMENT

YES: 100 %

EXPERTS' STATEMENT

YES: 100 %

Source: internal

Black water and grey water

There is an accumulation on ships of black water (wastewater with faecal content) and grey water (flush water, shower water and water from kitchen drains etc). Black water in particular promotes the eutrophication of seas and waters. This encourages the emergence of algal blooms³⁹, which can lead to an imbalance in the ecosystem (Seum et al.: 2011 p. 42). Furthermore, waste water contaminated with faecal matter can lead to a discharge of pathogenic, i.e. potentially disease-promoting bacteria into the oceans (Seum et al.: 2011, p. 42). MARPOL Annex IV (2016) regulates how black water is handled, and its discharge into the ocean is prohibited. There are, however, a number of exceptions, e. g. when appropriate on-board sewage treatment plants or facilities for cleaning and disinfecting waste water are available. Compliance with maintaining a minimum distance from the coast for the discharge of black water into the sea, and compliance with a certain discharge flow quality (Kaiser, p. 4-5) are also required. MARPOL stipulates that any grey water mixing with black water has to be treated as black water. There are no

³⁹ The sudden mass reproduction of algae.

legal requirements for the disposal of pure grey water, however, although the traces of nutrients and oxygen-consuming compounds it can contain justify its being classified as critical together with black water.

The most environmentally friendly solution to black and grey water pollution is the disposal of all sewage ashore. There are difficulties in practice however, due to the limitations of on-board storage facilities. Further, many ports are unable to accommodate sewage disposal due to technical requirements. Technical solutions that can be implemented on board, include, e. g. the chemical treatment of wastewater with chlorine, biological cleaning, UV treatments and membrane filtering (See Seum et al.: 2011, p. 42).

Black and grey water

FINANCIAL INSTITUTIONS' STATEMENT



EXPERTS' STATEMENT



Source: internal

(Illegal) disposal of waste and residues

Another factor contributing to water pollution and posing a considerable threat to marine life and seabirds is the disposal of residual materials and waste at sea. 6.5 million tonnes of plastic waste alone end up in the sea every year worldwide and investigations in the North Sea show that waste density and the major maritime waterways clearly correlate. The German Federal Environment Agency sees commercial shipping and the fishing industry as bearing the highest responsibility for the high density of waste at sea (See NABU: 2010, p. 1-3).

MARPOL Annex V provides the general regulations for the disposal of waste at sea. Exemptions and special provisions for disposing waste outside certain special areas, however, ensure that large amounts of waste still end up in the sea (see Annex IV). More effective waste management on board ships could correct this situation and reduce the production of waste on board (Seum et al.: 2011, p. 40).

(Illegal) disposal of waste and residues

FINANCIAL INSTITUTIONS' STATEMENT



EXPERTS' STATEMENT



Source: internal

Organisms carried in ballast water

When sailing empty or with a light load, a ship takes on seawater – called “ballast water” – in its bilges to increase the ship’s weight and thus its stability. Organisms in the water are also drawn up in this process and this ballast water is then drained again in the port of destination. This can lead to the introduction of foreign or invasive organisms into an ecosystem and upset its balance (See BUND, 3: 2013). In 2004, the Federal Maritime and Hydrographical Agency (BSH) conducted a survey on behalf of the IMO to determine the economic costs caused by invasive organisms in German waters. The BSH concluded that the introduction of the Chinese mitten crab into German waters has resulted in costs of about 73.5 to 85 million Euros (BSH, 1: 2013).

The IMO also recognized the spread of foreign organisms as a problem and adopted a Ballast Water Convention in 2004 (Deutsche Flagge, 1: 2015). The Convention has only been ratified by 49 states so far and is therefore not yet in force⁴⁰. (IMO: 2016).

There are technical solutions that can offset the unintended introduction of foreign organisms in ballast water. “Ballast Water Treatment Systems”, for example, are often already installed in new ships. These facilities filter the water using UV treatment and without the use of chemicals. It should be noted, however, that hardly any of the existing fleet have these filter systems installed. Modifying the vessels requires a considerable financial outlay amounting to between 1 and 5 million US-Dollar per vessel (VDR: 2012, p. 29).

Organisms carried in ballast water

FINANCIAL INSTITUTIONS' STATEMENT

YES: 100 %

EXPERTS' STATEMENT

YES: 100 %

Source: internal

Toxic substances in antifouling coatings

The submerged external portion of a ship is exposed to the risk of an undesirable accumulation of animals such as molluscs. This colonization of ship hulls by aquatic organisms such as barnacles, corals, sea squirts, sponges or algae is called “fouling”. Fouling increases the resistance of the vessel through the water which in turn increases its fuel consumption (BUND, 4: 2013). Moreover, there is a heightened risk of the vessel corroding and its manoeuvrability can deteriorate when fouling forms around propellers. Fouling on the hull can also lead to the spread of organisms (Seum et al.: 2011, p. 45). The localized application of chemical agents is used as a countermeasure, but it is a questionable practice from an environmental perspective.

Vessels are commonly painted using special antifouling coatings. There has been criticism of these coatings in the past, however, as some have occasionally been shown to contain toxins, such as TBT⁴¹ (tributyltin hydride), which accumulate over time in the water and sedimentation. In the seventies and eighties, TBT - now banned - was demonstrated in high concentrations in shellfish off the French coast, leading ultimately to the collapse of the entire local shellfish industry (IMO, 1: 2013; BUND, 4: 2013).

Although TBT may no longer be in use, environmentally harmful paints, e. g. based on copper and copper compounds, are still in use and there are no international regulations in place to address the situation. There is at least progress at the national level. Canada and Denmark have passed regulations that severely limit the use of antifouling paints containing copper (BUND: 2015).

Initially, environmentally sound antifouling measures included the use of thin film antifouling with a Teflon layer, or coatings based on silicone. It turns out, however, that this in turn prevents the adhesion of rust inhibitors. Environmentally friendly and effective antifouling is thus not yet available and further research is required (BUND: 2015).

⁴⁰ March 8, 2016

⁴¹ TBT was banned in 2008 with the IMO's ratification of “The International Convention on the Control of Harmful Anti-fouling Systems on Ships”.

FINANCIAL INSTITUTIONS' STATEMENT

YES: 67 %

NO: 33 %

EXPERTS' STATEMENT

YES: 100 %

Source: internal

Accidents at sea (fuel leaks or hazardous cargo)

As previously described, pollutants can find their way into the sea during normal shipping operations and thus lead to water pollution. The same thing can occur as a result of maritime accidents. An accident at sea leads to the most serious consequences for the local environment. If ship fuel or cargo that is particularly harmful to the environment enters the water, the consequences for terrestrial and marine ecosystems are disastrous. The enormous environmental damage from oil leaks resulting from past accidents, such as those involving the oil tankers Exxon Valdez in 1989, Erika in 1999 or the Prestige in 2002 has resulted in some regulation. Since 1993, the IMO has required that tankers be built with a mandatory double hull and that all single-hull tankers are to be decommissioned by 2015 (Greenpeace: 2015).

Although shipping has been made safer in centuries past by advancements in marine technology, marine accidents can still not be completely prevented. Whereas 1 in a 100 vessels sank in 1912, in 2009 it was 1 per 670 vessels (Allianz Global Corporate & Specialty AG: 2012, p. 6). However, considering that the fleet has tripled in the same period, the number of ships lost is still immense. A total of 1,586 ships sank between 2000 and 2010, of which 121 were tankers (Allianz Global Corporate & Specialty AG: 2012, p. 14).

Most accidents involve aging vessels and occur through human error (see also Section 4.2 and 4.3) (Greenpeace: 2015; Allianz Global Corporate & Specialty AG: 2012, p. 6; The Swedish Club: 2011, p. 1 et seq.). Classification societies and insurers can significantly influence ship safety and compliance with safety standards through the control options that exist in their private business models and through the imposing sanctions on ship owners (Allianz Global Corporate & Specialty AG: 2012, p. 7).

Accidents at sea (fuel leaks and hazardous cargo)

FINANCIAL INSTITUTIONS' STATEMENT

YES: 100 %

EXPERTS' STATEMENT

YES: 100 %

Source: internal

4.1.3 Other risks to the environment and biodiversity

Shipping is responsible for other ecological problems besides those connecting ship operations to air and water pollution, as outlined earlier. These other problems include, for example, the detrimental effect of noise produced by ship operations on marine life, the adverse effects of industrial fishing vessels on the environment and on biodiversity, and the irresponsible practices involved in the scrapping of redundant ships.

Shipping noise as a stress factor for marine life

The noise caused by shipping is a stress factor for many marine species. Noise produced by ships severely impairs the communication of animals such as whales and dolphins. As a result, communication among the animals has declined considerably, which may adversely affect their sense of direction or orientation. Similar problems also occur among seals, different species of fish and invertebrate marine life. A further consequence is that whales, for example, are abandoning areas that are particularly affected by ship noise (See Umweltbundesamt, 2: 2014).

The noise pollution caused by shipping has been increasing steadily in recent decades. Background noise in the oceans is now two to three times higher than it was 50 years ago (Umweltbundesamt, 2: 2014). Acidification of the oceans has exacerbated the problem since the water's changing pH values now allow noises to travel better (Ilyina et al.: 2010).

The IMO only addresses the issue of vessel noise in connection with occupational safety aspects for the crew in the “IMO Code for Noise Levels Aboard Ships” and the “IMO Code on High-Speed Craft” (HSC Code). Vessel noise is not addressed in terms of the marine environment (Seum et al.: 2011, p. 50).

Shipping noise as a stress factor for marine life

FINANCIAL INSTITUTIONS' STATEMENT

YES: 100 %

EXPERTS' STATEMENT

YES: 100 %

Source: internal

Pollution caused during dismantling operations

The most widely used procedure for dismantling a disused ship is the “beaching method”. 95 percent of the world's active ship-breaking yards, e. g. in Bangladesh, India or Pakistan, employ this method. Beaching requires sailing the vessel at high speed onto the beach, where subsequent dismantling is carried out. This approach is often accompanied by the irresponsible handling of hazardous materials such as oil, paint, PVC or asbestos (Lloyd's Register: 2011, p. 10), which then find their way directly into the sea or seep into the beach and contaminate the environment. In addition to these environmental risks, the shipyard workers are also often exposed to high health risks through the lack of adequate workplace safety regulations and procedures. This has led to several accidents in the past, often with fatal consequences (Greenpeace et al.: 2005, p. 17). The “human cost” of the beaching method is considered in more detail in Section 4.2.3.

In 2009, the IMO adopted the “Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships” in order to reduce the social and environmental risks associated with beaching and to improve overall responsibility in the ship recycling sector. The convention is aimed at shipping companies, shipbuilding yards, suppliers and demolition yards, and requires those in the target group to keep an inventory list called an “Inventory of Hazardous Materials” or IHM. This inventory lists all the hazardous substances of which a vessel is comprised - with notes on quantities and locations - in order to simplify the identification and processing of toxic substances. The convention further requires certification for ship recycling facilities that consistently adhere to environmental protection and occupational safety regulations (Deutsche Flag-

ge, 6: 2015). At this point⁴², however, the Hong Kong Convention has not yet gone into effect (IMO: 2016).

In late 2013, realizing that it may still take several years to implement the Hong Kong Convention, the EU passed the “Ship Recycling Regulation” or EU SRR, the content of which is largely in line with the Hong Kong Convention. New vessels sailing under an EU flag must maintain an IHM from 31.12.2018 onwards, with the same requirement applying to the existing fleet from 31.12.2020. Non-EU vessels must also keep IHM’s when entering European ports as of the 31.12.2020 (See DNV GL: 2014).

Pollution caused during dismantling operations

FINANCIAL INSTITUTIONS’ STATEMENT

YES: 100 %

EXPERTS’ STATEMENT

YES: 100 %

Source: internal

Fish populations at risk

Industrialized fishing or the industrialized harvesting of fish in the world’s oceans has put fish stocks and biodiversity at risk. Trawl fishing, for example, can promote overfishing and negatively impact biodiversity. The most common trawl fishing method employs “pelagic trawls”, in which a funnel-shaped net capable of holding up to 600 tonnes of fish is dragged through the open water zone between the seabed and the surface (Greenpeace, 1: 2010). The problem with this method is the amount of unwanted by-catch⁴³ which is also caught in the net (Greenpeace, 1: 2014, p. 13). Bottom trawling, whereby a dragnet trawls the sea floor at depths of up to 2,000 meters to catch marine animals such as plaice or shrimp (Greenpeace, 2: 2010), can have even more serious consequences for the marine environment. This practice severely damages the seabed and consequently the habitat of various species, which in turn negatively impacts biodiversity (Kuhrt: 2014). About 80 percent of the world’s edible fish stocks are already considered overfished or heavily exploited (WWF: 2009, p. 2).

According to information provided by FAO, the United Nations’ Food and Agriculture Organization, in 2012 there were approximately 4.7 million fishing vessels worldwide. Of these vessels, only 21 percent are longer than twelve meters and only about 2 percent are longer than 24 meters (See FAO. 2014, p. 32-33). These 2 percent of fishing vessels, however, have the technical capacity to catch more fish than all the smaller vessels combined. This technical upgrade to huge fishing vessels with the aim of fishing commercially results in considerable damage to the marine environment (Greenpeace, 1: 2010).

The profit motive of the companies behind these fishing vessels stands in direct contradiction to dwindling fish stocks and fishing quota reductions. By registering fishing vessels in certain countries, owners benefit from new fishing licenses and subsidies. Flagging vessels in other countries circumvents strict inspection policies and enables the practice of “illegal, undocumented and unregulated” (IUU) fishing. (See Greenpeace, 1: 2014, p. 22). It is estimated that fish and shellfish worth between 10 to 23.5 billion US-Dollar are caught illegally each year (Agnew et al.: 2009 cited from Oceana: 2013, p. 4). The ships making these catches sail mainly under the flags of Panama, Belize or Honduras because in these countries there is a lack of consistency in checking compliance with the agreements on fishing quotas (DiePresse.Com: 2008).

⁴² March 8, 2016

⁴³ This is made up mainly of dolphins and sometimes endangered species (Greenpeace, 1: 2014, p. 13).

FINANCIAL INSTITUTIONS' STATEMENT

YES: 100 %

EXPERTS' STATEMENT

YES: 100 %

Source: internal

4.2 Social risks

Besides the effects on the environment described earlier, the maritime sector also poses immense challenges with regard to “social issues”. These include the crew’s living and working conditions, occupational health and safety, the situation in scrap yards with regard to human rights and labour rights, the challenges associated with employment agencies that specialize in shipping (known as crewing agents) or the impact on the small-scale fishing. Despite the existence of some international conventions, national policies, regulations and laws on these subjects, experts suggest that the risks associated with these deficits remain.

4.2.1 Working conditions

Regulation of the board crew number

The basic rules pertaining to the crew employed on a ship are specified by the IMO. Adopted in 2000, the Principles of Safe Manning also include provisions concerning the size of the crew. They stipulate that manning a ship correctly depends on various factors. Minimum crew size is linked to the vessel’s size, its cargo, the duration of the journey and the obligatory rest periods. These specifications allow for a certain amount of discretion, however, which in the worst case can result in understaffing the vessel and, as a consequence, non-compliance with obligatory rest periods for the remaining crew (see also Section 4.2.2) (IMO, 4: 2015).

In addition to the minimum requirements set by the IMO, the ship owner is bound above all by the national regulations of the state under whose flag his vessel is registered. Regulations can vary among countries, as is the case e. g. with requirements regarding the nationalities of crew members. The captain of a ship flying the German flag must be an EU citizen and the vessel itself, depending on its size, must have up to four other crew members with an EU nationality (Goebel: 2015). These requirements are less restrictive for other flag states (Wille: 2002). The legal provisions of the flag state are of major importance for the ship’s operator in terms of the minimum wage to be paid, payroll taxes and personnel costs in general. These flag states - referred to by some experts as FOC’s for exactly this reason (see Section 3.2) - have no fixed national wage rates and/or allow seafarers to be paid differently in accordance with wage levels in their countries of origin (Gerstenberger, Welke: 2005 p. 229). Since personnel costs are often a large part of the total expenditure for ship operations⁴⁴, many ship owners flag their ships in flag states with looser regulations concerning the origins of crew members (FIS: 2003). Calculations by the auditing company PricewaterhouseCoopers from 2000 showed that a ship sailing under an FOC has potential personnel cost savings of 38 percent on average compared

⁴⁴ According to a HSH Nordbank study from 2009, personnel costs account for between 44 and 55 percent of the total operating costs of a container ship sailing under the German flag (HSH Nordbank: 2009).

with a vessel flying the German flag (FIS: 2003).

It should also be noted, however, that despite the low wages paid to non-European seafarers, for example, their individual incomes are still higher than they would be in their home countries. The wages for a Filipino sailor may be well below those of a German sailor, but they are still significantly higher than the average wage in the Philippines: A worker in the manufacturing industry in the Philippines in 2012 earned on average about 258 Euros per month (Germany Trade & Invest: 2014). The minimum wage for Filipino sailors by contrast is around 570 Euros a month (Manila Bulletin: 2015).

According to the ITF, there are also repeated cases of crews receiving less than the contractually agreed wage and cases of wages being withheld entirely; all of which has nothing to do with wage rate differences. The ITF has indicated that between 2011 and 2013 it facilitated payment to crew members of unpaid wages equalling 103 million US-Dollar (ITF: 2016). According to the ITF, a reason why violations like these occur is that “FOC registries do not monitor compliance with minimum social standards” (ITF: 2013).

Regulation of the board crew number

FINANCIAL INSTITUTIONS' STATEMENT



EXPERTS' STATEMENT



Source: internal

Labour laws and living conditions on board

Apart from specifying crew sizes, the “Principles of Safe Manning” also include regulations with regard to working conditions in international shipping - e. g. working hours and mandatory breaks. The Maritime Labour Convention (MLC) adopted by the ILO is also used in this context and its content consists largely of the minimum standards requiring compliance. Here, the vessel's flag state also determines the labour laws to be applied beyond those applicable under the MLC and IMO.

Flagging a vessel in a foreign country can thus mean that national laws previously applicable on board a ship, such as the German Basic Law, the Seamen's Act or the Works Constitution Act, no longer apply, see (ver.di / ITF, 1: 2015) and no comparable legislation exists in the flag state chosen by the ship's owner. This could lead to a lack of adequate protection for seafarers on board with regard to work-related requirements, and no legal recourse for them either if disadvantaged (ITF, 4: 2015).

In connection with the legal status of seafarers with respect to labour laws, the ITF maintains that risk levels are higher with flag states whose inspections to ensure compliance with the relevant international conventions and national legislation lack consistency (ITF: 2013). This argument is supported by the fact that there are still countries that have ratified the MLC currently listed on the black and grey lists of the Paris or Tokyo MOU⁴⁵. Negative ratings of this kind occur when there have been a number of violations of internationally recognized standards aboard ships registered in those countries, e. g. the crew's working and living conditions or issues concerning maritime safety (see also Section 3.3).

⁴⁵ The Philippines, for example, were downgraded in 2013 from the Tokyo MoU white list to the grey list (Tokyo MoU: 2013) and St. Vincent and the Grenadines were actually on the black list of the Paris MoU in the same year (Paris MoU: 2014).

A revision of the MLC initiated in 2014 is striving to strengthen the legal status of seafarers with respect to labour laws. This includes e. g. improvements in guaranteeing compliance with the contractual and statutory requirements of the seafarers and their families⁴⁶, which are to be achieved through ensuring that the relevant documents and certificates are kept on board to demonstrate compliance with the MLC in regard to safeguarding a seafarer's income. Unless a significant number of the 61 ILO Member States contest the revision, the revised guidelines will take effect in early 2017. The new rules will apply to any vessel flying the flag of a country which has ratified the MLC (ILO: 2014).

In addition to labour laws, the MLC also regulates the minimum standards for seafarers' living conditions on board ship. These include rules on providing meals and drinking water and seafarers' accommodation. The ship operator is responsible for ensuring that mariners have access to "adequate" food and drinking water of "good" quality, and must comply with specific standards of hygiene (ILO: 2006). The ITF also points here to an increased risk that certain flag states may disregard this international framework. The ITF claims that in the course of the regular inspections it conducts on board ships it has repeatedly discovered that the crew is inadequately supplied with food and clean drinking water (ITF, 5: 2015).

Poor living conditions on board

FINANCIAL INSTITUTIONS' STATEMENT



EXPERTS' STATEMENT



Source: internal

4.2.2 Health and safety at the workplace

According to a 2012 study done by Allianz, 75 to 96 percent of maritime accidents are attributed to human error. Mistakes resulting from the crew being overworked or fatigued were found to be the main reason (Allianz Global Corporate & Specialty AG: 2012, p. 41 et seq.). However, the safety of the ship and its crew can also be jeopardized by an inexperienced or poorly trained crew, communication difficulties due to language barriers or non-compliance with "Safety Management Systems" (The Swedish Club: 2011, p. 5). Although the number of accidents at sea resulting in death has decreased in recent decades, the seafaring profession is still one of the most dangerous occupations⁴⁷. According to ITF, over 2,000 seafarers involved in maritime accidents die each year. Some flag states are increasing the risk of a maritime accident through failing to monitor compliance with international conventions or failing to have regulations in place that go beyond the minimum standards (See ITF, 5: 2015).

⁴⁶ With respect to compensation, for example, in the event of long-term sickness or death (ILO: 2014).

⁴⁷ In Great Britain, for example, the number of accidents among seafarers resulting in death is twelve times higher than the average number for the other occupations (Allianz Global Corporate & Specialty AG: 2012, p. 6).

FINANCIAL INSTITUTIONS' STATEMENT

YES: 57 %

NO: 43 %

EXPERTS' STATEMENT

YES: 78 %

NO: 22 %

Source: internal

Communication problems of the crew (language barriers)

It is not uncommon for a ship's crew to originate from different language areas, a fact which is evident regardless of which flag the ship is flying. However, the risk of language barriers among the crew on ships not flying an FOC is minimized due to the often stricter nationality requirements for crew members (UK Chamber of Shipping: 2012).

If it is impossible or difficult for someone to understand and be understood among a multinational crew, it can lead to disturbances in workflows or hinder communication in the event of a technical problem. This, in turn, can result in mistakes in the ship's operation and also cause accidents (Hahne: 2007, p. 1). In order to counter this problem, the "IMO Marine Standard Communication Phrases" (SMCP) were integrated into the "International Convention on Standards of Training, Certification and Watchkeeping for Seafarers" (STCW). The SMCP regulates certain communication requirements by establishing a standardized exchange of information between vessels and the shore, among ships and among the crew of a ship. Furthermore, the English language is specified here as the basis for communication on board. Since however the SMCP is only binding for the navigating officers on ships, communication among the remaining crew and with it an essential part of the work processes remain largely unregulated (IMO, 5: 2015).

Communication problems of the crew (language barriers)

FINANCIAL INSTITUTIONS' STATEMENT

YES: 57 %

NO: 43 %

EXPERTS' STATEMENT

YES: 78 %

NO: 22 %

Source: internal

Insufficient training of the crew

The "International Convention on Standards of Training, Certification and Watchkeeping for Seafarers" (STCW) also sets out the minimum standards required in relation to the qualifications of seafarers. This includes the requirement, for example, that members of the crew must be specially certified to perform certain activities on board (STCW: 2010). With a "Certificate of Competencies" (CoC), navigators can prove that they have been trained in specific disciplines which include "Basic Safety Training", "Survival Craft and Rescue Boats" and "Advanced Fire Fighting" (IMO: 2010). In the case of many flag states, a seafarer must possess certain CoC's as essential prerequisites before even applying to work on board a ship (MPA: 2015).

One problem in this regard is the existence of spurious documents, e. g. fake CoC's (IMO, 2: 2013, p. 3 et seq.). An IMO survey of national maritime administrations conducted in 2001 discovered that over 12,000 fake CoC's (IMO, 6: 2015) had been reported. The number of fake CoC's still undiscovered is likely to be significantly higher, which suggests that significant numbers of seafarers do not have the necessary training in accordance with

the STCW. This can put a vessel's safe operation at risk.

The STCW also stipulate that certifications must be renewed after a maximum of five years (BSH, 2: 2013).⁴⁸ A vessel's flag state is responsible for ensuring that the ship's personnel receive this training course.⁴⁹ The flag state's administration is also responsible for ensuring that seafarers can produce the necessary documents, e. g. training certificates.⁵⁰

Insufficient training of the crew

FINANCIAL INSTITUTIONS' STATEMENT



EXPERTS' STATEMENT



Source: internal

Overworked crew due to long working hours

The MLC regulates the internationally recognized standards on working hours at sea which stipulate, among other things, that a seafarer cannot work more than 72 hours in a single week and is entitled to a total of 77 hours of rest per week (IMO: 2010, p. 220). However, there is some leeway with this requirement to extend shifts or shorten breaks. Consequently, the number of working hours specified in the MLC, for example, can not only be exceeded during an emergency, but also when the captain deems it necessary under certain conditions (ILO: 2006).

A study entitled "Seafarer Fatigue: The Cardiff Research Programme" has examined to what extent the provisions of the conventions on working hours are respected in practice. The study, which examined the working hours of 1,856 seafarers, concluded that nearly half of them were working more than 85 hours a week. Seeing that 25 percent of the sailors admitted to having fallen asleep during their watch, and another 37 percent rated their excessive workload as a threat to the safe operation of the vessel (Smith et al.: 2006, p. 46), this fact also seems to affect safety on board.

Over-worked crew due to long working hours

FINANCIAL INSTITUTIONS' STATEMENT



EXPERTS' STATEMENT



Source: internal

Lack of attention to the safety management system

In addition to the dangers that might arise from a fatigued and overworked crew, non-observance or circumvention of the applicable safety regulations expose the crew to further risks.

The SOLAS Convention imposes requirements with regard to safety measures on board ships. Examples include guidelines on the required rescue equipment, safety provisions

⁴⁸ see STCW Regulation I/5

⁴⁹ see STCW Regulation I/4, I/11.4

⁵⁰ see STCW Regulation I/14.1.3

and technical equipment (IMO, 8: 2015). Some of the provisions of this convention can be nullified by special permission issued by the flag State in question. The SOLAS Convention requires, for example, that the safety bulkheads on cruise ships must be completely closed when at sea. Panama and the Bahamas, however, allow some cruise ships flying their flag to leave the bulkheads open at sea because it eases some of the workflow. Such exceptions can constitute a significant safety risk in the event of the vessel taking water (See ADAC. 2012)⁵¹.

Lack of attention to the safety management system

FINANCIAL INSTITUTIONS' STATEMENT



EXPERTS' STATEMENT



Source: internal

Alcohol and drug abuse

Shipping can place the crew under severe psychological, psychosocial and physical stress given their long hours and the long periods at sea, with exhaustion and depression the possible result. These circumstances – caused or exacerbated by sleep deprivation, loneliness or homesickness – can promote the abuse of alcohol and/or drugs as putative stress relievers (Carotenuto et al.: 2012, p. 190). According to surveys from 2014, on average 14.5 percent of seafarers consume alcohol excessively and three to ten percent of the sailors on board take other drugs (Pougnet et al.: 2014, p. 199).

Regulations against the abuse of drugs and alcohol on board ships have so far only existed at the national level. In US territorial waters, for example, there are precise rules for dealing with alcohol and drugs on ships and the Philippines have enacted seafaring rules and sanctions for their seafaring nationals that apply regardless of where they are deployed (ILO: 2001). Although international guidelines⁵² exist for the prevention of alcohol and drug abuse in the shipping industry, they are not binding (IMO, 8: 2015).

Alcohol and drug abuse

FINANCIAL INSTITUTIONS' STATEMENT



EXPERTS' STATEMENT



Source: internal

4.2.3 Other social problem areas

In addition to the risks described in relation to the crew's specific living conditions, working conditions, health and safety, seafarers can also experience problems off the ship and problems can also arise for other social groups in the shipping sector. Three cases in point include the situation regarding human and labour rights in dismantling facilities, the challenges associated with recruitment agencies specializing in the shipping industry and the impact of industrial fishing vessels on small-scale fishing.

⁵¹ It is not known whether flag states can also issue permits of this kind for container shipping.

⁵² Regulation 5 in Part B of the STCW (IMO, 8: 2015)

Extreme working conditions at dismantling facilities in developing and emerging countries

The impact of dismantling facilities on the environment in many developing and emerging economies⁵³ has already been discussed in Section 4.1.3. The workers there are exposed to accidents and long-term ill health not least because of the irresponsible handling of pollutants, but mainly because of the inadequate or sometimes total lack of safety precautions and safety regulations in these ship-breaking yards. An Indian study has examined the effects of the working conditions on the shipyard workers in Alang. According to the results, approximately 16 percent of the workers who work there are affected by a special form of pneumonia, which is caused by their permanent exposure to asbestos at work (Helfre: 2013, p. 5). In addition, Greenpeace and the International Federation of Human Rights (FIDH) estimate the number of fatally injured workers in the dismantling facilities in Chittagong (Bangladesh) to be at least 1,000 cases over the past three decades (Greenpeace et al.: 2005, p. 17).

In addition to the catastrophic working conditions in some dismantling facilities, cases of child labour have also been reported. FIDH estimates the proportion of children under 10 years of age working in dismantling facilities in Chittagong at 10 percent, and the proportion under 15 years of age to be between 15 and 20 percent⁵⁴ (FIDH: 2008, p. 15).

Extreme working conditions at dismantling facilities in developing and emerging countries

FINANCIAL INSTITUTIONS' STATEMENT

YES: 100 %

EXPERTS' STATEMENT

YES: 100 %

Source: internal

Lack of regulation and quality of crewing agents

Job vacancies in shipping are often filled with the help of private employment agencies, or crewing agents. The MLC stipulates that these agencies are subject to certain rules and require permission to function as recruitment agencies from the flag state in which they operate (Deutsche Flagge, 7: 2015). Crewing agencies can also have private certification companies certify them as working in full compliance with the regulations set down out in the MLC (Bureau Veritas: 2015).

The MLC⁵⁵ requires flag states to monitor local crewing agencies to determine whether they are violating the rights of seafarers. This includes, for example, policing the prohibition on seafarers having to pay a fee for their own placement with a ship owner (ILO: 2006). Crewing agencies, however, continue to ignore the rules, with sailors often charged a fee for their (purported) recruitment (ITF, 7: 2015). A few specific crewing agencies are also accused of employing false promises with regard to wages in order to recruit sailors (Seafarers' Rights: 2013; ITF, 6: 2015).

⁵³ Working conditions - especially in the shipyards in Chittagong or Alang - come under harsh criticism from some NGOs (see e. g. Frey: 2013, p. 23; Sarraf et al.: 2010, p. 1-2).

⁵⁴ The dismantling facilities know the figures and dispute them. The local shipyards claim that they do not employ children.

⁵⁵ Regulation 1.4

FINANCIAL INSTITUTIONS' STATEMENT



EXPERTS' STATEMENT



Source: internal

Danger to local traditional fishing

Nearly 95 percent of the existing fisheries are classified as small-scale fishing.⁵⁶ Small-scale fishing is the livelihood for nearly 200 million people worldwide. Commercial fishing threatens the existence of small-scale fishing at different levels. The capacity advantage and technical superiority of industrial fishing vessels decimate the general fish stocks and hence the catches of small-scale fishermen. (See McGoodwin: 2001, p. 2). The situation in the territorial waters of West Africa is an example of the massive encroachment on small-scale fishermen. The area was fished extensively in recent years by fishing fleets, resulting in a decline in catches which threatened the existence of small-scale fishing communities in West Africa (Schäfer: 2013). This imbalance between commercial fishing enterprises and local fishing, however, is not restricted to emerging or developing markets. The livelihoods of many local fishermen in Scotland are also threatened by the unrestricted fishing practices of industrial fishing vessels (McGoodwin: 2001, p. 286).

Danger to local traditional fishing

FINANCIAL INSTITUTIONS' STATEMENT



EXPERTS' STATEMENT



Source: internal

4.3 Governance risks

The shipping industry is facing a number of challenges with regard to responsible corporate governance and effective regulation. The majority of risks associated with governance stem from the fact that some flag states do not adequately comply with their obligations in accordance with UNCLOS, Article 91 "Nationality of ships" and Article 94 "Duties of the flag state". Nonetheless, it is not these conditions alone that are causing the problem. Responsible corporate management ultimately always lies with the owner and operator of the ship. Some actors in the shipping industry are encouraged to conduct themselves unlawfully or unethically, however, when a flag state does not have the political will or administrative machinery to achieve the necessary transparency in the ownership structures, or enforce effective controls to ensure compliance with national and international regulations. A flag state is a further governance risk for shipping due to its political instability or susceptibility to corruption. Moreover, some coastal states lack the means and capabilities to ensure sufficient security against piracy in their territorial waters.

⁵⁶ See McGoodwin: 2001, p. 2

4.3.1 Anonymity or concealment of ownership

Anonymity in the event of prosecution

The often complex ownership and operator structure of merchant ships makes it difficult to determine the “actual” commercial owner. By guaranteeing ship owners anonymity, open ship registries often exacerbate the already existing complexity in the ownership structures. Complex multinational enterprises, shell corporations, trustees, foundations or other intermediaries can be recorded in the ship registry as the owner of a vessel, thereby obscuring the identity of the actual owner (See OECD: 2003, p. 3; Gianni: 2008, p. 19).

Some ship registries advertise openly with the promise of ownership anonymity. Since 1990, International Registries Inc. or IRI, for example, has been in charge of administering the ship’s registry of the Marshall Islands. According to media reports, IRI aggressively advertises the advantages of the anonymity that ship owners can enjoy there in its sales negotiations. In response to a fictitious business enquiry, IRI has reportedly declared to a French newspaper that the names of the management and the partners who formally own a ship do not need to be provided when registering in the Marshall Islands (See Sharife: 2010).

In cases involving violations of the law or damage claims (e. g. stemming from environmental damage or safety issues), this concealment of ownership can enable ship owners to escape prosecution (Wahlhorn & Bühler: 2004; OECD: 2003, p. 4). The anonymity that has been established makes it almost impossible for the authorities and law enforcement agencies, e. g. public prosecutor, to determine who is actually responsible (OECD: 2003, p. 12).

However, it should be noted that it is not the existence of open registries per se that encourages the concealment of true ownership, but rather the low registration requirements that often prevail. It is thus also possible in principle to conceal ownership in “closed” shipping registries. Significant additional effort is needed to achieve this, however, due to the stricter requirements in the registration process (See OECD: 2003, p. 16).

Anonymity in the event of prosecution

FINANCIAL INSTITUTIONS’ STATEMENT

YES: 100 %

EXPERTS’ STATEMENT

YES: 89 %

11 %

Source: internal

Circumventing embargoes

The anonymity available to ship owners that is described here can not only lead to difficulties in prosecuting individuals or companies, but also facilitate the circumvention of international embargoes against states. This is due to the fact that a possible lack of a “genuine link”⁵⁷ between the owner of the vessel and the country of registration also appears at first glance to be an indistinct structure with regard to the actual nationality of the ship. In other words, the obfuscation of ownership structures often made easier by open ship registries makes it very difficult to track the vessel’s true commercial country

⁵⁷ Article 91 of the United Nations Convention on the Law of the Sea states: “... Ships have the nationality of the State whose flag they are entitled to fly. There must exist a genuine link between the State and the ship.”

of origin. This situation is particularly precarious when a ship is linked either through its flag or its actual ownership to a country upon which embargoes have been imposed, or it enables goods to be traded to a country upon which embargoes have been imposed. Incorporating a front company (headquartered in another country) into the ownership structure obscures the economic connection between the vessel and the state which is subject to sanctions, making it possible to circumvent an embargo placed on that state (Thomson Reuters Accelus™: 2013, p. 6).

This was the method used by the North Korean shipping company OOM. It concealed the true nature of its connection to North Korea and its ships were thus able to sail unnoticed to at least ten countries (World Maritime News: 2016; UN.org: 2014).

Circumventing embargoes

FINANCIAL INSTITUTIONS' STATEMENT

YES: 100 %

EXPERTS' STATEMENT

YES: 87 %

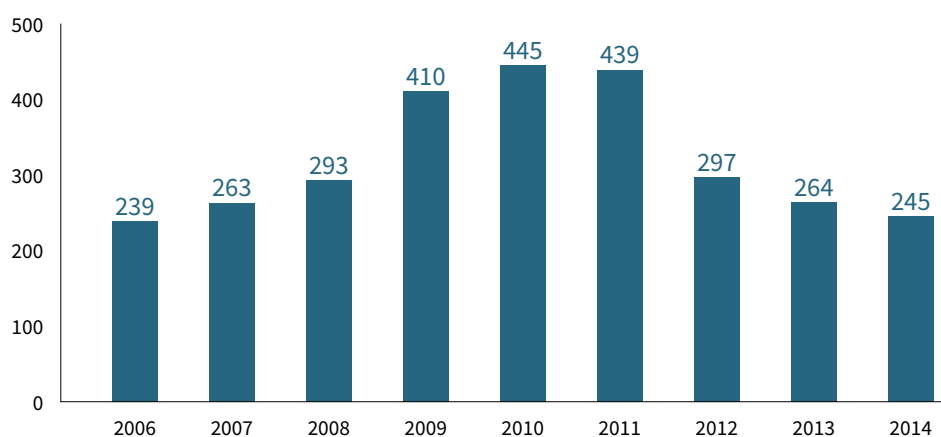
13 %

Source: internal

4.3.1 Piracy

Piracy⁵⁸ is a threat to international shipping. In recent years, Somalia's waters in particular have been the focus of political and media attention due to a high number of pirate attacks on ships. In 2015 it was predominantly Southeast Asian waters and the coastal areas off West Africa which were affected by piracy (Handelsblatt: 2015).

Figure 05: Amount of pirate attacks worldwide from 2006 until 2014



Source: Statista: 2015

⁵⁸ "Piracy constitutes violence, property crimes or deprivations of liberty perpetrated for selfish purposes through the use of a maritime craft or aircraft on the high seas or in other areas that are not subject to state authority" (Statista: 2015).

Although the number of pirate attacks on ships has been declining since 2010 (see Figure 5), piracy is still a conspicuous problem for the shipping industry (Statista: 2015). The 54 cases of piracy registered worldwide by the International Maritime Bureau⁵⁹ in the first quarter of 2015 constitute a ten-percent increase in attacks compared to the same period in the previous year (Handelsblatt: 2015).

The coastal states affected are often not able to adequately protect ships from pirate attacks. This leads to particularly sensitive sea areas requiring protection by international military alliances, as is the case off Somalia, for example. A naval force has been patrolling an area 500 nautical miles off the Somali coast since 2008. Although the protection primarily guarantees humanitarian aid, it is also intended to effectively combat piracy in the region in order to make the sea area safer for the passage of merchant vessels (Bundeswehr: 2015).

Despite military intervention ensuring safe passage along the trade routes, it seems that the safety of ships and their shipping companies is still regarded by the IMO as insufficient. The IMO adopted a directive in 2011 which allows shipping companies active in the High Security Zone of Somalia to use armed security personnel on board their ships (IMO, 10: 2015) and many shipping lines have employed private security companies on ships that cross the danger areas (Roth: 2012). As a result of the military presence and the presence of armed guards on board ships, the number of attacks off the Somali coast has declined sharply⁶⁰.

From the point of view of shipping in general and the safety of the seafarers, the decision to allow private protection in the form of security personnel on merchant ships to supplement state military protection is a welcome one. It does, however, produce an element of risk through the disproportionate use of force by private security companies. Only some flag states impose requirements with regard to the certified “quality and professionalism” of security companies on ships.

The Federal Republic of Germany, for example, saw to it that security services could serve on ships flying the German flag only if they meet the requirements set out by the Federal Office of Economics and Export Control (BAFA: 2013). In the case of a flag state that has not laid down any rules for checking the security personnel deployed, the risk of the disproportionate or unprofessional use of force is higher.

Piracy

FINANCIAL INSTITUTIONS' STATEMENT

YES: 100 %

EXPERTS' STATEMENT

YES: 87 %

13 %

Source: internal

4.3.3 Other governance risks

Ownership concealment in some open ship registries, the resulting legal and law enforcement difficulties and the risk of piracy are not the only challenges from the point of view of governance. There are also problems linked to the poor governance structures

⁵⁹ The International Maritime Bureau is primarily entrusted with the task of preventing abuse and fraud in the shipping industry and by extension is also charged with combating piracy. (ICC: 2015).

⁶⁰ Number of attacks by pirates after enactment of the directive in 2012: 297 (439 in 2011) (Statista: 2015)

of a flag state, such as susceptibility to corruption or the linking of revenue from a ship registry to a regime subject to international sanctions. Furthermore, a flag state's lack of assertiveness or political will increases the likelihood of certain risks, such as criminalization of the crew, the registration of highly deficient and decrepit vessels, or the transport of destabilizing commodities.

Transport of destabilizing commodities

The irregularity of inspections carried out by some flag states on vessels sailing under their flag and the complex constellation of jurisdictions at sea can encourage the illegal transport of destabilizing commodities, e. g. weapons and drugs, or dual-use items such as weapons-grade uranium. The authorities of coastal states cannot perform inspections on board a ship and confiscate goods on the high seas without the flag state's prior consent (Griffiths & Jenks: 2012, p. 11). The flag state alone has the sole authority to carry out inspections of this kind. With some FoC's, these inspections rarely or only ineffectively take place (Griffiths & Jenks: 2012 p. Summary VI). A study done by the "Stockholm International Peace Research Institute" (SIPRI) has investigated the relationship between the illegal transport of destabilizing commodities by ship and the affiliation of the respective vessels to a Flag of Convenience as defined by the ITF.⁶¹ It was found that, on average, the transport of destabilizing commodities is disproportionately higher on ships sailing under FoC's (Griffiths & Jenks: 2012, p. 28).

Besides the inadequate inspections carried out by flag states and the overall complexity of the legal situation in the shipping industry, the concealment of the true ownership of vessels as described in Section 4.3.1 also makes it difficult to prosecute when destabilizing commodities are discovered being transported. There are also no comprehensive ship or cargo inspections being performed in the ports. According to estimates made by the UN, only about two percent of all shipping containers are inspected in port (Griffiths, Jenks: 2012, p. 37).

Transport of destabilizing commodities

FINANCIAL INSTITUTIONS' STATEMENT

YES: 100 %

EXPERTS' STATEMENT

YES: 87 %

13 %

Source: internal

Derelict and qualitatively deficient ships

In accordance with UNCLOS, a flag states must ensure that vessels flying its flag are seaworthy. In order to ensure that a ship complies with all the necessary measures for safe shipping, IMO requires them to be checked and certified by a qualified appraiser. An inspection of the ship's condition has to take place before registration and at regular intervals after registration of the vessel.⁶²

It is questionable whether all flag states have the necessary resources to have the seaworthiness of all the vessels flying their flag inspected and to ensure that a conscientious quality inspection has been carried out prior to the registration date. The ITF notes that some vessels registered under FoC's are significantly older than the average for the

⁶¹ The observation period covered the years 1991-2011 and the sample size was 529 ships (Griffiths, Jenks: 2012, p. 28).

⁶² See UNCLOS Article 94 4.

world fleet, with the result that some are no longer fully seaworthy (ITF, 5: 2015). The ITF has declared the five shipping registries with the largest number of ships that have sunk - Panama, Cyprus, St Vincent, Cambodia and Malta - to be FoC registries (ITF, 7: 2015).

The conclusion that vessels registered under FoC's are qualitatively substandard must be checked for its universal applicability because the ITF has its own interpretation of an FoC. Panama, Cyprus and Malta, for example, are on the Paris MoU white list, i.e. ship inspections have resulted in few if any complaints about vessels registered in these flag states. It is also obvious that, in absolute terms, the Panamanian registry as the flag state with the most registered vessels (Annex 3) also has a large number of ships that have sunk. The ITF's conclusion is supported, however, by the fact that Saint Vincent and Cambodia are on the Paris MoU black list (Paris MoU, 2: 2015).

"We generally believe that ESG risks are mainly attributable to the shipping company and not only to the flag"

Bremer Landesbank Kreditanstalt Girozentrale

In addition to a ship's flag, conclusions can also be drawn about its quality by looking at the shipping company and the certifying classification society (Wahlhorn & Bühler: 2004). If one considers the results of the vessel inspections carried out under the Paris MoU, for example, there is a recognizable link between the reputation of the classification society involved and the performance of the vessels. The classification societies which are members of the IACS were rated in the current Paris MoU performance list⁶³ as "high" or "medium", the two best performance ratings (Paris MoU, 3: 2015, IACS: 2016).

Derelict and qualitatively deficient ships

FINANCIAL INSTITUTIONS' STATEMENT

YES: 100 %

EXPERTS' STATEMENT

YES: 80 %

NO: 20 %

Source: internal

Criminalization of the crew

The IMO's "Guidelines on Fair Treatment of Seafarers in the Event of a Maritime Accident" from 2006 define seafarers as workers with a special need for protection. The international nature of the shipping industry means that seafarers come into contact with various national laws that may differ in terms of content. This protective function is usually exercised by the seafarer's country of origin or by the flag state of the vessel (IMO, 9: 2015). According to the ITF, however, some flag states neglect this protection of seafarers on vessels flying their flag (ITF 2005), which can lead to the flag state not providing seafarers with sufficient legal protection. An example would be a case of environmental pollution caused by a maritime accident with no-one at fault. Something like this happened in the accident involving the "Prestige" in 2002, after which the Greek captain of the ship was held in custody in Spain for several months without any clear evidence of blame. The Bahamas - the flag state - made no effort to respond to the situation (ver.di: 2008). In addition to the lack of protection of seafarers by their countries of origin or the flag

⁶³ The Paris MoU Performance List measures the frequency of inspections and detentions that the ships have undergone within a certain time frame. These are then allocated to the classification societies of those vessels so that these classification societies can be placed on a ranking list.

state, controllable accountability or the actual complicity of the crew also constitute governance risks for seafarers when the law is violated. The crew can thus be prosecuted for human trafficking even in the absence of “active / criminal” contributory negligence if the port authority were to discover “stowaways”, i.e. people entering a country illegally by ship (Stella Maris: 2007).

Criminalisation of the crew

FINANCIAL INSTITUTIONS' STATEMENT

YES: 100 %

EXPERTS' STATEMENT

YES: 87 %

13 %

Source: internal

Danger of corruption

Because of the international nature of the shipping industry, ship crews and shipping lines can have contact to maritime authorities or port staff in countries where bribery and extortion are known to occur. The container shipping company Maersk Line reports that bribes - in the form of supposedly legitimate fees - have regularly been imposed on its vessels. Bribery is considered the norm in some countries, and international conventions such as the United Nations' Convention against Corruption are often ignored. (See Andersen: 2012).

Danger of corruption

FINANCIAL INSTITUTIONS' STATEMENT

YES: 100 %

EXPERTS' STATEMENT

YES: 89 %

11 %

Source: internal

Revenues from ship registries finance sanctioned states and destabilizing commodities

Revenues generated by shipping registries belong to the public finances of the flag state. This can mean, for example, that a shipping line that registers a vessel or vessels in a flag state where the human rights situation is regarded as critical contribute additional revenue to this state and thus indirectly support and stabilize the prevailing system.

The ship registry of Liberia in 2003 is an example. At the time, the Liberian ship registry was earning the African country annual revenues of about 18 million US-Dollar. There is a high probability that, at the time, the revenue from the shipping registry of Liberia was supporting the regime of the later convicted war criminal Charles Taylor. (See Thoms: 2003).

Revenues of the ship registries finance sanctioned states
and destabilizing commodities

FINANCIAL INSTITUTIONS' STATEMENT



EXPERTS' STATEMENT



Source: internal

5. Sustainability in ship financing

90 percent of global trade uses maritime transport (ICS: 2016). This statistic not only illustrates the importance of shipping for the transport of goods, it also shows how important it is for the shipping industry to consider environmental and social issues. While the sector itself is challenged to engage with sustainability aspects in shipping, financial institutions active in ship finance are also being asked to do their part.

After describing the sustainability-related issues of the shipping industry in Section 4, in Section 5 we focus on the role of financial institutions as financiers of shipping. For this purpose, imug examines which sustainability aspects financial institutions should take into consideration when financing ships. As described in Section 2, imug initially conducted a survey of financial institutions and experts on the relevance of sustainability aspects. Interviewing these two groups allows imug to consider the relevance of sustainability issues for the shipping industry from different perspectives. The expert group comprises various stakeholders from the shipping sector: e. g. financial organizations, NGOs or experts from the shipping industry.

Initially, the business case for the integration of sustainability criteria in the financing policies of financial institutions is derived from the results of the survey. In the next section of this chapter imug analyses which individual environmental, social and governance risks were considered relevant by financial institutions and experts. It then compares the results of the two respondent groups to establish the sustainability issues relevant for ship financing policies. Using these criteria imug then evaluates the efforts of 56 financial institutions to achieve sustainability in the ship financing sector. This evaluation forms the basis for identifying best practice examples among financial institutions, which are described in the last section of this chapter.

5.1 Business case for financial institutions

The motives that financial institutions have in integrating ESG criteria in their ship financing business (Annex 1, Question 2) were among the aspects examined by imug during the interviews it conducted with experts and financial institutions. The idea here is to examine these motives from the perspective of financial institutions with the intention of showing whether, where and to what extent financial institutions should concern themselves with sustainability aspects in their ship financing business for commercial reasons.

There were indications of multiple motives in the responses of both respondent groups. Some of the motives described by financial institutions and experts form an intersecting set, and the arguments put forward by the two respondent groups can be divided

into three categories: profitability, CSR and reputation management, and legal requirements. The figure below compares the motives stated by financial institutions and experts for financial institutions to consider ESG aspects in ship financing (statements shortened and summarized).

Figure 06:
Arguments for integrating ESG aspects into the ship financing business

Arguments from financial institutions	Arguments from experts
Profitability	
<ul style="list-style-type: none"> ▶ Integrated, improved portfolio management ▶ Better marketing of the ship portfolio ▶ Optimization of the institution's own risk position ▶ Support customers in managing ESG risks ▶ Effectiveness of risk management assured ▶ Vessels must fulfil environmental requirements to succeed commercially ▶ Investors offered a sustainable investment ▶ Loan repayment is influenced by environmental and social issues 	<ul style="list-style-type: none"> ▶ Borrower's profitability is influenced by ESG risks ▶ Environmental performance of ships influences risk management and profitability ▶ Ship operator's reputation affects the financial institution ▶ Ecological measures make ship operations safer and more efficient ▶ Success in business through ESG management
CSR and reputation management	
<ul style="list-style-type: none"> ▶ Reputation management ▶ Social responsibility ▶ Integrated ESG strategy 	<ul style="list-style-type: none"> ▶ ESG ensures minimum environmental and social standards on board ships ▶ Consideration of social issues protects against scandals ▶ Accident prevention
Legal requirements	
<ul style="list-style-type: none"> ▶ Compliance with the laws to be applied to debtors, especially environmental requirements 	<ul style="list-style-type: none"> ▶ ESG risks of associated with illegal activities

Source: Internal

Firstly, it can be seen from these results that business considerations are a major reason for integrating ESG issues into ship finance. The financial institutions surveyed and the experts rate ESG issues as important for operating efficiency as well as for project stability and risk reduction. While the financial institutions here emphasize their own profitability, the experts stress the positive impact on the ship owner's or the borrower's profitability. Further, the arguments also suggest that financial institutions consider credit risk minimization and the ship portfolio optimization this entails as especially important. In summary we can say that financial institutions expect improved profitability at various levels from integrating ESG aspects into their ship financing. It makes ship portfolio more marketable, leading consequently to a competitive advantage over other market participants. Furthermore, the financial institutions surveyed see them-

selves as having responsibility towards their investors. They argue that the lower the credit risk evaluation, the safer it is for investors to invest in a financial institution's securities. The experts, on the other hand, view things from the vessel owner's perspective. Consideration of sustainability in ship financing leads to borrowers enjoying lower ship operating costs and more business. Deployment of the vessels stabilizes, and this enables ship owners to service their loans, which ultimately benefits the financial institutions as well. The two respondent groups may have had different priorities, but they arrive at the same result: Profitability is one of the main motives given for financial institutions to integrate sustainability in ship financing, and the interdependence of the ship-owner's profitability and that of the financial institutions is an extremely important point here. They are inextricably linked and should be given the appropriate attention when preparing a financing policy.

In addition to the profitability factors described, CSR and reputation management are fundamental motives for the integration of sustainability aspects in ship financing. Among other things, financial institutions cite as a motive the integrated nature of their CSR strategies, the scope of which involves the entire company and all its business activities, which include, of course, their ship financing business. Financial institutions strive for comprehensive sustainability management in order to lower the risk of negative press and criticism from NGO's. While the financial institutions stress in the survey that it is a financial institution's sense of social responsibility that prompts consideration of sustainability issues, the experts argue instead that it is necessary for ship owners to integrate sustainability standards. According to the experts, ensuring compliance with environmental and social standards is one of the tasks of CSR management – that of the financial institution on the one hand, but especially that of its business partners. Failure to comply with these standards can have significant consequences for the ship owner's reputation, and there are legal and financial risks as well. The financial institutions that provided loans to finance a vessel may also have to deal with the consequences of this misconduct.

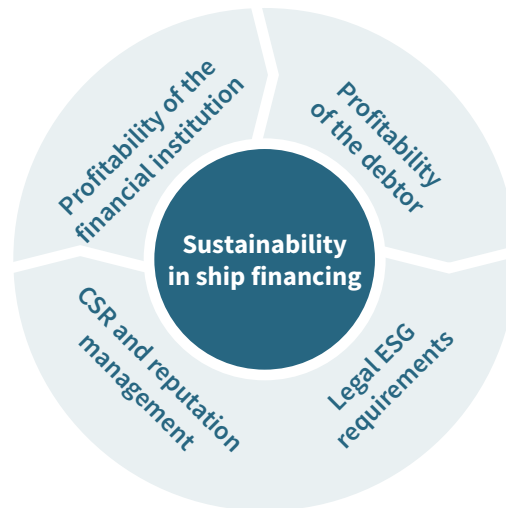
Legal requirements constitute the third category of motives identified for integrating sustainability aspects in ship financing. Financial institutions, ship owners and ship operators must all comply with numerous national and international laws. Quite apart from a damaged reputation and legal consequences, they can expect to forfeit their operating license for failing to do so.

“Many social-risks (sic!) mentioned could potentially lead to loss of lives, which will have major reputational and financial implications to the company and hence the financiers.”

Greenpeace

Both respondent groups see integrating ESG issues as reducing the risk of not complying with legal requirements. While ship owners are directly affected by the risks described, financial institutions - by making funds available to finance ships - are indirectly affected through their borrowers' legal battles. Lengthy court proceedings, fines or imprisonment not only do massive harm to the public's perception of the ship owner, the financial institution is also caught up in the controversy. Financial risks such as loan defaults are a potential further consequence for financial institutions. Failing to comply with international environmental and social standards can have legal consequences. An expert adds that other legal hazards result from activities such as illegal fishing or the transport of protected species. Both respondent groups agree that risks of this kind need to be actively managed and that this is an important reason for incorporating sustainability into ship financing.

Figure 07: Business Case for sustainability in ship financing



Source: internal

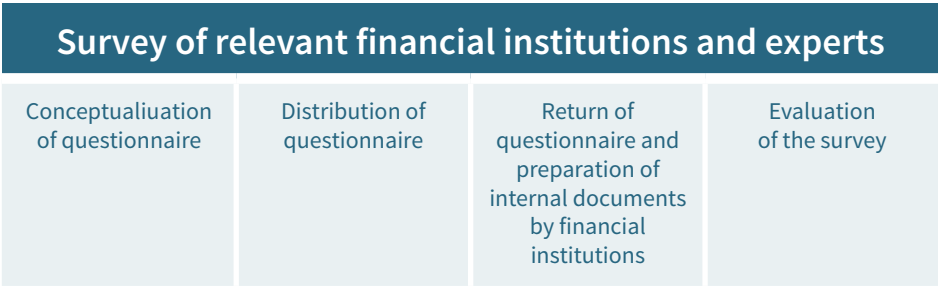
The survey has shown that sustainability in ship financing is seen as highly relevant by the financial institutions themselves and by the experts. They share the opinion that considering ESG issues in ship financing influences the overall performance of financial institutions. Surveying financial institutions and experts on the motives for integrating sustainability into the ship financing of financial institutions has shown that the motives fall into three different categories. A business case for sustainability in ship financing can thus be drawn up using the categories of profitability, CSR and reputation management, and legal requirements. imug further distinguishes here between the financial institution's profitability and that of the borrower. The categories described feature strong interdependence among the fields of action. They influence each other and cannot be considered as separate, which characterizes the challenge of incorporating ESG aspects in shipping as a dynamic and complex process. To give an example, the financial institution's profitability is not only affected by the profitability of the borrower but also by the borrower's CSR management and the legal requirements for ESG. This interdependence shows how complex the subject matter is and how important it is to identify the driving forces. Identifying the ESG risks as the first step is crucial to effectively integrating sustainability issues into ship financing.

5.2 Identification and relevance of ESG risks in the ship financing sector

This section considers the individual environmental, social and governance risks that may arise in ship financing in terms of their relevance, using the questionnaire results to evaluate the expertise of financial institutions and experts. Questions 3 to 5 in the questionnaire are of particular interest here (Annex 1). As described in Section 2, imug conceptualized a questionnaire containing an advance list of certain ESG risks. Three environmental categories with 14 criteria, four social categories with 19 criteria and five categories in governance with a total of 14 criteria were submitted for rating. In Question 3, the participating financial institutions and experts evaluated whether the ESG risk identified is relevant for shipping. In Question 4 respondents were asked to weight these risks in terms of relevance. The point of departure for the weighting was the extent to which the financial institution / expert thought a criterion or risk requires consideration in ship financing. The criteria had to be rated on a scale of 1 to 4 (1 = little relevance, 4 =

very relevant). Finally, Question 5 aimed to ascertain the extent to which financial institutions can effectively factor in certain ESG risks, thereby influencing the borrower.

Figure 08: Design of the survey process



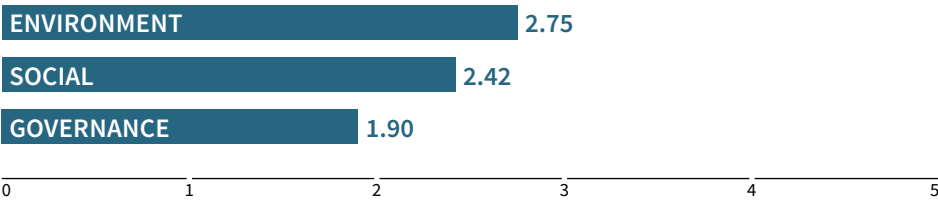
Source: internal

The following shows how experts and financial institutions each evaluate the environmental, social and governance domains. We have highlighted the categories and criteria that particularly stand out in their evaluation and also incorporated important results stemming from Question 5 at the appropriate points.

The overall score for all three domains (see the diagrams on the next page) shows that, on average, the experts rate the relevance of all the risk domains higher than the financial institutions do. It should first be noted that, on average, the financial institutions respondent group considers the risks in the environment domain as the most significant, while the experts group attributed the highest risk to the social domain. The largest deviations between the overall assessments of the two respondent groups are in the domain of governance. The experts rated governance risks on average 1.36 points higher and consequently more relevant than the financial institutions did. With this result, we must consider the fact that there are governance risks on which some experts - due perhaps to a lack of background knowledge - made no comment. This data shortfall reduces the total amount of expert responses, resulting in highly rated individual risks having a correspondingly stronger effect on the final score of 3.26. The same applies to the results in the social domain.

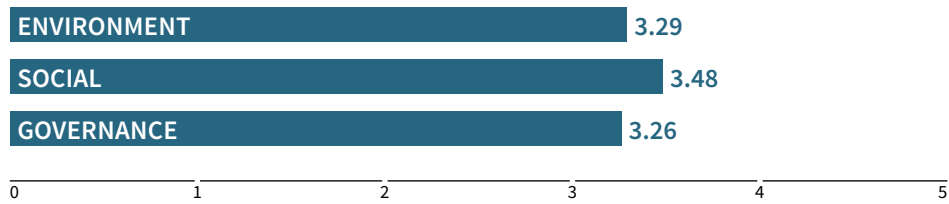
It can be concluded from the analysis that all the ESG domains, on average, are rated higher by the experts than by the financial institutions. Within the experts group, social aspects are considered more relevant while for the financial institutions the environmental domain is most important.

Survey results: The financial institutions' valuation of the ESG-areas' relevance (n = Ø 5.73)



Source: internal

Survey results: The experts' valuation of the ESG-areas' relevance (n = Ø 6.89)



Source: internal

Looking in detail at the individual evaluations within each ESG domain reveals not only some overlap but also significant differences between the estimates made by the two respondent groups.

In the environmental area, there is a consensus between the two groups with respect to the relevance of the risks it contains. On average, the financial institutions attributed the highest relevance to **CO₂ emissions** (3.33)⁶⁴ and the **environmental pollution by dismantling (beaching method)** (3.30). The experts also saw **CO₂ emissions** (3.88) as a very significant environmental risk while rating the relevance of **air pollution and climate damage** (3.86) as second highest. In terms of overall average, **CO₂ emissions** (3.60) are accordingly identified as the environmental risk which both financial institutions and experts regard as the most important environmental risk element in the shipping industry.

Survey results: CO₂ emissions



Source: internal

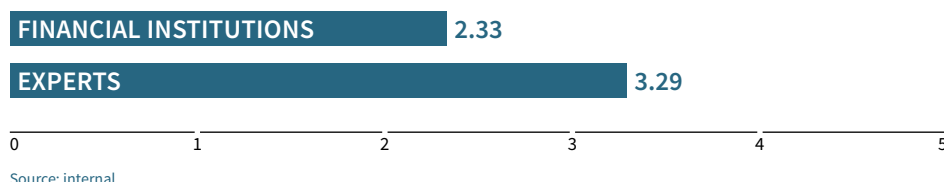
The environmental risk with the lowest overall result is **environmental pollution by harbour and dock yard** (2.44). This is mainly due to the financial institutions' assessment which, with an average rating of 2.00 points, assigned little relevance to the **environmental pollution by harbour and dock yard** (2.00). By contrast, the experts consider **shipping noise as a stress factor to marine life** (2.86) to be less relevant than the other environmental issues. (The experts' rating of **environmental pollution by harbour and dock yard** was 2.88 points). The rating given to the criterion of **toxic substances in antifouling paints** (2.81) constituted the biggest difference between the responses provided by the financial institutions and the experts. The financial institutions rated the relevance of this criterion at 2.33 on average. One third of financial institutions do not consider **toxic substances in antifouling paints** (2.33) as a risk. The experts' statements are more centrally placed by contrast with a mean value of 3.29. While the majority of financial institutions only grant the ESG aspect moderate relevance, there are some financial institutions that address this criterion in their ship financing policy.

"This criterion is part of our ship assessment"

NORD/LB

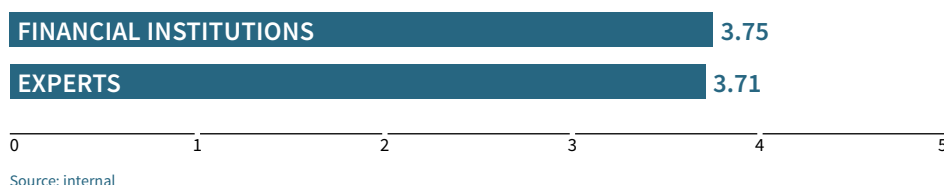
⁶⁴ Average of all those surveyed (financial institutions), unless otherwise specified.

Survey results: Toxic substances in antifouling paints



Looking at the survey results in the social sector, a much stronger discrepancy is evident between the statements of the two respondent groups than was the case for environmental criteria. The deviations in the results vary here in some cases between 0.83 and 1.80 points. There is also the broadest consensus between the two groups, however, on the criteria described in the course of “other social problem areas” **Working conditions at facilities for dismantling (e. g. human rights, ILO, etc.)** (3.73) with the highest average survey score of 3.73 were seen as a very obvious challenge for the shipping industry.

Survey results: Working conditions at facilities for dismantling in developing countries and emerging markets (e. g. Human Rights, ILO)



This criterion is also one of only three that, on average, were rated marginally higher by the financial institutions than by the experts. **Living conditions of the local population in developing countries, which are affected by shipping and/or dismantling** (3.31) was rated by the financial institutions at 3.33 and only slightly lower by the experts at 3.29. The strongest deviation is in the social domain for the criterion of **illegal fishing and industrial fishing endanger local traditional fishing** (3.19), which financial institutions consider as most relevant (3.38) to the financing of shipping. The experts' scores (3.00) are here on average 0.38 of a point lower than those of financial institutions.

“Financier should not finance construction of new fishing vessel planning to enter fisheries where no sufficient capacity management plan is in place for the target fisheries [...], or where, d. Verf.] it is confirmed that there is overcapacity in the target fisheries.”

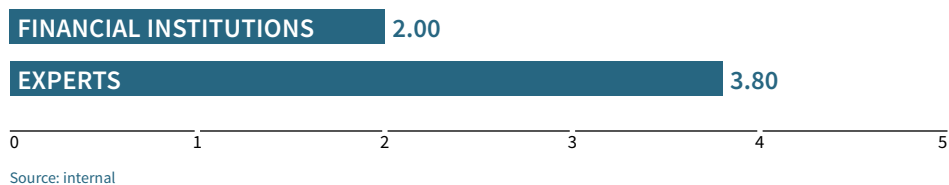
Greenpeace

The experts' ratings on relevance are much higher than those of the financial institutions for the remaining criteria in the social domain. An example is the case of **accidents caused by technical defects centred at flags of convenience because of [...]**⁶⁵ (2.90). With an average of 2.00, the financial institutions see far less relevance here than the experts, whose average is 3.80. This indicates that the experts see a particular need for banks involved in shipping finance to consider this issue.

⁶⁵ See Section 4.3

It should be noted here, however, that this assessment does not reflect basic consensus among the experts. 30 percent of them did not regard some individual criteria listed under **accidents caused by technical defects: centred at flags of convenience because of [...] 66** (2.90) such as [...] **old/low quality ships and ship technology (3.00)** or a **lack of private control because there is no recognized classification society (e. g. IACS) certified or insurer (e. g. P&I Club) insured** (3.30) as ESG risks at all. Although the latter criterion is regarded by all financial institutions as an ESG risk, they do not see it as particularly relevant (2.33 points).

Survey results: Accidents caused by technical defects mainly centred at FoCs



There are also marked differences in the results of the two respondent groups on the **missing regulation of board crew number** (2.91), **long working hours without corresponding breaks** (3.08), **unfair wages** (2.69), **poor living conditions on board (lack of food and drinking water)** (2.92) and in all the criteria listed under **health and safety in the workplace: accidents caused by human error centred at flags of convenience because of insufficient training for the crew** (2.78). Most of these aspects were not rated as ESG risks by 43 percent of the financial institutions. The remaining financial institutions regarded these criteria as of little relevance. The highest average rating of 2.33 was given to the criterion of **poor living conditions on board (lack of food and drinking water)**. On average, the experts assign much higher relevance to this group of criteria. Consequently, most of the criteria were rated up to 1.75 points higher by the experts than by the financial institutions. However, just as with the banks, a certain proportion of experts have the opposite impression of this area. In fact, the experts rated up to 20 percent of the criteria as irrelevant. This is particularly evident with issues in the field of **occupational health and safety: accidents caused by “human error” associated with flags of convenience due to [...] 67** (2.78), which were not regarded as ESG risks by 22 percent of the experts. The social risk with the lowest overall rating is **health and safety in the workplace: accidents caused by human error centred at flags of convenience because of insufficient training for the crew** (2.42). The financial institutions awarded this risk an average score of 2.00. By contrast, the experts, on average, rate this risk at 2.83.

The last area to be rated by the experts and financial institutions was the governance domain. As demonstrated by the overview of overall results at the beginning of this section, the area of governance and its risks was regarded as being least relevant compared to the environmental and social criteria. The criterion with the highest average is **registration of old/low quality ships** (3.07). Although the experts rated the relevance of the criterion at an average of 3.75 points, the financial institutions, however, only see a relevance of 2.40. Financial institutions are of the opinion that the existing funding policies already contain clearly established targets. They therefore regard this criterion to be only moderately relevant as a governance risk.

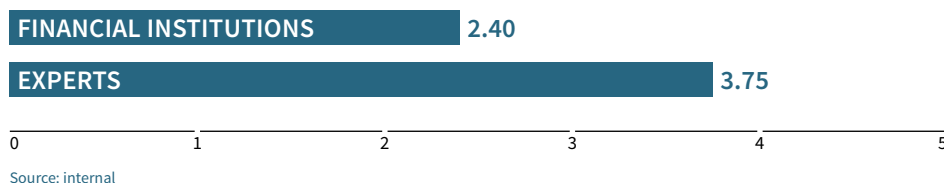
⁶⁶ See Section 4.3

⁶⁷ [...] communication problems of the crew (language barriers), [...] insufficient training of the crew, [...] lack of training for the crew, [...] excessive workload for the crew, [...] lack of monitoring of alcohol and drug abuse and [...] lack of attention to the safety management system

“Since only vessels which have been inspected by the IACS are financed, we see minimal ESG risk.”

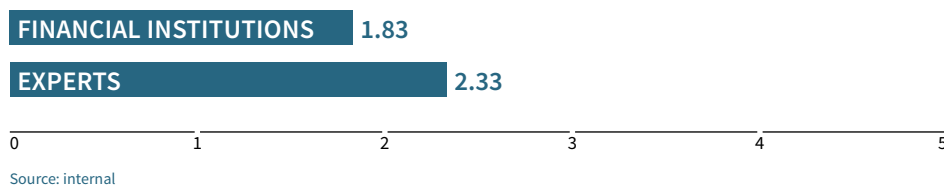
NORD/LB

Survey results: Registration of old/low-quality ships



The criteria of **illegal cargo and embargoes: problems centred at flags of convenience** (2.50), **piracy and terrorism** (2.33) and **support by state security forces (marine) by flags of convenience is questionable** (2.17) received the lowest relevance scores in the governance domain. The potential risk of **piracy and terrorism** (2.33) is seen as relatively low. The assessment of the financial institutions (1.83) is significantly below that of the experts (2.83). In the governance domain, the general impression is that the risks are seen as significantly more relevant by the experts than by the financial institutions. Compared to the other sectors, however, it is interesting to note that financial institutions regarded all the criteria focussing on governance as relevant. The criterion of **support by state security forces (marine) by flags of convenience is questionable** (2.17) was the sole exception. 17 percent of financial institutions surveyed consider this issue as irrelevant from an ESG perspective. The experts, however, despite their otherwise very high risk assessment, classified a number of governance criteria as irrelevant, with up to 20 percent of the experts regarding most of the ESG aspects in the governance sector as unimportant for the shipping industry.

Survey results: Potential risk of piracy and terrorism



Taken together, the survey results define a comprehensive range of ESG criteria which, in the opinions of financial institutions and experts alike, should receive various degrees of consideration when financing the shipping sector. Each of the sustainability risks in the survey was classified by more than half of all respondents as relevant, which also means, however, that financial institutions have a number of things to do if they want to promote sustainable shipping on all ESG levels. The financial institutions have already realized that there is a business case for sustainability in ship financing, as shown in Section 5.1, which can result in economic benefits.

5.3 Sustainability criteria in the ship financing business

In offering to finance ships, a financial institution also faces a potential threat in the form of the ESG risks that business of this kind can generate. In order to minimize these risks or avoid them altogether, financial institutions should equip themselves with the appropriate processes for managing sustainability in ship financing. These processes should result from a policy that is open to the public and mandatory. The policy should also be permanently and demonstrably integrated into the operations of the financial institution. Moreover, the bank must report regularly and in a transparent manner not only on its progress, but also on controversial incidents connected with this issue. Depending on the business model and the financial institution's activities, the criteria covered in the policy and the related management and reporting systems could include the following:

- ▶ Senior responsibility
- ▶ Policy is publicly available
- ▶ Explanation of the policy framework, e. g. reference to international targets, organizations, conventions
- ▶ Active advocacy of the necessary public policy initiatives to the potential sustainability risks of the shipping sector
- ▶ Explanation of coverage by the policy: which part of the bank, which sectors of the shipping industry and which type of vessels
- ▶ Incentives for sustainability standards: preferred financing of ships with sustainability certificates
- ▶ Promotion of efficient technologies for ship building and reconstruction of existing ships
- ▶ Requirement of responsible dealings with the issue of ballast water
- ▶ Requirement of responsible dealings with the issue of fishing operations
- ▶ Requirement of a responsible ship recycling process
- ▶ Requirements for the compliance with social standards e. g. fair working conditions for seafarers, health and safety standards for seafarers and deckhands or profound education and further trainings for seafarers
- ▶ Regulations for financing vessels in relation to their age
- ▶ No financing of vessels under black-listed flags
- ▶ Requirement that the vessel is classified by a member of the IACS to ensure high safety standards and that the vessel is insured by one of the P&I Clubs⁶⁸
- ▶ Description of processes and responsibilities for implementing the policy
- ▶ Communication of the policy to employees
- ▶ Description of regular review processes and revision of contents
- ▶ System for continuous stakeholder dialogue
- ▶ Assessment and quantified disclosure of financial, regulatory or physical risks and opportunities faced by the financial institution as a result of environmental and social impacts of financed vessel
- ▶ Evidence of a due diligence process and monitoring of the client's compliance to the policy and international standards or an engagement with clients
- ▶ Disclosure of the status of implementation of the shipping policy and/or reporting on shipping finance data under the policy
- ▶ Disclosure of social and environmental performance of financial institution's shipping finance portfolio
- ▶ Other sound contents that withstand a case-by-case assessment by imug

⁶⁸ Protection & Indemnity Club

5.4 Evaluation of previous sustainability efforts in ship financing

The previous chapters and in particular the survey conducted with financial institutions and experts clearly show that integrating sustainability aspects into ship finance is a topic of relevance for financial institutions. In order to integrate sustainability aspects into the provision of credit, financial institutions can stipulate in their policies which sustainability issues borrowers must comply with when building a vessel or operating their fleets, and the effects that sustainable or non-sustainable conduct will have on a loan or the overall credit relationship. This requires an appropriate management and reporting system in order to implement the policy effectively and comprehensively.

Sustainability rating agencies assessing financial institutions as part of their ESG research should thus also consider the integration of ESG aspects in ship financing, and imug has identified 56 financial institutions active in ship finance which are of particular interest (see Section 2). These institutions were each asked about the issue in a 2014 survey, and imug is currently in the process of rating them. Now, a year after mailing the questionnaire, the recent sustainability initiatives of financial institutions are being assessed according to the “Responsible Ship Financing” methodology developed by imug. The period between the survey and this assessment has allowed all these financial institutions the opportunity to familiarize themselves with ESG risks in the shipping industry and to question or improve any measures that they may already have in place. Financial institutions who at the time of the questionnaire were not considering sustainability issues in their ship finance have thus had the chance to develop policies and/or management and reporting systems.

The analysis in Section 5.2 has already shown that financial institutions and experts differ on the individual relevance of certain sustainability issues for the shipping sector. Our ratings are based on the “Responsible Ship Financing” methodology, which was developed according to objective criteria identified in interviews with experts and thorough surveying financial institutions and experts. With this methodology, imug wants to make financial institutions aware of the criteria lacking in their policies, and in so doing bring financial institutions closer to integrating important ESG criteria into their policies, management systems and reporting systems.

The “Responsible Ship Financing” methodology comprises four criteria clusters: **Policy & Governance, Policy Details, Management System** and **Reporting**. The methodology is based on the results of the sustainability-related topics identified in ship financing. Derived from the topics discussed in Sections 4 and 5.2, the criteria set was presented in Section 5.3. imug used research, the interviews with experts and the survey of financial institutions and experts to determine the weighting of each of the criteria, ensuring that all the major stakeholders and issues are considered. The better a financial institution performs on a set of criteria, the better it rates in the four criteria clusters. Five different overall rating levels can be achieved (listed from bad to good): no evidence, limited, intermediate, good and advanced.

The Policy & Governance criteria cluster queries the basic set-up of a policy: its adoption by the board of directors and its public availability. The Policy Details criteria cluster examines the content depth and range of ESG aspects considered by financial institutions. The Management System criteria cluster examines whether these institutions are employing effective measures in their business activities to implement the sustainability issues identified. The Reporting criteria cluster checks whether an institution has a transparent reporting system in place and if key performance indicators on the environmental and social aspects of the ship-financing business are available.

Figure 09: Design of the evaluation process

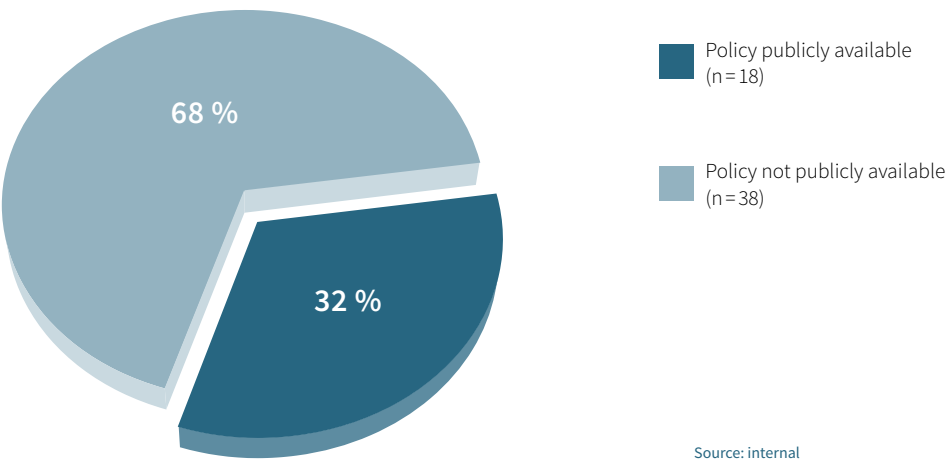


Source: internal

imug used all the publicly available information on the financial institutions - annual and sustainability reports, policies, presentations and website content - as the initial basis for the assessment. The financial institutions approached were also asked if they would like to provide imug with documentation that is not publicly available. The following analysis classifies the financial institutions’ scores and compares them according to the four criteria clusters of the “Responsible Ship Financing” methodology - Policy & Governance, Policy Details, Management System and Reporting - with the aim of providing a current status overview of the consideration of sustainability indicators in ship financing. Further, we aim to show in which criteria the industry leader and the industry average differ and where the worst in the industry differs from the industry average. Finally, the sustainability initiative assessments are used to identify best practice examples which are presented in detail in Section 5.5.

38 of the 56 financial institutions surveyed do not have a publicly available policy on integrating sustainability issues into ship financing. Another 14 have policies that are accessible to the public. The remaining four institutions made policies and other documents available to imug during the survey. In total then, 32 percent of the financial institutions we rated have established rules that integrate sustainability criteria into their ship financing. The vast majority of financial institutions - 68 per cent - are unable to demonstrate that sustainability issues play a role in ship financing and consequently received the lowest rating: “no evidence”.

Figure 10:
Public availability of the financial institutions’ ship financing policies



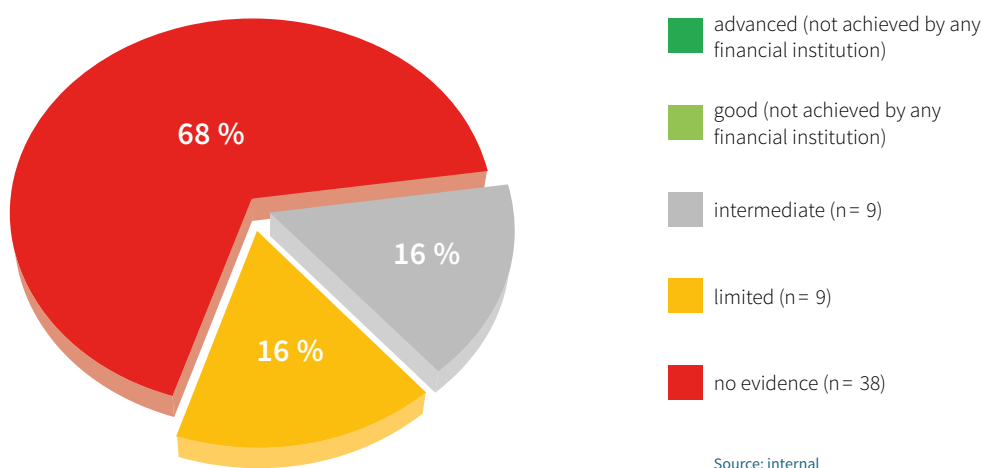
Source: internal

Although 32 percent of the financial institutions surveyed have a policy in place, this cannot automatically be taken as evidence that sustainability issues are being “adequately” considered in ship finance. The ESG risks identified as relevant need to have been integrated into the policy to a satisfactory depth of content, and implemented using a

suitable management and reporting system. In imug's study, none of the financial institutions was able to achieve either the second highest rating of "good" or the highest rating of "advanced".

These results show that to date no financial institution has developed a comprehensive policy for sustainability in ship financing. Particularly in order to achieve the two highest rating levels, it is important that a financial institution can provide credible evidence that it promotes sustainability aspects in the maritime sector. The institution must not only try to meet applicable sustainability standards in the industry, it must also actively support the development of these standards. This includes transparent reporting on its own efforts in this regard. Of the 18 financial institutions that have developed a policy, nine received the average rating of "intermediate". The remaining nine received the second-lowest rating of "limited". Despite these institutions having addressed sustainability in ship financing, their efforts so far have met few of the defined criteria. In order to receive a better rating, these financial institutions would need a more comprehensive policy and better management and reporting systems. The following figure shows the financial institutions' results classified according to the different rating levels.

Figure 11:
Results of the analysis of the financial institutions' policies and management and reporting systems (as of December 2015)



Even though, on average, the efforts of financial institutions in terms of implementing ESG aspects in ship financing and shipping have been relatively small, some institutions are excelling with their sustainability-oriented finance policies. As mentioned in the previous paragraph, nine financial institutions were rated as "intermediate", from among which we identified best practice examples for individual criteria from all four criteria clusters. On average, the financial institutions' ratings reflect the results of the survey done with them, and overall it is clear that there is significant potential for improvement across the whole industry.

The following contains an overview of the assessment results of the criteria clusters and the criteria considered in each. First, we will evaluate the Policy & Governance criteria cluster and then set out the results under Policy Details. Finally, we will analyze the management system and reporting criteria, at which point imug will also identify the different criteria met by each financial institution that received an overall rating of "intermediate" or "limited".

The board's support for and adoption of the policy and the policy's public availability are rated in the criteria cluster of **Policy & Governance**. As mentioned earlier, some po-

licies are not publicly accessible. If a copy of the policy is provided to anyone requesting it, however, imug considers this indicator fulfilled. A financial institution had to submit evidence of both the fulfilment of this criterion and the board's adoption of the policy in order to be given an overall assessment of "intermediate". By contrast, of those financial institutions rated as "limited", only four were able to do so. The policies of all 18 financial institutions rated at "limited" and "intermediate" are either publicly accessible or available on request.

SENIOR RESPONSIBILITY



POLICY IS PUBLICLY AVAILABLE



0 2 4 6 8 10 12 14 16 18

- Financial institutions that do not fulfill the criterion
- Fulfilled: financial institutions with the result "limited"
- Fulfilled: financial institutions with the result "intermediate"

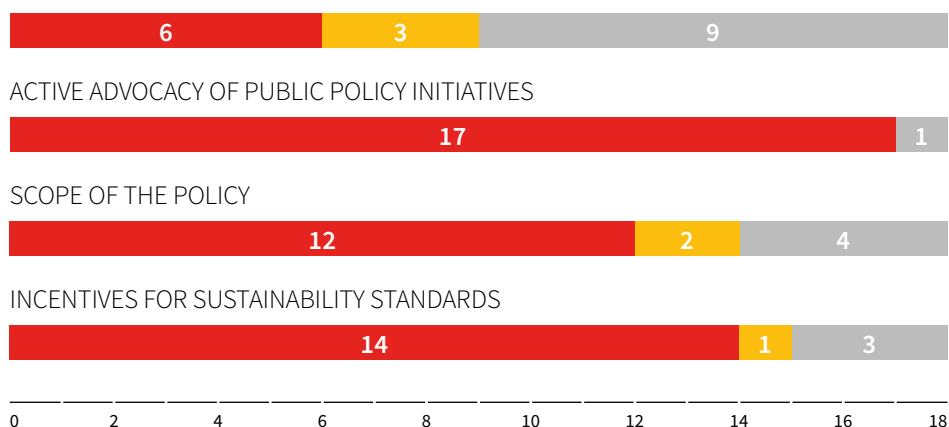
Source: internal

The **Policy Details** criteria cluster contains the largest number of criteria to be evaluated, some of which include the policy's framework and scope, favourable terms for fulfilment of sustainability standards, consideration of environmental and social standards and criteria relating to maritime safety. Some of the topics discussed include regulations that relate to a vessel's age, the requirement that a vessel be classified by a classification society belonging to the IACS or insurance that follows the rules of P & I Clubs. Although not exhaustive, this list gives an indication of the range of sustainability indicators that financing policies are expected to consider in ship financing.

13 of the 18 financial institutions rated at "intermediate" or "limited" cited e. g. the political environment and/or regulations their clients are required to observe in the shipping sector as the motives for integrating sustainability aspects in their ship financing (policy framework), so a basis for designing a policy is available. Only one of the financial institutions has membership in or is promoting an initiative that deals with sustainability issues in the shipping industry. The policy scope criterion evaluated both the corporate level and the borrower group level, and the vessel categories being financed. The scope or coverage of business activities that the policy covers is fundamental to the impact a policy will have on a financial institution's ship financing practices. This is why financial institutions have to define a comprehensive range in each of the three levels in order to rate well. Performing poorly on this criterion prevented some financial institutions from receiving an overall rating of "intermediate" or "good". The efforts of the Société Générale CIB, NORD / LB and Bremer Landesbank, however, are worthy of note. Only four of the 18 financial institutions promote the preferred funding of vessels with certifications for sustainability standards (e. g. Blue Angel, Lloyd's Environmental Protection Notation or Energy Efficiency Design Index) or their own internally defined sustainability standards. Only policies that satisfy this requirement can attain the best evaluation level of "advanced"; this criterion illustrates whether a financial institution is actively contributing to an increase in the proportion of sustainable shipping.

The indicators mentioned most frequently in the policies are the responsible handling of ship emissions and ballast water and the responsible recycling of ships. 60 percent of the 18 financial institutions with a policy consider these criteria to varying degrees. The consideration of responsible fishing practices is the only environmental issue to be

EXPLANATION OF THE POLICY FRAMEWORK



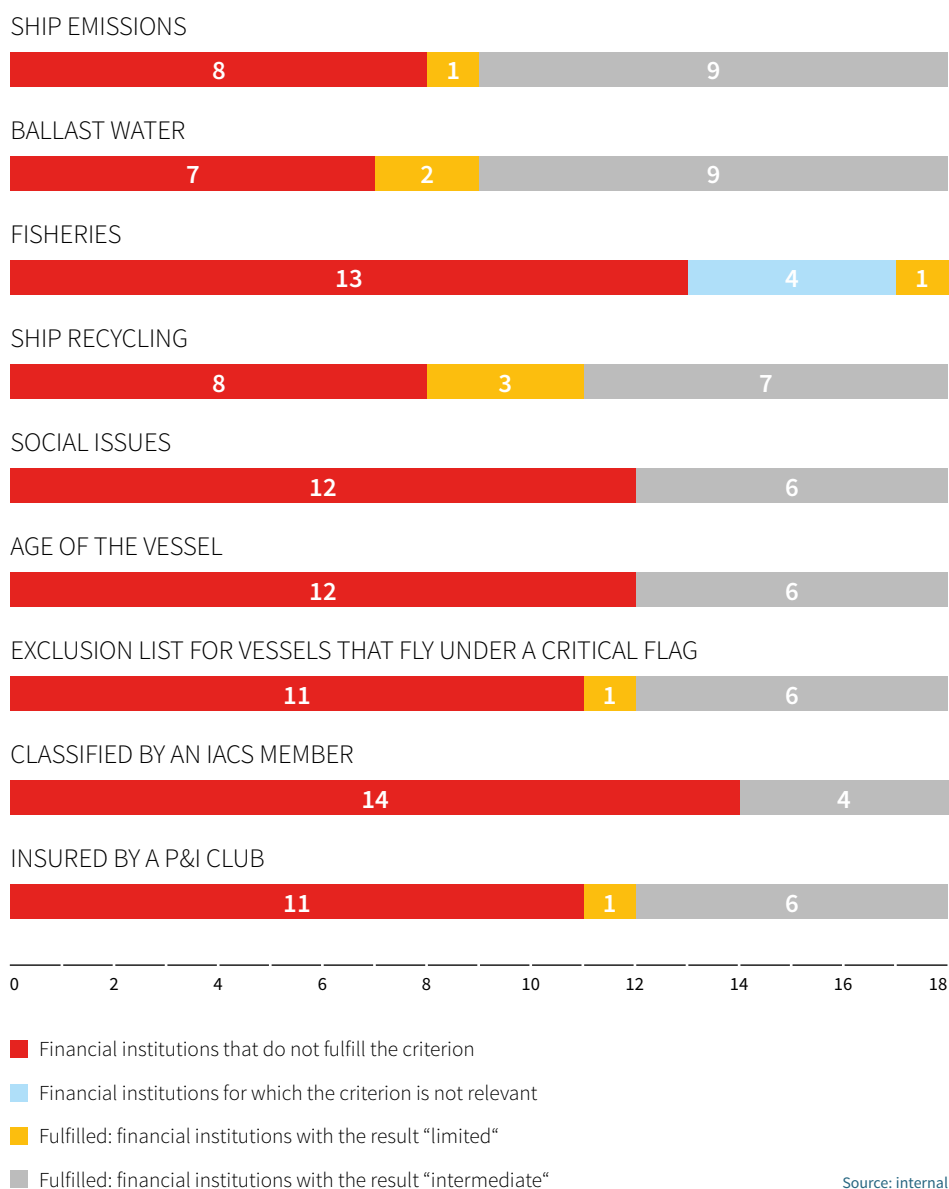
- Financial institutions that do not fulfill the criterion
- Fulfilled: financial institutions with the result "limited"
- Fulfilled: financial institutions with the result "intermediate"

Source: internal

mentioned in the policy of only one institution. Six of the 18 institutions promote compliance with social standards. The policies of fewer than half of the financial institutions require higher standards for working conditions and safety on board. Similar results were achieved from rating the criteria of ship age, exclusion list for vessels operating under black-listed flags, mandatory classification of the ship by a classification society belonging to the IACS and insurance complying with the P & I Clubs' regulations. Analysis of the Policy Details criteria cluster highlights the differences between the financial institutions rated as "limited" and those rated as "intermediate". The policies of the financial institutions rated as "intermediate" cover significantly more ESG issues. The only criterion not met by any financial institution is fishing. The group of institutions rated at "limited" on the other hand only fulfilled a few of the ESG criteria.

The results in the Policy Details criteria cluster reflect what analysis of the survey has already revealed. It became clear during the survey that financial institutions see environmental issues as very relevant and consider social and governance issues for ship financing as less important. Rating the policies of these institutions with regard to sustainability indicators in ship financing arrives at the same result. While environmental factors (except fishing) are considered by more than 50 percent of financial institutions in their policies on ship financing, only a third are integrating social and governance aspects. It is exactly this diverse consideration of ESG indicators that differentiates the financial institutions rated at "intermediate" from those rated as "limited". Social standards clearly referring to the shipping sector are only integrated in the policies of the group of banks rated as "intermediate", and this same group is also increasingly including governance criteria in their policies. It is in these same points that the industry-leaders differ significantly from the average. These results show financial institutions rated as "limited" that they should cover a wider variety of ESG issues in their policies and make more reference to internationally recognized standards with respect to the shipping sector. The same also applies to those institutions rated as "intermediate" that want to improve their policies. In order to obtain an overall rating of "good" or "advanced", a policy must contain all the environmental, social and governance indicators mentioned.

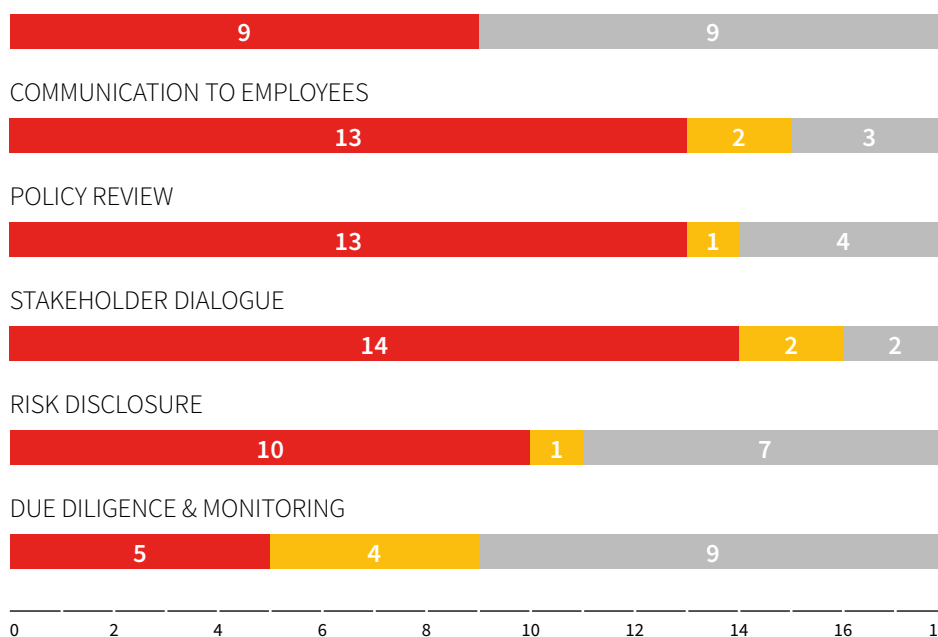
The criteria in the **Management System** assessment cluster analyze the extent to which the financial institution has introduced appropriate tools for actually implementing the content covered in the Policy Details section. The management system is thus the foundation from which a policy can be implemented effectively within the financial institution. Criteria rated here include the publication of the processes and responsibilities used



to implement the policy, the communication of the policy to employees, regular policy reviews, holding a systematic dialogue with stakeholders, assessment and quantified disclosure of risks and opportunities, and due diligence and monitoring processes. Having a good management system in place shows how serious a financial institution is about implementing its policy. Although all nine financial institutions rated as "intermediate" have published a management plan, none of the financial institutions rated as "limited" has. It is also worth mentioning that 13 financial institutions - nine rated as "intermediate" and four as "limited" - indicate that they have a due diligence or monitoring process. Moreover, seven financial institutions rated as "intermediate" describe how they assess risks and opportunities that arise due to the influence of environmental and social factors on vessels they finance. One financial institution rated as "limited" also fulfils this criterion. The results show, however, that there is significant potential for improvement in terms of the criteria clusters of communicating policy to employees, regular policy reviews and holding systematic stakeholder dialogues. In the Management System criteria cluster, all 18 financial institutions have to improve considerably overall in order to achieve a higher rating in the future.

The last criteria cluster to be evaluated is **Reporting**, which comprises the disclosure by financial institutions of their policy's current implementation status and disclosure of the environmental and social performance of the finance portfolio. Reporting must be public and thus transparent over the whole criteria cluster. The procedure should also

PROCESSES FOR IMPLEMENTING THE POLICY

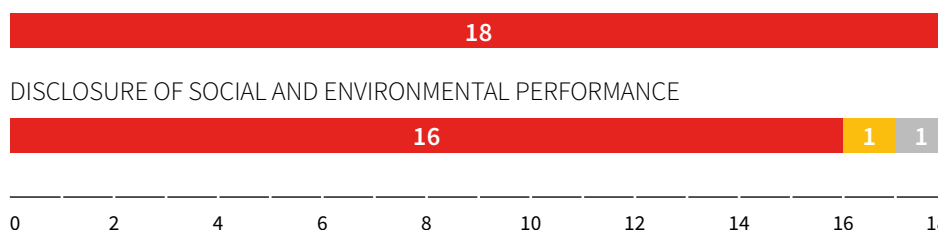


- Financial institutions that do not fulfill the criterion
- Fulfilled: financial institutions with the result "limited"
- Fulfilled: financial institutions with the result "intermediate"

Source: internal

be open to civil review and support competition within the industry. The criteria are not considered met if reports are only available internally. None of the 18 financial institutions publicly reports the current implementation status of its policy. Two institutions meet the criterion of environmental and social performance of the finance portfolio. Some financial institutions do indeed have systems in place that measure environmental and social performance, but they are not disclosed to the public and so cannot be counted. The next section uses best practice examples to look more closely at the different approaches to measuring performance.

DISCLOSURE OF THE STATUS OF IMPLEMENTATION



- Financial institutions that do not fulfill the criterion
- Fulfilled: financial institutions with the result "limited"
- Fulfilled: financial institutions with the result "intermediate"

Source: internal

After evaluating all of the methodology's criteria clusters, it is evident that there is not yet satisfactory consideration of sustainability issues in ship financing. As mentioned at the beginning of the section, most of the 56 financial institutions (38 financial institutions) cannot fulfil the criteria and were rated with "no evidence". The remaining 18 financial institutions, despite at least concerning themselves with sustainability aspects in ship financing, have also not yet done enough to be able to achieve a satisfactory overall result. As such, nine financial institutions are rated as "intermediate" and nine other financial institutions are rated as "limited".

The nine best financial institutions are (in alphabetical order):

- ▶ ABN AMRO Bank N.V.
- ▶ Bremer Landesbank Kreditanstalt Oldenburg-Girozentrale
- ▶ Crédit Agricole CIB
- ▶ European Bank for Reconstruction and Development
- ▶ European Investment Bank
- ▶ NIBC Bank N.V.
- ▶ NORD/LB Norddeutsche Landesbank Girozentrale
- ▶ Skandinaviska Enskilda Banken AB
- ▶ Société Générale CIB

Although on the whole the overall performance of the financial institutions was average, a positive aspect is that more than half of the 18 financial institutions have a management plan and/or due diligence and monitoring processes for sustainability in ship financing. However, there is still some potential for improvement in many other criteria. The consideration of environmental factors is a positive point because 60 percent of the financial institutions are incorporating environmental issues in their policies. Looking at social and governance factors, however, it is obvious that they are only receiving limited consideration. In the future, financial institutions must also focus more on dialogue with stakeholders such as NGOs and trade associations, or on cooperation with sustainability initiatives such as the Sustainable Shipping Initiative. Interaction with stakeholders and sustainability initiatives allow knowledge transfer, which is particularly important for financial institutions facing challenges like sustainability in the shipping sector. The knowledge gained by the exchange can assist financial institutions in improving many of the critical areas.

At the study's conclusion the largest deficit nonetheless remains: that nearly 70 percent of the financial institutions rated do consider any sustainability issues at all in ship financing. Sustainable ship finance is not yet sufficiently well established in the financial industry. The industry itself and all the stakeholders in the shipping industry still have a lot of work to do before sustainability is comprehensively embedded in the shipping sector. Some financial institutions are on the right track and, with a steady increase in commitment, have the potential to become important drivers of more sustainable shipping.

When classifying the results, it must be remembered that this study refers exclusively to the assessment of policies, management and reporting systems. There has been no consideration of controversial incidents in the maritime sector involving financial institutions. However, a holistic analysis is impossible without comprehensive research of controversial issues in business activities and business practices because only then can investors and other stakeholders see the complete picture of financial institutions' sustainability performances in one area. Researching controversial issues shows how well a financial institution complies with its own sustainability policy and thus how committed it really is to sustainability issues in ship financing, and/or whether an institution's management systems are effectively enforced. Policies and management systems, however, must always be considered separately from controversy, and when researched they are allocated to various sensitive subjects such as pollution or the violation of human rights. The results of rating the policies and management and reporting systems show that for financial institutions, the integration of sustainability aspects into the ship financing business is still in its infancy. Institutions first have to be made more aware of the issue so that it receives more comprehensive consideration in the existing policies, management and reporting systems. With this study, imug has opted against controversy research and is focusing instead on the current implementation status of integrating sustainability aspects into ship financing.

The following controversial issue involving financial institutions in the shipping industry serves to exemplify the risks to a financial institution's business activities of failing to take sustainability aspects in ship financing adequately into account. The results of surveying financial institutions and experts given in Section 5.2 have already shown that fishing is a relevant issue in the consideration of sustainability aspects in ship finance. Only one of the 18 financial institutions currently has a policy providing for ESG risks arising from fishing activities. In 2014, the Deutsche Bank prepared the IPO worth over 150 million US-Dollar of the fishing company China Tuna Industry Group (CTIG), which itself has a fleet of 24 fishing vessels (Hongqiao: 2014). The preliminary prospectus contained outdated information on an already over-fished species, the big-eye tuna, and the company's business plan did not allow for the regulated fishing quotas. This led to the Chinese Ministry of Fisheries claiming that investors were misled (Greenpeace, 2: 2014) and, as a result of the negative reports, CTIG cancelled its planned IPO (Business Wire: 2014).

5.5 Best practice examples

As shown in the previous chapter, none of the financial institutions meets the requirements for rating its policies and sustainability measures in ship finance as “good” or “advanced”. It is nonetheless gratifying that the efforts of some financial institutions in connection with certain criteria can be highlighted as examples of best practice, a selection of which will be described in this chapter. The examples are taken from the criteria clusters Policy Details, Management System and Reporting. The financial institutions whose policies imug received in confidence are referenced below anonymously.

Firstly, for the **Policy Details** criteria cluster, best practice examples are mentioned from the criteria of policy context, membership in or promotion of an initiative that deals with sustainability issues in the shipping industry, policy scope and preferred financing of ships certified according to sustainability criteria. Following this there is a discussion of best practice examples from the criteria clusters on environmental, social and governance issues.

Financial institutions that have demonstrated a particularly good policy framework on sustainability issues in ship financing include, e. g. SEB and Crédit Agricole CIB. These two financial institutions make specific reference in their ship financing policies to the borrower's compliance with international standards and conventions such as: Safety of Life at Sea (SOLAS), ILO “Maritime Labour Convention” (MLC) or the International Convention for the Prevention of Pollution from Ships (MARPOL). Only one financial institution was able to meet the criterion of membership in or promotion of an initiative that deals with sustainability issues in the shipping industry. ABN AMRO is a member of the Sustainable Shipping Initiative and by actively participating in the development of standards in ship financing and the steady reduction of environmental and social risks in shipping, this financial institution is demonstrating that it promotes the integration of sustainability in ship financing.

There are three sub-criteria in the policy scope criterion to assess: the policy's application at the corporate level, the policy's application with regard to borrower target groups, i.e. customers such as shipping companies, and a third area of application that describes which types of ships the policy applies to. The definitions of the three areas of application are first assessed separately and then combined to form an overall assessment of the policy scope criterion. In this criterion, Crédit Agricole CIB can boast one of the most comprehensive policies. The policy applies to “all loans and investments and more generally to all Crédit Agricole CIB[...]’s operations in connection with maritime industry” (Crédit Agricole: 2013, p. 1). It also describes exactly which ship financing activities the policy requirements apply to, e. g. the construction or repair of merchant ships,

and to which types of ships it does not apply, e. g. naval vessels or boats used for fishing.

Four of the 18 financial institutions maintain in their policies that they prefer to finance ships certified with regard to sustainability issues, or offer assistance on how to obtain funding of this kind. Examples of certificates include the Blue Angel, the Green Award certificate, Lloyds Environmental Protection Notation, GL Excellence (5 star) and also a rating of the ship portfolio according to the Energy Efficiency Design Index (EEDI). The four financial institutions that require a certification with regard to sustainability aspects are ABN AMRO, Crédit Agricole CIB, Société Générale CIB and KfW IPEX-Bank. In its 2014 annual report, KfW IPEX-Bank claims that it can “incorporate ... [the EEDI]... as an additional criterion in their funding decision” and prefers “energy-efficient vessels over those of conventional design” (KfW IPEX-Bank: 2014, p. 45). While Crédit Agricole CIB and Société Générale CIB also use the EEDI valuation method for financing decisions, ABN AMRO uses the Green Award certificate, the Lloyd’s Environmental Protection Notation and the GL Excellence (5 star). The certification aims to increase environmental integrity which, in addition to a sustainable supply chain and social inclusion, is one of the fundamental values of ABN AMRO’s ship financing policy (ABN AMRO: 2013, p. 2).

As shown in Section 5.4, of the 56 financial institutions rated, the 32 percent that are beginning to consider sustainability in ship finance have been the best at comprehensively implementing the environmental indicators. Some financial institutions were able to demonstrate a particular aptitude in this area. The European Investment Bank (EIB) and the Rabobank, for example, have detailed rules for scrapping vessels which they had financed. These efforts are particularly noteworthy given the different opinions as to whether the fate of a ship after it is decommissioned and thus no longer being financed is within the ship-financing institution’s sphere of influence.

“A ship’s financing period is over even before scrapping so there is little opportunity to exert influence.”

International classification society (anonymised)

“A financial institution most certainly can influence a ship’s future recycling while still financing the vessel by making provisions for it in the contract.”

Henning Gramann, Green Ship Recycling Service

The EIB has written that the IMO “...in collaboration with the International Labour Organisation ... [has enacted the] ... International Convention for the Safe and Environmentally Sound Recycling of Ships”. The Ship Recycling Convention provides globally applicable rules for international shipbuilding and recycling activities. The EIB will ensure that the ship recycling components of the projects it has financed are consistent with this Convention” (EIB: 2011, p. 24). With its own ship recycling policy, Rabobank has dedicated itself extensively to the issue of the environmentally sound dismantling of ships it has financed. The policy acknowledges the “beaching method” – i.e. dismantling the ship after it has been sailed onto the beach at high speed – as extremely hazardous to the environment. The ship recycling policy goes on to describe how to prevent the damage caused during dismantling that can have negative consequences for the environment and social issues. A condition on funding is used to ensure the borrower complies with the policy. The institution will only fund the vessel’s construction and operation on condition that the other companies involved - even partners - meet certain requirements.

This includes, for example, compliance with essential conventions and guidelines, e. g. the Basel Convention and the Hong Kong Convention. Furthermore, the bank will not finance companies known to have the ships they manage dismantled in ship-breaking yards with poor health and safety standards, or where other polluting or degrading work is carried out. Rabobank also only approves loan applications from shipping companies that can demonstrate that their own policies contain applicable sustainable provisions for scrapping the vessel (Rabobank: 2014, p. 2).

“Rabobank does not provide services to or procure services from: Businesses which have their ships recycled, either directly or indirectly, in locations where negative social and environmental effects of ship recycling are probable or where workers are exposed to high-risk conditions or methods[...].”

Rabobank (2014, p. 2-3)

As described in Section 5.3, up to 43 percent of the financial institutions have referred to several challenges in the social sector as irrelevant.⁶⁹ Here we highlight the financial institutions which, contrary to this claim, do consider socially-oriented approaches in their funding policies. An example of such a financial institution is ABN AMRO. ABN AMRO specifies in its ship financing policy that, in order to obtain funding, shipping companies must ensure certain standards with respect to the living and working conditions on board. Some of these standards concern training courses and mandatory safety guidelines. It also requires e. g. that ship owners carry out alcohol and drug tests on board.

“Clients should care for the safety, health and wellbeing of all employees, including day labourers and migrant workers, respect human rights and care especially for the wellbeing of local communities and those who are affected by their operations. The key indicators here include: officers on the payroll, quality of crewing agents, number of ships covered by labour agreements, training for employees, OHSAS 18001 certification, alcohol/drug testing aboard, occupational health and safety systems and certifications “

ABN AMRO (2013, p. 2)

In their ship financing policies, Crédit Agricole CIB, SEB AB and Société Générale CIB make reference to various international conventions such as the MLC that specifically regulate the social concerns of sailors.

In the survey, the financial institutions and the experts classified governance risks as having the lowest relevance.⁷⁰ Three financial institutions were able to meet all the criteria in the criteria cluster that enquires into exactly these risks. One of these institutions is NIBC. In its ship financing policy, NIBC states that no financing will be provided for vessels that shipping companies have not safeguarded against governance risks.

⁶⁹ By comparison, experts classify up to 20 percent of some ESG risks in the social sector as irrelevant, see p. 57.

⁷⁰ Average rating of financial institutions (experts) 1.9 points (3.26 points), see. p. 54

“Additionally, we will not knowingly provide financial services to vessels that are:

- Not compliant at all times with a reputable classification society;*
- Not insured by a reputable P&I Clubs (Protection and Indemnity Clubs); [. . .]*
- Operating under any of the unacceptable flags defined by the EU, Asia Pacific or USCG port state control black list”*

NIBC (2013, p. 2)

The **Management System** criteria cluster checks whether financial institutions can demonstrate systematic processes for implementing the ESG risk provisions in their ship financing policies. As the ratings in Section 5.4 have shown, financial institutions implement this well, particularly with regard to the criteria of describing processes and responsibilities for implementing the policy and due diligence and monitoring processes to ensure compliance with the policy. A best practice example of the criteria of describing processes and responsibilities for implementing the policy and assessment and disclosure of potential risks and opportunities is ABN AMRO’s “Shipping Sustainability Assessment Tool” (ABN AMRO: 2013 p. 2-3). The sustainability assessment generated by this tool is divided into four steps: screening and defining risks, risk assessment, approval and monitoring of risks. These four processes are designed to guarantee proper compliance with the elements laid down in the policy. The instrument also allows shipping companies to be tracked and their compliance with each element monitored, besides which it can also identify potential improvements. The tool’s design and its use of processes are resoundingly impressive in their assessment of the policy.

There is a lot of potential for improvement in the policies with respect to the criterion of systematic dialogue with relevant stakeholders. Looking at the ship financing policies of the 18 financial institutions, there is no evidence that there has been any specific interaction with stakeholders, and the financial institutions have consequently received relatively poor ratings. On a positive note, however, ABN AMRO is again worth a mention. This financial institution provides credible information that it has developed its policy in cooperation with its stakeholders. The membership in the Sustainable Shipping Initiative mentioned earlier also represents constructive dialogue with stakeholders on sustainability issues in ship financing. The ING Group is showing the beginnings of a dialogue with stakeholders. In its sustainability report the financial institution states that it has adapted and expanded its ship financing policy following a request from a Dutch NGO (ING Group: 2012, p. 26).

“ABN AMRO Bank is a Dutch international bank, a partner in ship finance and a founding member of Sustainable Shipping Initiative. The open and frequent dialogue with SSI members brings us closer to sustainability issues that the shipping industry is facing.”

ABN AMRO (2015)

13 of the 18 financial institutions fulfil the criterion which examines borrowers’ integration of due diligence processes. An example of a due diligence process is a scoring tool that NORD/LB has developed. The scoring tool rates different criteria that influence the ship’s funding.⁷¹ Each of the vessels financed is given a score in different areas, one of

⁷¹ imug was provided with the NORD / LB scoring model confidentially. The scoring model is based on a sound approach with multiple review stages. Further details cannot be provided due to confidentiality agreements.

which covers sustainability issues in the maritime sector. NORD / LB uses the score for making the final decision on the loan and the form it will take. The financial institution's objective is for at least 50 percent of the new ships receiving funding to achieve a specified minimum score with regard to sustainability issues. This instrument is also good for reporting publicly on the financing portfolio's environmental and social performances. To meet this criterion, the financial institution could, for example, disclose whether the annual target of 50 percent has been achieved or how many ships have been rated using the scoring tool. The financial institution, SEB, provides another best practice example. According to its ship financing policy, SEB reserves the right to terminate dealings with customers if they do not adhere to the sustainability criteria laid down in the policy (SEB: 2011, page 2). This statement shows that customers' compliance with sustainability requirements is also expected as part of maintaining a good business relationship.

“Ultimately, SEB has the option, over time, to terminate the relationship with any client not progressing in line with the suggested plan.”

SEB (2011, p. 2)

The last criteria cluster considered in the evaluation is **reporting**. The majority of financial institutions are not yet reporting (publicly) on the subject. In order to facilitate a civil review and be perceived as transparent, however, financial institutes should adopt comprehensive reporting as standard. Evaluating 56 financial institutions has shown that none of the institutions has previously reported publicly on the implementation status of its policy. KfW IPEX-Bank scored impressively, however, in the criterion of reporting on the environmental and social performance of the finance portfolio. The financial institution grants preferred finance to vessels rated in the Energy Efficiency Design Index (EEDI). The EEDI measures the energy efficiency of ships. The base values used to compare the energy efficiency of ships are regularly updated in line with advances in technology. Updates of the vessel ratings are then also necessary after the base values have been updated. The KfW uses this regular process for generating reports that track the carbon emissions and energy efficiency of the vessels financed.

“Using EEDI, we were able to evaluate the energy efficiency of 88% of the vessels in the KfW IPEX-Bank portfolio with good results: The merchant shipping portfolio is performing slightly better on average than the world fleet.”

KfW IPEX-Bank (2012, p. 42; 2016)

6. Summary and classification of results

1.

This working paper firstly aims to provide an overview of the ESG risks relevant to the shipping sector and to examine whether financial institutions can address these risks through their ship financing business:

Analyzing the corresponding literature, discussions with experts and the survey of the ship-financing financial institutions and experts in the shipping sector have shown that shipping is linked to a variety of sustainability challenges. The sustainability risks identified as relevant can be found across the full range of ESG factors. There are not only environmental protection issues such as air and water pollution and other environmental problems, but also social aspects such as the sometimes inhumane working conditions in ship-breaking yards in developing and emerging countries, or the living and working conditions of the crew. There are also challenges with regard to governance such as concealment of the true ownership structure or the transport of destabilizing commodities. Despite the international conventions, national policies, regulations and laws that exist to govern these matters, experts suggest the risk of serious irregularities is still very present. Simply assigning responsibility, however, or deciding who bears the ultimate responsibility for the consideration of sustainability aspects is made more difficult by the complexity of the industry's structure and the legal connections involved. It is clear from the survey results, however, that more than half the respondents indicated that the identified ESG risks can be addressed by the financial institution working in ship finance.

2.

Another objective of this paper is to illustrate how motivated financial institutions are in considering ESG risks in their ship finance:

The survey not only brought to light to the relevance of ESG risks and the influence of the bank, it also revealed the financial institutions' motives for integrating sustainability aspects into their ship financing. The survey results showed that financial institutions are not only ethically obliged to concern themselves with sustainability issues in ship financing; they are also well advised to do so for economic reasons. The arguments put forward by the expert groups and financial institutions can be divided into three categories: profitability, CSR & reputation management, and legal requirements. Overall, both the financial institution and the expert respondent groups we surveyed rated the importance of ESG issues for the profitability, stability and risk minimization of shipping loans as high. While the financial institutions focus on their own profitability, the experts emphasize the positive impact on the profitability of the ship owner or the borrower. It must be said however, that these two perspectives are inextricably interdependent. In

summary, it can be observed that by considering ESG aspects in ship financing, financial institutions are hoping for an improved yield-risk ratio at various levels.

3.

The third objective of this paper is to provide an overview of the current efforts of financial institutions in their consideration of sustainability aspects in ship finance with a view to establishing some best practice examples:

Based on the study's results and the preceding expert discussions, imug developed sustainability criteria and the corresponding rating methodology for the ship financing business, after which the sustainability efforts of the 56 financial institutions listed were rated. The result is sobering. Despite finding evidence of a need for considerable action from a sustainability perspective and the responsibility that this places on financial institutions active in ship financing, the study shows that nearly 70 percent of rated financial institutions do not consider any sustainability aspects in their ship financing at all. This is all the more incomprehensible when one considers that the survey provides financial institutions with a business case for the integration of sustainability issues. Of the 56 financial institutions studied, only 14 financial institutions have a publicly accessible sustainability policy on ship financing. A further four financial institutions have policies but these were only provided to imug confidentially. This alone is a sign that consideration of sustainability aspects in ship financing does not yet have the same importance for the banks as other sectors and issues do, such as financing the energy industry or the mining industry. After rating all the ESG domains, the overall conclusion proves to be somewhat dissatisfactory. After 38 financial institutions were unable to demonstrate any involvement with the subject and thus achieved the worst score of "no evidence" (on a rating scale of one to five), regrettably none of the remaining 18 financial institutions was able to achieve the two best rating levels. Nine financial institutions scored a mediocre rating of "intermediate" and nine other financial institutions, with ratings of "limited", only achieved the kind of rating status that makes it clear that they only deal rudimentarily with sustainability issues in ship financing.

The evaluation of all criteria in the environmental, social and governance domains confirms what the analysis of the survey has already demonstrated: in ship financing, financial institutions see environmental issues as more relevant than social and governance issues. Whereas environmental issues (except for fishing) are considered by more than 50 percent of financial institutions in their ship financing policies, only a third of policies include social and governance aspects. The better rated financial institutions stand out from the financial institutions rated at "limited" through this more extensive consideration of ESG issues. Social issues in the maritime sector are mentioned only in the ship financing policies of banks rated at "intermediate". This group of financial institutions also considers more governance criteria in their policies. It is noteworthy that more than half of the 18 financial institutions able to show some initiative in sustainability have set up management systems in order to effectively implement the policy requirements in their business processes. This indicates that these financial institutions consider the issue as entrepreneurially relevant and do not merely wish to use it for communication purposes.

Despite the sobering overall performance of financial institutions in their efforts to date to integrate sustainability aspects into their ship financing, it is nevertheless gratifying that some financial institutions can be cited as best practice examples for certain sustainability criteria. These pioneers are important in allowing the issue to reinforce its position in the financial and shipping industry. They set a standard in certain sustainability aspects which influences both the shipping and the financial industry.

In addition to the basic research for the design and review of the rating criteria, another objective for this paper lies especially in supporting financial institutions, investors and experts from the shipping sector in the discussion on considering ESG risks in shipping:

Today, shipping is the most important component for the movement of freight around the world. Nearly every product that is consumed, and almost every euro that is invested in companies comes into contact in some way with the shipping sector. Despite this, only a few financial institutions and investors have hitherto considered the sustainability issues connected with the shipping industry. Through their lending activities, financial institutions in particular are of enormous importance for shipping from a sustainability perspective. The presence or absence of ESG criteria in lending and during the repayment period confers a guiding role on the financial institution in the orientation towards sustainability in shipping. Unfortunately, the results of evaluating the policies, management and reporting systems of financial institutions have shown that the majority of financial institutions are still just beginning to integrate sustainability aspects into ship financing. When classifying the evaluation results, it should also be kept in mind that controversial incidents involving financial institutions in the maritime sector have not been considered in this paper, although their consideration is essential for a complete understanding of the sustainability performance of financial institutions in ship financing. Comparing its sustainability commitments with its actual business practices and activity sheds light on how seriously a financial institution wants to integrate sustainability aspects into its ship financing and/or whether the institution's management systems are working effectively. However, since the overall results of the sustainability efforts of financial institutions have already painted a pretty weak picture, we have decided to omit any controversy research at this point.

The results of this working paper indicate that a financial institution can have an influence on the maritime sector through its ship financing activities - from the design stage and construction to the ship's operation and dismantling. At the same time, the financial institution is faced with the many different ESG risks in shipping. To reduce these risks effectively or to avoid them altogether, financial institutions should have a sustainability policy and associated management and reporting systems in their ship financing business. Above all, transparency is an important key to establishing and promoting industry standards, and a policy should therefore be publicly available and demonstrably integrated into the financial institution's operations. It is also necessary that a financial institution reports transparently and regularly on its progress in this field and on any controversial incidents that may occur.

All things considered, financial institutions are not yet assuming enough responsibility with regard to sustainability in ship financing. Some financial institutions are demonstrating good approaches. Intensively examining these issues will allow them not only to expand their pioneering roles, but also become important drivers for more sustainability in the shipping industry. Financial institutions that already deal with sustainability issues in ship financing and are seeking to improve their sustainability performance should widen their perspectives to include the entire spectrum of ESG risks. Investors who can envisage a direct or indirect investment in the maritime sector through ship mortgage bonds, for example, should make greater use of their power as investors and insist on the consideration of sustainability issues. In conclusion, we have to admit that financial institutions, investors and stakeholders in the shipping industry still have a long way to go before sustainability is comprehensively embedded in the maritime sector - so, without more ado, "full speed ahead"!

List of abbreviations

BAFA	Federal Office for Economic Affairs and Export Control
CoC	Certificate of Competencies
CTIG	China Tuna Industry Group
dwt	dead weight tonnage
ECA	Emission Controlled Areas
EEDI	Energy Efficiency Design Index
ESG	Environmental, Social, Governance
EU SRR	Ship Recycling Regulation
FAO	Food and Agriculture Organization of the United Nations
FIDH	International Federation of Human Rights
FoC	Flag of Convenience
HFO	Heavy Fuel Oil
IACS	International Association of Classification Societies
IHM	Inventory of Hazardous Materials
ILO	International Labour Organization
IMO	International Maritime Organization
IRI	International Registries Inc.
ITF	International Transport Workers' Federation
IUU	Illegal, Unreported, and Unregulated Fishing
GT	Gross tonnage
LNG	Liquified Natural Gas
MARPOL	International Convention for the Prevention of Pollution from Ships
MLC	Maritime Labour Convention
MoU	Memorandum of Understanding on Port State Control
NGO	Non-governmental organisation
NO _x	Nitrogen oxide
P&I Club	Protection & Indemnity Club
SECA	Sulphur Emission Control Area
SEEMP	Ship Energy Efficiency Management Plan
SIPRI	Stockholm International Peace Research Institute
SMCP	IMO Marine Standard Communication Phrases
SOLAS	International Convention for the Safety of Life at Seas
SO _x	Sulfur oxide
SRI	Socially Responsible Investment
STCW	International Convention on Standards of Training Certification and Watchkeeping for Seafarers
TBT	Tributyltin hydride
TEU	Twenty-foot Equivalent Unit
tkm	tonne-kilometre
UN	United Nations
UNCLOS	United Nations Convention on the Law of the Sea
VOC	Volatile Organic Compound

Annex

Annex 1

QUESTIONNAIRE					
imug study of sustainability in ship finance					
Please feel free to contact us directly in case of questions relating to the survey or the work of imug in general:					
Your contact point at imug					
Tommy Piemonte Head of Fixed Income ESG-Research ☎ +49.511.12196-28 ✉ piemonte@imug.de					
imug Nachhaltiges Investment Postkamp 14a D - 30159 Hannover Fon: 0511.12196-0 Fax: 0511.12196-0 www.imug.de					
Completion Help and Information for Processing the Survey					
<ul style="list-style-type: none">▶ Before filling in the survey, please save the document on your computer and complete the saved version. The survey can be filled in directly on your computer screen.▶ By using the tab-button you can switch to the next question.▶ Text boxes are designed in a way that allows adapting to the length of your text. In doing so, the survey layout changes and some parts of a question may be found on the next page.					
					

imug questionnaire on sustainability in ship finance

Contact point for completion of the survey

Name of institution Contact point

Department E-Mail

Date Phone

A. Publication of your answers

Are you interested in a publication of parts of your response or submitted documents in the imug sector study? (imug will not publish or communicate any information to third parties without explicit prior consent from you or your organisation. Any comment or text excerpt will be send to you for approval prior to any publication.)

☐ Yes, we are interested in a publication.

☐ No, we are not interested in a publication.

Comment:

B. Participation in the expert dialogue

Are you interested to participate in the expert dialogue on the development of our new rating methodology? (In case you are interested we will contact you in the coming days to provide you with further information)

☐ Yes, we want to participate in the expert dialogue.

☐ No, we do not want to participate in the expert dialogue.

Comment:

Sustainability in ship finance

1. **From your perspective, is the attached list of ESG (Environmental, Social, Governance)-risks in the shipping sector identified by imug complete? What points could be added or may rather be neglected?** (please indicate in the attached list on page 4)
2. **From your perspective, which of the ESG indicators in the attached list are the most relevant in the shipping sector?** (please indicate in the attached list on page 4)
3. **In terms of economic considerations (Business Case), what would be the reasons for a financial institution to consider ESG-risks in the ship financing business? If you do not think that there are sound economic reasons, why not?**
Explanation:
4. **From your perspective, which of the ESG indicators in the attached list can be effectively influenced or assessed by the financing entity during the ship financing process or can be required from clients in the shipping industry? Which obstacles might be in the way to effectively require or assess single indicators?** (please indicate in the attached list on page 4)

We look forward to hearing your comments!

Sustainability in ship finance

1. **From your perspective, is the attached list of ESG (Environmental, Social, Governance)-risks in the shipping sector identified by imug complete? What points could be added or may rather be neglected?** (please indicate in the attached list on page 4)
2. **From your perspective, which of the ESG indicators in the attached list are the most relevant in the shipping sector?** (please indicate in the attached list on page 4)
3. **In terms of economic considerations (Business Case), what would be the reasons for a financial institution to consider ESG-risks in the ship financing business? If you do not think that there are sound economic reasons, why not?**
Explanation:
4. **From your perspective, which of the ESG indicators in the attached list can be effectively influenced or assessed by the financing entity during the ship financing process or can be required from clients in the shipping industry? Which obstacles might be in the way to effectively require or assess single indicators?** (please indicate in the attached list on page 4)

We look forward to hearing your comments!

List of ESG-risks in the shipping industry

- ▶ The left column in the following table covers the initially identified ESG-risks in the shipping industry. The topics environment, social und governance risks are going to be answered consecutively.
- ▶ The columns on the right contain the **questions 1, 2 and 4**. Please make use of the **open text fields** to explain your answers
 - ▶ **Question 1:** From your point of view, is this ESG-risk **relevant** in the shipping industry?
 - ▶ **Question 2:** What is the **degree of relevance** of each specific ESG-risk?
 - ▶ **Question 4:** **Potential influence of the ship financier** on each specific ESG-risk.

Environment -risks

	Question 1: Please comment in the respective field, if you think the respective ESG-risk has no relevance in the shipping industry.	Question 2: Please indicate the degree of relevance of the ESG-risk (1)= little relevance (4)= high relevance	Question 4: Please comment in the respective field if you think the ship financier cannot influence this ESG-risk.
Air pollution and climate change	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 1 2 3 4	.....
Emissions of sulphur and nitrogen oxides	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 1 2 3 4	.....
Emissions of volatile organic compounds (VOCs) and particulate matter/ fine particle dust	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 1 2 3 4	.....
CO ₂ emission	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 1 2 3 4	.....
Water pollution	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 1 2 3 4	.....
(Illegal) disposal of oil sludge	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 1 2 3 4	.....
Contaminated bilge- and wash water	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 1 2 3 4	.....
Black- and greywater	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 1 2 3 4	.....
(Illegal) disposal of waste and residual materials	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 1 2 3 4	.....
Spreading of organisms in the ballast water	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 1 2 3 4	.....
Toxic substances in antifouling paints	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 1 2 3 4	.....
Maritime accidents (leak of fuel and harmful cargo)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 1 2 3 4	.....
Other environmental pollution or a loss of biodiversity	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 1 2 3 4	.....
Shipping noise as a stress factor for marine life	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 1 2 3 4	.....
Environmental pollution by dismantling (beaching method)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 1 2 3 4	.....
Environmental pollution by harbour and dock yard	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 1 2 3 4	.....
Excessive pressure on fish stocks by illegal fishing, over fishing, industrial fishing (trawl nets)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 1 2 3 4	.....

Social -risks

Question 1: Please comment in the respective field, if you think the respective ESG-risk has **no** relevance in the shipping industry.

Question 2: Please indicate the degree of relevance of the ESG-risk
(1)= little relevance
(4)= high relevance

Question 4: Please comment in the respective field if you think the ship financier **cannot** influence this ESG-risk.

Poor working conditions: problems centred at flags of convenience	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
Missing regulation of the board crew number	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
Lack of/missing regulation of temporary workers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
Long working hours without correspondingly breaks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
Missing union representation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
Unfair wages	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
Poor living conditions on board (lack of food and water)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
Missing control of social and labour standards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
Lack of regulation and quality of Crewing Agents	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
Health and safety at the workplace: accidents caused by human error, centred at flags of convenience because of [...]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
[...] communication problems of the crew	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
[...] insufficient training of the crew	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
[...] insufficient further education of the crew	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
[...] an overworked crew	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
[...] missing control against alcohol and drug abuse	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
[...] lack of attention to the Safety Management System	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
Accidents caused by technical defects: centred at flags of convenience because of [...]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
[...] old/low quality ships and ship technology	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
[...] a lack of private control because there is no recognized classification society (e.g. IACS) certified or insurer (e.g. P&I Club) insured	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
Other social problem areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
Working conditions at facilities for dismantling (Human rights, ILO, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	

Living conditions of the local population in developing countries, which are affected by shipping and/or dismantling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
Illegal fishing and industrial fishing endanger local traditional fishing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	

Governance -risks

Question 1: Please comment in the respective field, if you think the respective ESG-risk has **no** relevance in the shipping industry.

Question 2: Please indicate the degree of relevance of the ESG-risk
(1)= little relevance
(4)= high relevance

Question 4: Please comment in the respective field if you think the ship financier **cannot** influence this ESG-risk.

Anonymity or concealment of ownership structures at flag of convenience	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
Anonymity of prosecution	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
Risk of corruption	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
Risk of money laundering	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
Risk of tax fraud	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
Settlement risk for contracting party and financier	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
Lack of quality by ships under flags of convenience	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
Registry of old/low quality ships	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
Illegal cargo and embargoes: problems centred at flags of convenience	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
Transport of destabilizing goods (weapons etc.) and anaesthetics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
By-passing of embargoes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
Criminalization of the crew	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
Income of register of shipping is financing sanctioned states and destabilizing goods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
Piracy and terrorism	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
Risk of attacks/ insufficient protective measures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
Support by state security forces (marine) by flags of convenience is questionable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
Quality and proportionality (certification) of private security forces by flags of convenience is questionable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
Violation of international conventions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	

Lack of control on the high seas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	

Further inclusion of ESG-risks?

Please feel free to add more risks if you have the feeling we missed something.

ESG-risk	Reasoning	Question 2: Please indicate the degree of relevance of the ESG-risk (1)= little relevance (4)= high relevance				Question 4: Please comment in the respective field if you think the ship financer cannot influence this ESG-risk.
.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	
.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		1	2	3	4	

Comments

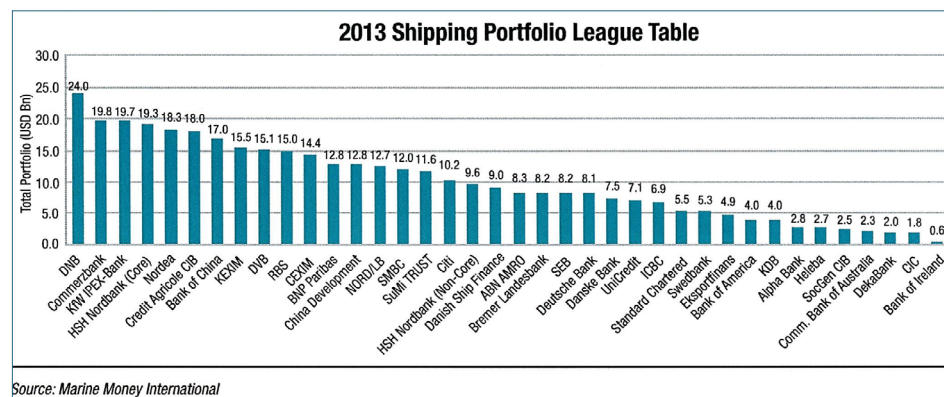
If you have further **suggestions, criticism or comments** please feel free to address them in the comment field below.

Comment:

Thank you very much for your assistance and cooperation!

Annex 2

Shipping Portfolio League Table 2013



Oates: 2014, p. 8

Annex 3

Amount of merchant ship registered in a flag state (as of 2008/2010) and the absolute (as of 2008/2010) and relative (as of 2010) amount of ships in the register owned by foreigners

Country	Ships Registered in Flag State		Ships in Flag State's register owned by foreigners		Owned by foreigners	Trend
	2008	2010	2008	2010	2010 in %	
Panama	6,323	6,413	5,394	5,162	80.49 %	- 4.30 %
Liberia	2,204	2,771	2,109	2,581	93.14 %	+ 22.30 %
China	1,826	2,030	20	22	1.08 %	+ 10.0 %
Malta	1,438	1,650	1,343	1,437	87.09 %	+ 6.99 %
Hong Kong	1,114	1,644	703	976	59.37 %	+ 38.80 %
Singapore	1,292	1,599	774	966	60.41 %	+ 24.80 %
Marshall Islands	1,049	1,593	990	1,468	92.15 %	+ 48.30 %
Indonesia	971	1,340	43	69	5.15 %	+ 60.40 %
Antigua & Barbuda	1,146	1,257	1,113	1,215	96.66 %	+ 9.16 %
Bahamas	1,223	1,160	1,150	1,063	91.64 %	- 7.56 %
Russia	1,074	1,143	112	155	13.56 %	+ 38.40 %
Greece	869	860	64	42	4.88 %	- 34.40 %
Cyprus	858	838	690	622	74.22 %	- 9.86 %
Netherlands	622	744	203	196	26.34 %	- 3.45 %
Turkey	612	629	8	1	0.16 %	- 87.50 %
Norway	688	585	199	81	13.85 %	- 59.30 %
Cambodia	626	544	467	352	64.71 %	- 24.60 %
United Kingdom	518	504	264	308	53.77 %	+ 16.70 %
Germany	393	427	11	6	1.41 %	- 45.40 %
Denmark	327	367	26	27	7.36 %	+ 3.84 %
India	501	340	12	10	2.94 %	- 16.70 %
Belize	216	247	178	152	61.54 %	- 14.60 %

CIA World Factbook: 2008/2013

Annex 4

NO_x-emissions according to MARPOL VI Regulation 13

Class	Valid for ship completions from onwards:	Weigthed emission limit values (g/kWh) n = crankshaft revolution/min		
		n < 130 / min ⁻¹	130 min ⁻¹ ≥ n < 2000 min ⁻¹	n ≥ 2000 / min ⁻¹
I	1. January 2000	17.0	$45 \cdot n^{(-0.2)}$	9.8
II	1. January 2011	14.4	$44 \cdot n^{(-0.23)}$	7.7
III	1. January 2016 ⁷²	3.4	$9 \cdot n^{(-0.2)}$	2.0

MARPOL Anlage VI: 2016

Annex 5

MARPOL Annex V, Regulations 3 and 5

Disposal of waste and scrap					
Outside special areas ⁷³ Regulation 3 Paragraph 1			Inside special areas Regulation 5 Paragraph 2		
Plastic, ashes from plastic	Dunnage, formwork and packaging material that floats	Food waste and other waste such as Cargo residues, paper, rags, glass, metal, bottles, crockery and ash	Plastic, ashes from plastic	Other waste	Food waste
Prohibited	Minimum distance to the nearest land at least 25 sm	Minimum distance to the nearest land at least 12 sm But: If directed by crushing or grinding plant 3 sm	Prohibited	Prohibited	Minimum distance to the nearest land at least 12 sm

Seum, S. et al.: 2011, p. 40

⁷² Class III only valid for ship that operate in Emission Control Areas (ECA), outside the area Class II is still valid.

⁷³ MARPOL Annex V defines the following special areas: Mediterranean Sea, Baltic Sea, Black Sea (not yet in force), Red Sea (not yet in force), Gulf region, North Sea, Antarctica and greater Caribbean region (including the Gulf of Mexico and Caribbean Sea) (IMO, 3: 2015).

Question 3: From your point of view, is the ESG-risk **relevant** in the shipping industry?

Question 4: What is the **degree of relevance** of each specific **ESG-risk**?

Question 5: Potential influence of the ship **financer** on each specific ESG-risk

Environmental risks

Environmental risks

	<div>Question 3:</div> <div>Please comment in the respective field, if you think the respective ESG-risk has no relevance in the shipping industry.</div> <div>Statement: No ESG-risk (x % of n = total number of replies)</div>	<div>Question 4:</div> <div>Please indicate the degree of relevance of the ESG-risk</div> <div>(1) = little relevance (4) = high relevance (n = total number of replies)</div>	<div>Question 5:</div> <div>Please comment in the respective field if you think the ship financer cannot influence this ESG-risk.</div> <div>Statement: Financial institution cannot influence the ESG-risk (x % of n = total number of replies)</div>	
Air pollution and climate change	Financial institutions	0 % (n=6)	3.17 (n=6)	0 % (n=6)
	Experts	0 % (n=8)	3.86 (n=7)	0 % (n=8)
	Financial institutions	0 % (n=6)	3.17 (n=6)	0 % (n=6)
	Experts	0 % (n=9)	3.63 (n=8)	0 % (n=8)
Emissions of sulphur and nitrogen oxides	Financial institutions	0 % (n=6)	2.67 (n=6)	0 % (n=6)
	Experts	0 % (n=8)	3.29 (n=7)	0 % (n=8)
	Financial institutions	0 % (n=6)	3.33 (n=6)	0 % (n=6)
	Experts	0 % (n=8)	3.88 (n=8)	0 % (n=8)
Emissions of volatile organic compounds (VOCs) and particulate matter/fine particle dust	Financial institutions	0 % (n=6)	2.83 (n=6)	0 % (n=6)
	Experts	0 % (n=8)	3.14 (n=7)	0 % (n=8)
	Financial institutions	0 % (n=6)	2.67 (n=6)	33 % (n=6)
	Experts	0 % (n=8)	3.00 (n=7)	0 % (n=8)
CO2 emissions	Financial institutions	0 % (n=6)	2.67 (n=6)	0 % (n=6)
	Experts	0 % (n=8)	3.00 (n=8)	0 % (n=8)
	Financial institutions	33 % (n=6)	2.33 (n=6)	0 % (n=6)
	Experts	0 % (n=8)	3.00 (n=8)	0 % (n=8)
Water pollution	Financial institutions	33 % (n=6)	2.50 (n=6)	0 % (n=6)
	Experts	0 % (n=8)	3.13 (n=8)	0 % (n=8)
	Financial institutions	0 % (n=6)	3.00 (n=6)	0 % (n=6)
	Experts	0 % (n=8)	3.25 (n=8)	0 % (n=8)
(Illegal) disposal of oil sludge	Financial institutions	0 % (n=6)	2.67 (n=6)	0 % (n=6)
	Experts	0 % (n=8)	3.00 (n=7)	0 % (n=8)
	Financial institutions	0 % (n=6)	2.67 (n=6)	0 % (n=6)
	Experts	0 % (n=8)	3.00 (n=8)	0 % (n=8)
Contaminated bilge and wash water	Financial institutions	0 % (n=6)	2.67 (n=6)	0 % (n=6)
	Experts	0 % (n=8)	3.00 (n=8)	0 % (n=8)
	Financial institutions	0 % (n=6)	2.67 (n=6)	0 % (n=6)
	Experts	0 % (n=8)	3.00 (n=8)	0 % (n=8)
Black and grey water	Financial institutions	0 % (n=6)	2.67 (n=6)	0 % (n=6)
	Experts	0 % (n=8)	3.00 (n=8)	0 % (n=8)
	Financial institutions	0 % (n=6)	2.67 (n=6)	0 % (n=6)
	Experts	0 % (n=8)	3.00 (n=8)	0 % (n=8)
(Illegal) disposal of waste and residual materials	Financial institutions	0 % (n=6)	2.67 (n=6)	0 % (n=6)
	Experts	0 % (n=8)	3.13 (n=8)	0 % (n=8)
	Financial institutions	0 % (n=6)	3.00 (n=6)	0 % (n=6)
	Experts	0 % (n=8)	3.25 (n=8)	0 % (n=8)
Spreading of organisms in the ballast water	Financial institutions	0 % (n=6)	2.67 (n=6)	0 % (n=6)
	Experts	0 % (n=8)	3.00 (n=8)	0 % (n=8)
	Financial institutions	0 % (n=6)	2.67 (n=6)	0 % (n=6)
	Experts	0 % (n=8)	3.00 (n=8)	0 % (n=8)

Toxic substances in antifouling paints	Financial institutions	33 % (n=6)	2.33 (n=6)	0 % (n=6)
	Experts	0 % (n=8)	3.29 (n=7)	0 % (n=8)
Maritime accidents (leak of fuel and harmful cargo)	Financial institutions	0 % (n=6)	2.67 (n=6)	0 % (n=6)
	Experts	0 % (n=8)	3.50 (n=8)	0 % (n=8)
Other environmental pollution or a loss of biodiversity	Financial institutions	0 % (n=6)	2.67 (n=6)	0 % (n=6)
	Experts	0 % (n=8)	3.17 (n=6)	0 % (n=8)
Shipping noise as a stress factor for marine life	Financial institutions	0 % (n=6)	2.50 (n=6)	0 % (n=6)
	Experts	0 % (n=8)	2.86 (n=7)	0 % (n=8)
Environmental pollution by dismantling (beaching method)	Financial institutions	0 % (n=6)	3.33 (n=6)	0 % (n=6)
	Experts	0 % (n=8)	3.63 (n=8)	11 % (n=8)
Environmental pollution by harbour and dock yard	Financial institutions	33 % (n=6)	2.00 (n=6)	0 % (n=6)
	Experts	0 % (n=8)	2.88 (n=8)	0 % (n=8)
Excessive pressure on fish stocks by illegal fishing, over fishing, industrial fishing (trawl nets)	Finanzinstitut	0 % (n=6)	3.00 (n=4)	0 % (n=6)
	Experts	0 % (n=8)	3.38 (n=8)	0 % (n=8)

Social risks

Social risks

	Question 3: Please comment in the respective field, if you think the respective ESG-risk has no relevance in the shipping industry. Statement: No ESG-risk (x % of n = total number of replies)	Question 4: Please indicate the degree of relevance of the ESG-risk (1)= little relevance (4)= high relevance (n = total number of replies)	Question 5: Please comment in the respective field if you think the ship financer cannot influence this ESG-risk. Statement: Financial institution cannot influence the ESG-risk (x % of n = total number of replies)	
Poor working conditions: problems centred at flags of convenience	Financial institutions	14 % (n=7)	2.60 (n=5)	0 % (n=6)
	Experts	13 % (n=8)	3.83 (n=6)	0 % (n=8)
Missing regulation of the board crew number	Financial institutions	43 % (n=7)	2.25 (n=4)	0 % (n=6)
	Experts	25 % (n=8)	3.29 (n=7)	0 % (n=8)
Lack of/missing regulation of temporary workers	Financial institutions	43 % (n=7)	2.50 (n=6)	0 % (n=6)
	Experts	13 % (n=8)	3.33 (n=6)	0 % (n=8)
Long working hours without correspondingly breaks	Financial institutions	43 % (n=7)	2.17 (n=6)	0 % (n=6)
	Experts	13 % (n=8)	3.86 (n=7)	0 % (n=8)
Missing union representation	Financial institutions	43 % (n=7)	2.33 (n=6)	0 % (n=6)
	Experts	13 % (n=8)	3.14 (n=7)	0 % (n=8)
Unfair wages	Financial institutions	14 % (n=7)	2.00 (n=5)	0 % (n=6)
	Experts	13 % (n=8)	3.29 (n=7)	0 % (n=8)
Poor living conditions on board (lack of food and water)	Financial institutions	14 % (n=7)	2.33 (n=6)	0 % (n=6)
	Experts	13 % (n=8)	3.43 (n=7)	0 % (n=8)
Missing control of social and labour standards	Financial institutions	14 % (n=7)	3.00 (n=6)	0 % (n=6)
	Experts	13 % (n=8)	3.17 (n=7)	0 % (n=8)
Lack of regulation and quality of Crewing Agents	Financial institutions	14 % (n=7)	2.50 (n=6)	0 % (n=6)
	Experts	13 % (n=8)	3.29 (n=7)	0 % (n=8)

Health and safety at the workplace: accidents caused by human error, centred at flags of convenience because of [...]	Financial institutions	43 % (n=7)	2.00 (n=5)	33 % (n=6)
	Experts	22 % (n=9)	3.75 (n=4)	0 % (n=9)
[...] communication problems of the crew	Financial institutions	43 % (n=7)	1.83 (n=6)	33 % (n=6)
	Experts	22 % (n=9)	3.43 (n=7)	0 % (n=9)
[...] insufficient training of the crew	Financial institutions	43 % (n=7)	1.83 (n=6)	33 % (n=6)
	Experts	22 % (n=9)	3.29 (n=7)	0 % (n=9)
[...] insufficient further education of the crew	Financial institutions	43 % (n=7)	2.00 (n=6)	33 % (n=6)
	Experts	22 % (n=9)	2.83 (n=6)	0 % (n=9)
[...] an overworked crew	Financial institutions	43 % (n=7)	1.83 (n=6)	33 % (n=6)
	Experts	22 % (n=9)	3.71 (n=7)	0 % (n=9)
[...] missing control against alcohol and drug abuse	Financial institutions	43 % (n=7)	2.00 (n=6)	33 % (n=6)
	Experts	22 % (n=9)	3.14 (n=7)	0 % (n=9)
[...] lack of attention to the Safety Management System	Financial institutions	43 % (n=7)	2.17 (n=6)	33 % (n=6)
	Experts	22 % (n=9)	3.57 (n=7)	0 % (n=9)
Accidents caused by technical defects: centred at flags of convenience because of [...]	Financial institutions	14 % (n=7)	2.00 (n=6)	0 % (n=6)
	Experts	30 % (n=10)	3.80 (n=5)	0 % (n=9)
[...] old/low quality ships and ship technology	Financial institutions	14 % (n=7)	2.71 (n=6)	33 % (n=6)
	Experts	30 % (n=10)	3.71 (n=7)	0 % (n=9)
[...] a lack of private control because there is no recognized classification society (e. g. IACS) certified or insurer (e. g. P&I Club) insured	Financial institutions	0 % (n=6)	2.33 (n=6)	0 % (n=6)
	Experts	30 % (n=10)	3.71 (n=7)	0 % (n=9)
Other social problem areas	Financial institutions	0 % (n=6)	3.33 (n=6)	0 % (n=6)
	Experts	0 % (n=7)	3.67 (n=6)	0 % (n=8)
Working conditions at facilities for dismantling (Human rights, ILO, etc.)	Financial institutions	0 % (n=6)	3.75 (n=4)	00 % (n=6)
	Experts	0 % (n=7)	3.71 (n=7)	11 % (n=9)
Living conditions of the local population in developing countries, which are affected by shipping and/or dismantling	Financial institutions	0 % (n=6)	3.33 (n=6)	33 % (n=6)
	Experts	0 % (n=7)	3.29 (n=7)	0 % (n=8)
Illegal fishing and industrial fishing endanger local traditional fishing	Financial institutions	0 % (n=6)	3.00 (n=6)	0 % (n=6)
	Experts	0 % (n=7)	3.38 (n=6)	0 % (n=8)

Governance risks

	Question 3: Please comment in the respective field, if you think the respective ESG-risk has no relevance in the shipping industry. Statement: No ESG-risk (x % of n = total number of replies)	Question 4: Please indicate the degree of relevance of the ESG-risk (1) = little relevance (4) = high relevance (n = total number of replies)	Question 5: Please comment in the respective field if you think the ship financier cannot influence this ESG-risk. Statement: Financial institution cannot influence the ESG-risk (x % of n = total number of replies)
Anonymity or concealment of ownership structures at flag of convenience	Financial institutions Experts 0 % (n=6)	1.67 (n=6)	0 % (n=6)
Anonymity of prosecution	Financial institutions Experts 11 % (n=9) 0 % (n=6)	3.83 (n=6) 1.67 (n=6)	0 % (n=8) 0 % (n=6)
Risk of corruption	Financial institutions Experts 11 % (n=9) 0 % (n=6)	3.38 (n=8) 1.83 (n=6)	0 % (n=8) 0 % (n=6)
Risk of money laundering	Financial institutions Experts 11 % (n=9) 0 % (n=6)	3.50 (n=8) 1.67 (n=6)	0 % (n=8) 0 % (n=6)
Risk of tax fraud	Financial institutions Experts 11 % (n=9) 0 % (n=6)	3.13 (n=8) 1.67 (n=6)	0 % (n=8) 0 % (n=6)
Settlement risk for contracting party and financier	Financial institutions Experts 11 % (n=9) 0 % (n=6)	3.13 (n=8) 1.50 (n=6)	0 % (n=8) 0 % (n=6)
Lack of quality by ships under flags of convenience	Financial institutions Experts 11 % (n=9)	3.00 (n=3)	0 % (n=8)
Registry of old/low quality ships	Financial institutions Experts 0 % (n=6) 20 % (n=10)	2.00 (n=5) 3.50 (n=6)	0 % (n=6) 0 % (n=8)
Illegal cargo and embargoes: problems centred at flags of convenience	Financial institutions Experts 0 % (n=6) 20 % (n=10)	2.40 (n=6) 3.75 (n=8)	0 % (n=6) 0 % (n=8)
Transport of destabilizing goods (weapons etc.) and anaesthetics	Financial institutions Experts 0 % (n=6) 13 % (n=8)	2.00 (n=6) 3.00 (n=3)	0 % (n=6) 0 % (n=8)
By-passing of embargoes	Financial institutions Experts 0 % (n=6) 13 % (n=8)	2.17 (n=6) 3.14 (n=7)	0 % (n=6) 0 % (n=8)
Criminalization of the crew	Financial institutions Experts 0 % (n=6) 13 % (n=8)	2.17 (n=6) 3.14 (n=7)	0 % (n=6) 0 % (n=8)
Income of register of shipping is financing sanctioned states and destabilizing goods	Financial institutions Experts 0 % (n=6) 13 % (n=8)	2.17 (n=6) 3.14 (n=7)	0 % (n=6) 0 % (n=8)
	Financial institutions Experts 0 % (n=6) 13 % (n=8)	2.00 (n=6) 3.29 (n=7)	0 % (n=6) 0 % (n=8)

Piracy and terrorism	Financial institutions	0 % (n=6)	1.83 (n=6)	0 % (n=6)
	Experts	0 % (n=7)	2.83 (n=6)	0 % (n=8)
Risk of attacks/insufficient protective measures	Financial institutions	0 % (n=6)	1.83 (n=6)	0 % (n=6)
	Experts	0 % (n=7)	3.29 (n=7)	0 % (n=8)
Support by state security forces (marine) by flags of convenience is questionable	Financial institutions	17 % (n=6)	1.67 (n=6)	0 % (n=6)
	Experts	0 % (n=7)	2.67 (n=6)	0 % (n=8)
Quality and proportionality (certification) of private security forces by flags of convenience is questionable	Financial institutions	0 % (n=6)	2.33 (n=6)	0 % (n=6)
	Experts	0 % (n=7)	2.71 (n=7)	0 % (n=8)
Violation of international conventions	Financial institutions	0 % (n=6)	2.00 (n=6)	0 % (n=6)
	Experts	0 % (n=8)	3.71 (n=7)	0 % (n=8)
Lack of control on the high seas	Financial institutions	0 % (n=6)	1.60 (n=5)	0 % (n=6)
	Experts	0 % (n=8)	3.75 (n=8)	0 % (n=8)

Suggested ESG risks

- ▶ Black carbon fraction of PM
- ▶ Emissions monitoring of smokestack
- ▶ Shipboard incineration
- ▶ Scrubber effluent pollution
- ▶ Stern tube (propeller shaft) lubricant discharges, caused by malfunction, etc.
- ▶ Overboard containers
- ▶ Pressure on ecosystem when operating in designated marine protected areas.
- ▶ Risks of being part of the supply chain for illegally-caught threaten species
- ▶ Care and support for seafarers on an FOC ship affected by piracy during and after an attack
- ▶ Time Charter Arrangements
- ▶ Origin of ores
- ▶ Whales
- ▶ Heavy fuel oil (HFO)

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