# RISK GOVERNANCE FOR SEAFARERS SAFETY AND HEALTH PROTECTION

**CAROLYN A. E. GRAHAM,**
Faculty of Marine and Nautical Studies, Caribbean Maritime University, Palisadoes Park, Kingston, Jamaica.
e-mail: cgraham@faculty.cmu.edu.jm (presenter and correspondent author)
Orcid: 0000-0002-9640-715X

**KAHUINA H. MILLER,**
Faculty of Engineering and Applied Technology, Caribbean Maritime University, Palisadoes Park, Kingston, Jamaica.
e-mail: kmiller@faculty.cmu.edu.jm
Orcid: 0000-0002-0623-230X

**DERON D. WILSON,**
School of Business, Entrepreneurship & Management, University of the Commonwealth Caribbean (UCC), 17 Worthing Avenue, Kingston, Jamaica.
e-mail: dwilson@faculty.ucc.edu.jm
Orcid: 0000-0002-3971-2916

**ACKNOWLEDGMENTS**

The authors would like to thank Ms. Myrna Simmonds for her valuable assistance in editing drafts of this paper.

**Keywords**

Covid-19 Pandemic; Crew Change Crisis; Risk Governance Framework; Seafarers Safety and Health; Small Island Developing State

**Abstract**

The objective of this paper is to assess seafarers' safety and health management during the COVID-19 pandemic in the context of one Small Island Developing State. This assessment is done using the International Risk Governance Council, Risk Governance Framework as a benchmark for good risk governance. Seafarers are important to the global economy but are often treated unfairly. The recent global pandemic put a spotlight on long-stranding safety and health concerns which were exacerbated during the period leading to what was called the *crew change crisis*. This paper uses a qualitative approach employing interviews and a focus group with key participants, to explore Jamaica's response to the crisis, the effectiveness of this response and the lessons to be learnt. The findings showed that Jamaica's response was reactive and there were tensions between protecting the country's borders and assisting seafarers. The findings also showed that the effectiveness of Jamaica's response hinged on protecting the vulnerability of the country's supply chain rather than seafarers' safety and health as an end in itself. The paper argues that Jamaica's response might have been more proactive, providing a win-win outcome, if a systematic approach such as that offered by the Risk Governance Framework was adopted, particularly in the initial stages. The paper is significant as it suggests a policy direction that countries such as Jamaica can take in managing risks of a particular nature in a safety-critical occupation such as seafaring, where it is not normally applied.

## 1 INTRODUCTION

Seafaring is a safety-critical occupation where seafarers face a combination of work-risks arguably not seen in other occupations (Nielsen 1999). The maritime industry recognizes the high-level of risks for seafarers evidenced in its embrace of risk-management in the normal operational areas of shipping. However, to the authors'

knowledge, a broad systematic approach such as that offered by the International Risk Governance Council, Risk Governance Framework (IRGC-RGF) has not been discussed in the industry. National governments operationalize international maritime instruments according to their own regulatory systems, and so, much of the governance approach are local perhaps adapting different frameworks. In Jamaica, risk management is approached from individual organizations and sectors. The national approach relates to longstanding, somewhat predictable disasters such as hurricanes and floods and particular vector bourne diseases. However, something of the nature of the COVID-19 pandemic is unprecedented for the current governance system, more so, having to manage internal and external risks associated with the disaster. This paper draws on the case of Jamaica as a Small Island Developing State (SID) and assesses this country's response to the safety and health of seafarers during the pandemic, using the IRGC-RGF as a benchmark.

While the world is not new to disasters, their nature and impact are usually regional or country specific. It has been said that not since the *Great Flu* of 1918 has a pandemic of this nature been experienced. Reports from around the world suggested that countries were unprepared and developing countries in particular were impacted severely due to lack of resources and expertise in managing a disaster of this nature (Mondal et al, 2019). While countries relied on guidance from the responsible international organizations, execution on the ground vary according to government approach and resources at their disposal (HSBA 2022).

### 1.1 Jamaica in the International Maritime Landscape

Albeit relatively small in the context of maritime nations, Jamaica has a reasonably strong maritime history and plays an active role in international shipping. Jamaica is a member of the International Maritime Organization (IMO) and has, for example, ratified all key IMO conventions. That the Law of the Sea Convention was signed in Montego Bay, and the headquarters of the International Seabed Authority is located in Kingston, as well as the country's election to the IMO Council, further highlight its international recognition as an important maritime player.

Additionally, Jamaica has a maritime education and training institution, the Caribbean Maritime University, recognized by the IMO as upholding international training standards as set down in the Standards of Training, Certification and Watchkeeping Convention 1978, as amended (STCW). The country examines and certifies seafarers and issues certificates of competency to the highest levels and has reciprocal recognition with a number of advanced economies.

The sea is also crucial to Jamaica's economy as it supports trade, tourism, and overall economic growth. Jamaica's imports of goods and services make up 45.82% of its GDP, while its exports make up 27.53% (World Bank 2023). Jamaica's reliance on imports has both positive and negative impacts on its economy. Imports are necessary to sustain various sectors, facilitate industrial activities, and meet consumer demand, however, this reliance makes the country vulnerable to external shocks. Against this background, Jamaica's involvement in the crew change crisis presents a credible case for investigation and reflection regarding the future protection of seafarers' safety and health.

### 1.2 Rationale for the Paper

That the COVID-19 pandemic brought unprecedented hardships to life in the 21st century was clear (Committee for the Coordination of Statistical Activities (CCSA) 2020). It was particularly difficult on workers as their safety and health came under severe threat. Publications coming out of the International Labour Organization (ILO), for example, revealed that workers across the world in various industries were impacted in a combination of ways including economic and psychosocial, with varying degrees of severity (ILO 2021).

Seafarers were among the most severely impacted groups. Whether ashore or at sea, they faced many hardships due to lock-down measures imposed to manage the spread of the virus (Lopez-Lopez et al. 2022; Pauksztat et al., 2022). Those ashore lost income as they were prevented from joining vessels, while those at sea and due for leave, were forced to work well beyond their contracted periods in sub-standard conditions (HSBA 2022; Lopez-Lopez et al 2022). There were reports of port authorities prohibiting seafarers from going ashore (IMO, 2020); medical emergencies not being attended to, and even suicides (Stannard, 2020). This neglect and ill-treatment of seafarers resulted in what was called the *crew change crisis*.

As much as the world has largely returned to normal, it is important to reflect on how seafarers were treated during the pandemic and the effectiveness of measures that were adopted to bring relief. It is also important to evaluate actions taken so that in the event of another disaster of this nature, a crisis for seafarers can be averted. The IRGC-RGF is said to provide a robust approach to managing risks which can reduce their potentially negative impact (Florin et al., 2018).

The IRGC (2010 p. 4) defines risk governance as "the identification, assessment, management and communication of risks in a broad context. It includes the totality of actors, rules, conventions, processes and mechanisms concerned with how relevant risk information is collected, analysed and communicated, and how and by whom risk management decisions are taken." The framework has been recommended for use in other high-risk maritime situations (e.g. Goerlandt and Pelot, 2020) and has been empirically validated as adding value to

risk management, including cases of infectious disease (eg. Roodenrijs et al 2014) and the COVID-19 pandemic (eg. Li et al 2021). By drawing on this framework, this study examines why and how Jamaica responded to the crisis, the effectiveness of this response and lessons learnt when aligned with the governance principles of the IRGC-RGF.

The paper begins with a brief description of the *crew change crisis* to set the context. Next is a presentation of the IRGC-RGF followed by the methods. The findings and discussion and recommendations for future research conclude the paper.

## 2 THE CREW CHANGE CRISIS

Seafarers faced many hardships before the pandemic. A growing body of literature continues to point to the risks of working in the global merchant fleet and the challenges of addressing these risks towards protecting seafarers' safety and health (see for example Gekara and Sampson, 2021; Graham 2018; Walters and Bailey 2013). It is believed that the pandemic exacerbated many of the hardships, some of which persist even after a return to pre-pandemic activities (Happiness Index 2nd quarter 2023). This section of the paper is a reminder of the emergence of the *crew change crisis*, underscoring the argument that seafarers safety and health have been and remain at risk (Walters and Bailey 2013; Nielsen 1999) and the need for special protection.

Seafarers are invisible, which makes them vulnerable to negative safety and health outcomes at work (Graham 2021). This was a stark reality during the recent COVID-19 pandemic. On 25 September 2020 at an IMO forum, it was stated that: "some 400,000 seafarers from across the globe are now stranded on ships, continuing to work but unable to be relieved, in a deepening crew change crisis which threatens trade and maritime safety."

During the pandemic, while governments gave priority to some categories of workers as essential, it took a humanitarian crisis for seafarers to be given any special attention (discussed in Graham et al 2023). Many of their rights were suspended during the pandemic despite being recognized as a special category of workers in international instruments such as the Maritime Labour Convention, 2006 (MLC), the International Safety Management Code (ISM) and the International Ship and Port Facility Security Code (ISPS). The purpose of such recognition was for seafarers to be given special attention owing to the nature of their work. The pandemic was clearly one such occasion, yet the opposite was the reality.

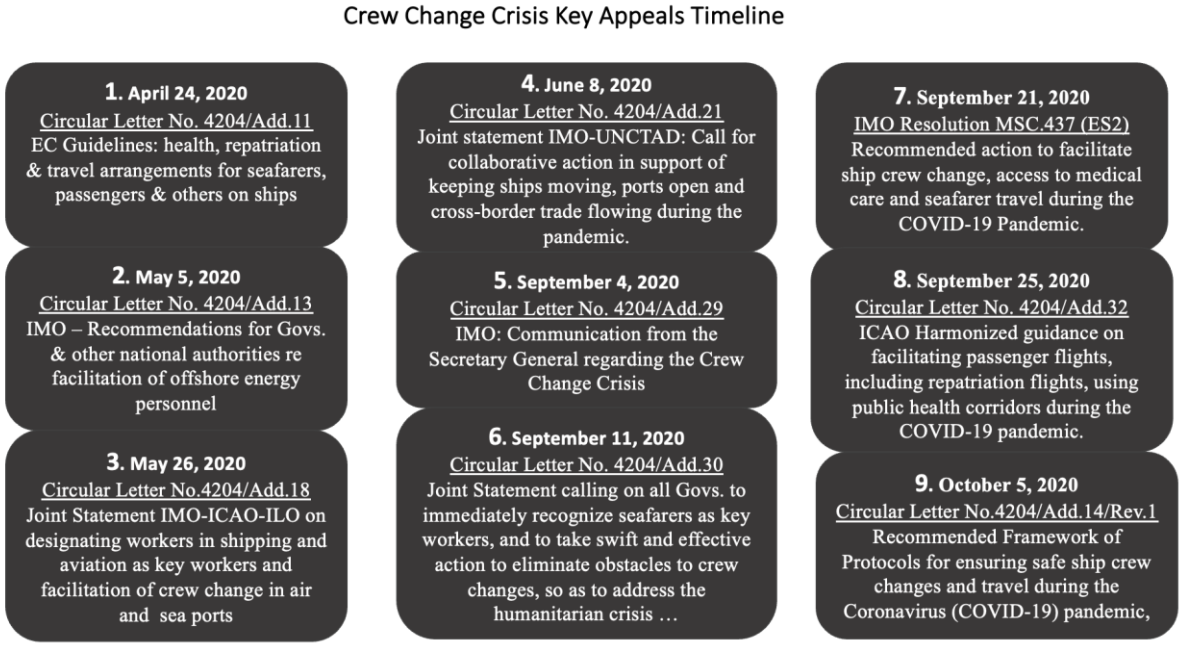
Actions taken to prevent the spread of the virus were without consideration for seafarers (HSBA 2022). An intervention by Captain Marzougui at the IMO Forum (September 25, 2020) is noteworthy:

> Not knowing when or if we will be returning home brings a severe mental toll on my crew and myself," Captain Marzougui said. "I would encourage each and every one of you to think of how you would feel, if you had to work every day, for 12 hours, with no weekends, without seeing your loved ones, and trapped at sea. Now add that you have to do that with no idea of when you will be repatriated.

However, shipping continued despite an initial reduction in trade (UNCTAD 2022). This turned out to be at the cost of seafarers' safety and health. Manning levels were reduced as crew change became difficult; hours of rest were ignored and replaced with non-paid hours of work; systems crucial for the safe operation of the world's shipping fleet were disregarded on a daily basis (De Beukelaer, 2021; HSBA, 2022). Overall, seafarers were under a significant deal of mental, physical, psychological, and even spiritual strain, which resulted in diminished well-being and mental health issues (Tang et al 2022), as well as an increased chance of accidents (De Beukelaer, 2021, HSBA, 2022).

Development of guidelines and regulations to protect seafarers came after the fact. The first reported case on board a cruise ship was as early as February 2020. Subsequently a series of circulars and guidelines were issued for the remainder of the year. These appeals to designate seafarers as essential workers seemed to have gone unheeded which necessitated continuous appeals on different aspects such as repatriation, shore leave for medical attention, facilitation to join vessels, protocols for onboard safety and those for ship to shore exchanges (see Lopez-Lopez et al 2022 for a detailed presentation). Until February 2022, the international community was still appealing for seafarers to be treated humanely (Graham et al 2023).

**Fig. 1** *Crew change crisis* key appeals timeline.



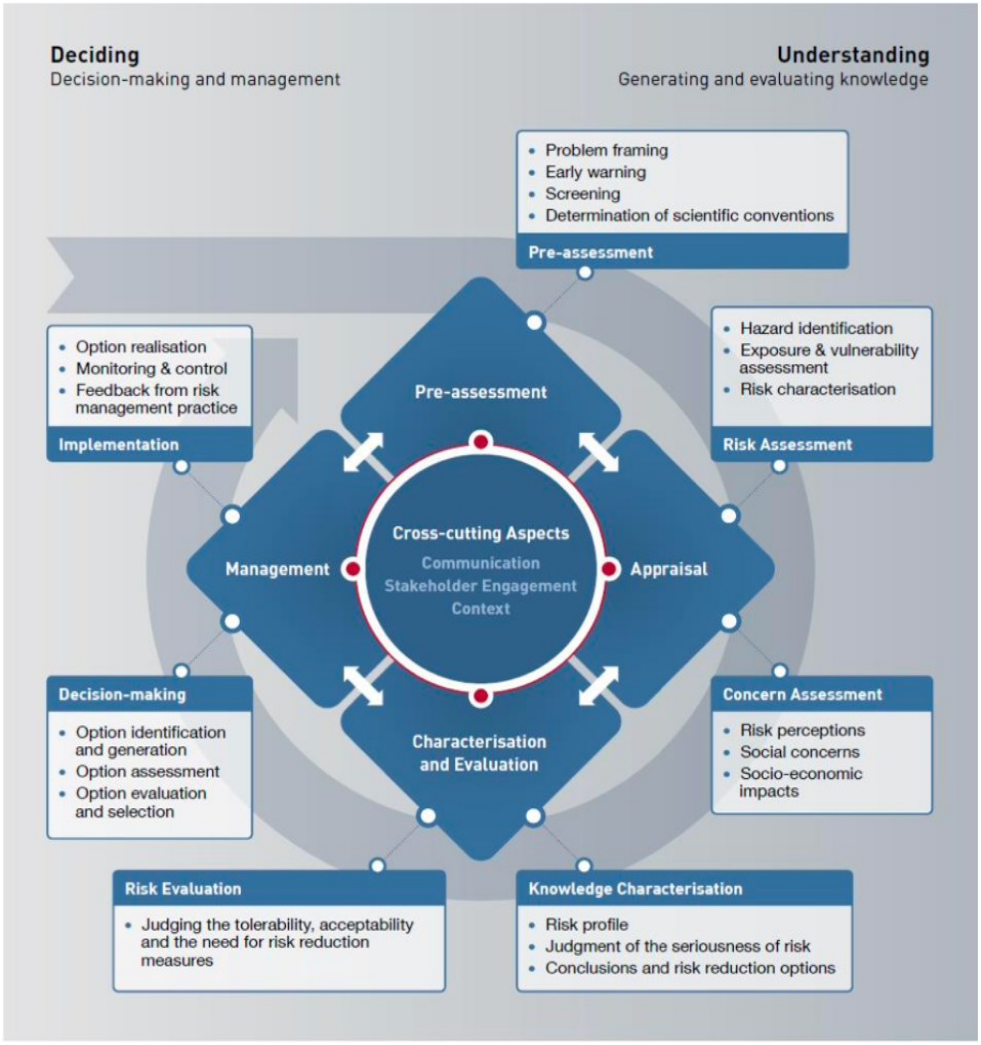

Source: Adapted from Lopez-Lopez et al. 2022

In a survey by Lloyd's Register (2020) on maritime workers' well-being during the pandemic, ships' staff perceptions of how they were treated were consistently more negative when compared with shore staff. One quotation from this survey sums up the disheartening experiences of seafarers, not due to the virus, but to the poor treatment received: "We work for each and every one of you to have food, water, fuel, cars, etc. We need support in this tough time but we were forgotten and abandoned by everybody." (Lloyds Register, 2020 para 5).

## 3 INTERNATIONAL RISK GOVERNANCE COUNCIL, RISK GOVERNANCE FRAMEWORK

The International Risk Governance Council's Risk Governance Framework (IRGC-RGF) is a comprehensive framework that provides a flexible, yet systematic and structured approach to risk governance. It can therefore be applied in a wide range of settings. The framework combines risk assessment, management and evaluation in a single framework. It is designed to optimize decision-making in complex, uncertain and/or ambiguous risk-events to ensure the well-being of individuals, society, and the environment (Risk Governance Centre 2017), which characterized the pandemic. Five linked steps make up the framework: Pre-assessment, Appraisal, Characterisation, Evaluation, and Management (see Figure 2).

**Fig. 2** Risk Governance Framework




Source: International Risk Governance Council. (2017). Introduction to the IRGC risk governance framework. www.irgc.org.

Renn and Klinke (2015) examined the IRGC-RGF and concluded that the conceptual foundations, principles, and application of the framework provided a comprehensive and coherent approach to risk governance. Other authors have investigated the use of the framework in complex situations. For example, Subramanian et al, (2016) examined case studies in various domains, including nanotechnology and sustainability, and suggested that the framework can be effectively applied to manage risks in this domain. Schmidt et al. (2013) also utilized the framework as a systematic strategy for analyzing, evaluating, and managing emerging health risks associated with vector-borne diseases. The feasibility and added value of the framework was assessed in the context of infectious disease control in Dutch case studies. The authors concluded that the framework provided added value to an already established system (Roodenrijs, et al. 2014).

Regarding the COVID-19 pandemic, Li et al.(2021), used the framework to examine China's response at the community level. The study examined the entire risk chain to determine ways to stop the virus's spread, relieve community pressure to fight it, and improve reaction times in the event of a potential recurrence. The IRGC-RGF proved useful in this context for an on-going and simultaneously evolving situation. Also, following an examination of the COVID-19 outbreak and the actions taken by different countries in reaction to it, suggestions were derived from the IRGC-RGF to enhance readiness for future similar emergencies (Collins et al, 2022).

Early analyses of the framework suggested that there were limitations and challenges. Klinke and Renn (2006) highlighted limitations with dealing with power, politics and values and suggested the need to integrate these into the framework. Boholm et. al. (2012) pointed to the framework's lack of attention to the contextual situatedness of risk and its management. These seemed to have been addressed somewhat in the evolution of the model by the cross-cutting aspects in the middle of the framework (see Figure 2). Notwithstanding these limitations, there appears to be more consensus on its application in diverse situations and its usefulness.

## 4 METHODOLOGY

The study takes a qualitative approach. Relatively few players were involved in initiating and establishing Jamaica's response to seafarers' plight and therefore did not lend itself to a quantitative or mixed approach. Also, examining the response required an indepth understanding, which was best achieved through a qualitative approach which explores and describes the activities and outcomes.

Data was gathered from key participants from two key organizations in Jamaica's maritime industry. The maritime administration, as the focal point of the IMO in Jamaica, has responsibility for ensuring Jamaica meets in international maritime obligations. Most of the activities surrounding the response to the *crew change crisis* were carried out by this organization. It was therefore the focal point for the field work. Also, the shipping association, representing shipping interests. These two organizations were identified in initial discussions as key stakeholders. Six key participants were interviewed from the administration and the shipping association. One focus group was conducted with staff of the administration. Interviews lasted approximately one hour. Participants were:

1. Very senior personnel in organization representing shipping interests
2. Very senior personnel in maritime administration
3. Senior Legal personnel in maritime administration
4. Senior technical personnel in the maritime administration
5. Middle manager in maritime administration
6. Middle manager in the maritime administration

The focus group consisted of 6 persons who were intimately involved in the initiation, development and executing of Jamaica's response. This included two directors responsible for administration, safety, environment and seafarers' certification; a legal officer; a middle information technology manager, one middle manager and one administrator responsible for seafarers' welfare. The focus group lasted approximately one and a half hours. Additional data was gathered from documents such as the regulations developed, reports of activities during that time, an electronic database and press releases by the government.

Data was collected between January to June 2022 where several visits were made to the maritime administration in particular, where the interviews were conducted and to view or get copies of documents. During this time the opportunity was also taken to have informal conversations and follow-up discussions on interview points for clarity.

## 5 FINDINGS AND DISCUSSION

This section presents the findings and discusses the main themes that emerged in assessing seafarers' safety and health management during the COVID-19 pandemic in the context of Jamaica's response to the *crew change crisis* and the effectiveness of this response. Three main reasons were found for the country's response: 1) international appeal, 2) the situation with its own nationals stuck on a cruise ship and 3) recognizing the country's vulnerability as a SID. The study found that on its own, protecting seafarers was not among the country's priorities. Where the country fell short was at the initial stages when compared with the IRGC-RGF framework.

### 5.1 Identification of the Risks: Reactive Response

The empirical findings and the literature revealed that by and large, countries were reactive to the pandemic. While the virus emerged in China and began spreading in late 2019, it appeared that countries were watching its progress and perhaps hoping that it would not reach their borders. It was 'business as usual' in many countries until their first cases were medically confirmed. Jamaica was no exception in this regard. Eventually, all countries were affected to varying degrees apparently depending on local management.

Jamaica recorded its first case on March 10, 2020 and measures were swift and immediate. mirroring what was done in other countries. Schools were immediately closed, work was suspended, with lockdowns and long curfew hours implemented, and early business closure, were put in place. Laws were developed and for swift

passage, added to an existing regulatory framework – the Disaster Risk Management Act. These laws developed in response to the pandemic, allowed for certain sectors and workers to be designated as essential workers and for community lockdowns and other protocols to be activated to allow for certain activities to continue albeit at reduced levels. However, in all of this, seafarers were not acknowledged nor provided for; locally or internationally.

**5.1.1 Pre-assessment and Appraisal Stages**

According to the IRGC-RGF (Figure 1), the pre-assessment and appraisal stages, are for framing the problem, early warning, identifying the hazard and doing risk assessment. This stage is important to set the tone and direction of the response and engage the relevant stakeholders. Table 1 describes Jamaica's response against the framework. The country's response was reactive and the elements suggested by the framework were absent at this stage. Seafarers were not considered in the initial response and were not designated as essential workers. This finding is similar to those of other countries (HSBA 2022). Concerns were raised prior to the pandemic becoming a global disaster on the general global unpreparedness for a pandemic. The maritime industry also had prior warning which went unheeded. According to HSBA (2022): "The devastating impact of the pandemic was unforeseen, but its potential effects were not entirely unexpected. The shipping industry had highlighted these in the previous decade, including through submissions to UN fora, following challenges faced by outbreaks of Ebola, Avian Flu, and SARS." (HSBA, 2022, p.3). Set alongside the IRGC-RGF, there was a lack of risk assessment in terms of the virus and its spread and the likely consequences of lockdown protocols to manage the virus.

Likewise, the findings of this study revealed that no formal risk assessment was conducted to ascertain the pandemic's effects on seafarers' OSH and their work to enable the development and deployment of suitable protocols. COVID-19 risks to seafarers came to the fore with the then emerging humanitarian crisis and the intervention of international stakeholders to appeal to countries to assist seafarers, as well as Jamaica's own nationals stuck at sea. Empirical evidence revealed that action in relation to seafarers OSH was more reactive:

> When the pandemic struck, all countries globally, didn't know what to do. The first instinct was to protect themselves so the barriers went up. They went up all over the world including Jamaica. But as we evidence the unfolding humanitarian crisis as it pertains to seafarers, and the international call from the IMO, the International Chamber of Shipping, the ITF, and so on, we recognized the plight of the seafarers, and although it was difficult, we thought it was important as the administration, to seek to somehow sensitize the government as to the necessity to make some kind of provision to allow seafarers to be able to go home or to join a ship. (Focus Group).

The focus group discussion was supported by individual participants. As one participant indicated:

> Our response was triggered by the IMO resolutions or circulars this would have prompted us. Also, we got in touch with Foreign Affairs regarding some Jamaicans that was on board that cruise ships who wanted to come off in Port Royal, and that never happened. That sparked some action…
>
> Formally though, what triggered our response was IMO resolutions, the first IMO publication for the need to facilitate crew changes because people were trapped on board. So, the IMO publication would have come out around May 2020 which prompted us to see if there was a mechanism to facilitate crew change on cargo ships. (Legal personnel).

As for seafarers, Jamaica's response began in June 2020 and represented one of the early responses to the international outcry. Nevertheless, the findings revealed a lack of proper pre-assessment and appraisal as per the framework. This resulted in Jamaican seafarers being stranded at sea and no clear idea as to actions to be taken for foreign seafarers on board at the island's commercial ports. In the initial stages, there were no protocols in place to receive Jamaican seafarers (even though they arrived in the country's waters) and those stuck in ports, as explained by the very senior administrator.

Under the IRGC-RGF, this 'knee-jerk' reaction would have been avoided. The pre-assessment stage provides a framework to assess and understand the problem and characterize the risks. Jamaica had ample time between December 2019 when COVID-19 had become international news and March 2020 when its first case was confirmed. Seafarers' vulnerability might have been brought to the attention of the duty holders through its tourism industry (for cruise shipping) and its education sector (for its maritime education and training institution). Seafaring cadets were on board ships and Jamaican seafarers were working in different parts of the world. Also, as a flag and port State, pre-assessment might have highlighted the vulnerability of its flagships and those calling at its ports. Yet this was not the case due to a lack of a structured and systematic approach as offered by the IRGC-RGF.

The findings as to why Jamaica responded to the seafarers' plight were consistent across interviews and informal discussions. Findings that emerged were that 1) the response was about the public outcry as it related to

the perceived abandonment of Jamaican seafarers on board the cruise ship; 2) to respond positively as a member State to the IMO's pleas to assist seafarers and; 3) to address the country's vulnerability as a SID. As one participant unequivocally stated, the response of one organization was less about seafarers OSH and more so to address the country's vulnerability due to its dependence on imports.

> Because during the pandemic there was a global outcry for help with the seafarers and of course that reached us. It reached us in two ways, by the general industry news, but it also reached us by way of the challenges being faced by our members…in that, many countries had not created protocols to deal with the crew being able to leave vessels and join vessels and there was a fear that if more countries did not rise to the occasion and seek ways of dealing with it, countries like ours would be at a disadvantage (Very senior personnel)

At this stage, risks were appraised in two opposing ways, firstly, Jamaica is an island State and depends on sea transportation, and therefore, as was pointed out in the interviews, the country could be at a disadvantage in getting needed food and medicine. This was a realization after some maritime stakeholders began voicing concerns. Secondly, the risks to the country for allowing seafarers within its borders. There was tension between these two needs and therefore it took some convincing for the government to designate seafarers as essential workers and allow repatriation and crew change across its borders. It was found that:

> …they [seafarers] are critical to the logistics chain, supply chain and we recognize that despite the COVID pandemic and the issues we were facing with that, trade needed to continue as we needed medicine as well as food. So that was one good point [to make to the government] and we engage in several discussions with the government…each time a circular came out from the IMO with various pleadings (if you wish) [see Figure 1] we would prepare something to the [local] authorities, outlining those things, including the persistent cry to designate seafarers as essential workers (Focus Group).

The findings therefore showed that while consideration was given to the humanitarian crisis seafarers faced by those who perhaps understood seafaring, the assistance given was not an end in itself and the Jamaican government had to be convinced of the need to designate seafarers as essential workers so that special mechanisms could apply to them. This finding is supported by the literature which seems to suggest that addressing seafarers' concerns was also a means to an end. With the recognition that the movement of essential items such as medicine, medical equipment and agricultural products across borders was imperative, G20 countries cooperated to do this (Doumbia-Henry 2020).

Set against the IRGC-RGF, pre-assessment, appraisal, and evaluation were absent for Jamaica. It appears to be a case of make-up-as-you-go-along, guided by the general approach recommended from the international community but which did not allow for a systematic response. As the findings showed, when some evaluation and assessment began taking place for land-based industries, it was to allow essential health care workers to attend to basic human needs. Ironically, seafarers remained invisible although they were responsible for keeping global trade afloat, as aircraft were grounded for the most part. A risk assessment prior to the first case being identified in Jamaica, might have facilitated a more informed and comprehensive response.

**Summary of Findings Against the IRGC Risk Governance Framework**

| IRGC Risk Governance Framework (IRGC 2017) | FINDINGS: Jamaica's Response to the Crew Change Crisis |
|---|---|
| **Pre-assessment:** *Problem framing. Early warning and monitoring. Screening* and *determination of scientific conventions.* | **Reactive**: The response was in reaction to the international appeal to assist seafarers and a crisis of its own nationals stuck at sea that came to the region and workers were not able to disembark as no measures to receive them were in place. Common understanding was absent in the initial stages as bodies outside the maritime administration that had responsibility to enact laws and those that control the borders had to be convinced of the need to assist seafarers. Early warning was given in that the virus was spreading across the world yet it was not act upon until the first case was medically confirmed. |
| **Appraisal:** *Hazard identification; Exposure and vulnerability assessment; Risk characterisation* | The hazard was known as the virus from international press, but as no pre-assessment took place, the exposure and vulnerability assessment for seafarers' safety and health were not effectively appraised and identified. |

| | |
|---|---|
| **Characterisation and Evaluation:** *Risk profile; Judgement of the seriousness of the risk; Need for risk reduction.* | The risk to seafarers was not initially characterised. From all indications the pandemic had the elements of complexity, uncertainty and ambiguity. The risk to seafarers was evaluated in the context of Jamaica's supply chain vulnerability generally, rather than their own safety and health. This risk to seafarers was characterised after the fact when the international appeal to assist seafarers went out. |
| Management: *Risk evaluation; Decision making.* | Risks had to be framed in relation to the consequences for the country to convince the government to designate seafarers as essential workers to facilitate the country becoming a hub for crew change. Protocols, laws, and an electronic system were developed to manage the movement of seafarers through Jamaica's borders. Challenges that emerged were effectively managed, particularly as time went by and those involved developed the necessary experience. |
| Cross-cutting Aspects: *Communication; Stakeholder engagement context* | Key stakeholders cooperated to manage the crisis after initial delays. Meetings were held and communication took place for the most part although not without challenges. Seafarers' representation was also missing. |

**Table 1** Summary of findings on Jamaica's response to the crew change crisis benchmarked against the IRGC-RGF.

### 5.2 Management of the Risks

Risk management involves taking steps to reduce risks to make them more manageable after decision-makers have determined whether a risk is acceptable or not. It involves creating, deciding on, and putting into practice choices to lessen the risk's negative effects (IRGC, 2017). The findings showed that less tension existed at this stage with government. The maritime administration became the focal point for implementing a system and managing facilitation of seafarers giving rise to Jamaica becoming a *crew change hub*.

At this stage, the inter-agency collaborative aspects at the centre of the IRGC-RGF framework were highlighted. The key stakeholders worked together after an initial reactive and piecemeal approach, to establish protocols that were made into law and operationalized.

> …our shipping industry also saw the need for something to be done and they in fact prepared a paper and shared it with us [the administration]… in which they proposed how it [facilitating seafarers] could be done in terms of a designated corridor because we had started to do a *resilient corridor* for tourism and so [a document] was prepared by the shipping association which we also looked at and give our feedback on and gave some comments based on what we know. And this also went to other entities in the industry. (Focus Group).

The analysis of the invisibility of seafarers is of note. The findings indicated that arrangements were in place for Jamaican nationals, business people, and tourists; but not seafarers. As one participant indicated, when the consideration for seafarers was brought to the fore, it was evident that not much was needed but to apply the existing mechanism for other groups with necessary adjustments for seafarers. (This might have been identified had a pre-assessment been conducted). This regime to facilitate seafarers was operationalized

> … you had 3 categories of persons – Jamaican nationals; businessmen; tourists. These are seafarers from cargo ships as there was no cruise shipping. So they couldn't fall into any of those categories, so this was a specially carved out corridor for them. Because if you look at the Order it says that they do not have to comply with any of the health department's requirements, no testing, or whatever…(Very senior personnel).

Managing the *crew change hub* efficiently and effectively presented challenges; perhaps as a consequence of missing the first stages suggested by the RGF. If adequate risk assessment had taken place and properly appraised and evaluated, to include all stakeholders, challenges at this stage might have been minimized.

Rapid development of an electronic system to screen seafarers showed that expeditious action was required. However, it was reported that some users attempted to circumvent the system, and non-adherence to stipulations such as lead time for application and provision of documentation for verification purposes as outlined

in the law, presented challenges. Operating the hub therefore proved stressful initially. There were also challenges for existing staff who were the administrators and also required to carry out regular duties. The hub was a 24-hour operation, seven days a week, reflective of shipping as an international business but also reflective of the crisis. Participants who operated the system reported being exhausted as the system required constant monitoring and communication among responsible organizations to do the various vetting and approval to allow seafarers to enter the country's borders unencumbered.

One limitation of the study was that no shipping agent or seafarers who had been assisted participated. Their participation would have given deeper insights into the management of the crisis. It emerged from one key participant and informal discussions that the system was welcomed and over time operated smoothly. A key motivation for this effectiveness emerged as the financial gains to the agents. To use Jamaica as a hub, an application had to be made, and verification that the applicants were seafarers had to be done. The relevant organizations had to verify the authenticity of the various documents including health documents. Arrangements also had to be made for transfers and accommodation. These attracted costs and activities were mainly done by shipping agents. Again, the findings indicated that the system, once up and running, worked efficiently as a means to an end, rather than an end in itself to alleviate the risks to seafarers OSH. In total 6104 seafarers were assisted (see Table 2).

**Number of Seafarers Facilitated Across Jamaica's Borders During the COVID-19 Pandemic**

| CREW CHANGE PROCESSED BY MONTHS | | | |
|---|---|---|---|
| **Months** | **2020** | **2021** | **2022** |
| January | | 222 | 263 |
| February | | 220 | 518 |
| March | | 204 | |
| April | | 295 | |
| May | | 296 | |
| June | | 342 | |
| July | 88 | 315 | |
| August | 222 | 389 | |
| September | 367 | 306 | |
| October | 456 | 315 | |
| November | 243 | 370 | |
| December | 374 | 299 | |
| **TOTAL ISSUED per year** | **1750** | **3573** | **781** |
| **Running total** | **1750** | **5323** | **6104** |

**Table 2** Seafarers Assisted by Months. Source: The Maritime Authority of Jamaica Database

While the findings suggest that Jamaica could have been better prepared, particularly in the initial stages, best practices were identified. Relatively early response to the international call allowed protocols and polices to be developed and activated. Duration of the virus was not known at that time, however history has shown that this continued into 2022, and is still present. Various circulars throughout the period, provided evidence that seafarers continued to be neglected (see eg Lopez-Lopez 2022). Also, seafarers were not required to be quarantined in Jamaica, but used a resilient corridor for movement. According to the law, once documents were verified on pre-

arrival, seafarers were not required to undergo a health or risk assessment. Additionally, creating a 24-hr system shows sensitivity to industry needs. Risk assessment might have allowed for additional staff to reduce the work-load on existing staff.

## 6 CONCLUSION

This study assessed seafarers' safety and health management during the COVID-19 pandemic in the context of one Small Island Developing State using the IRGC-RGF as a benchmark. Those who favour the IRGC-RGF framework spoke about its ability to assist in a crisis. This argument has much merit. The framework presents a reasonable approach to risk governance. Additionally, the criticism of its lack of attention to power differentials might be noted. However, these might be addressed in the pre-assessment stages so that clear lines of command, resource allocation and naming process owners can be done. Here, the importance of the centre of the framework – cross-cutting aspects: communication, stakeholder engagement– cannot be overstated. This is rightly the core of the framework as it drives other sections. If communication fails or the relevant stakeholders are not sufficiently engaged, the entire framework collapses. Jamaica appears to have managed some of this aspect successfully. However, the lack of direct engagement of seafarers' representatives and shipping agents might have resulted in some challenges.

In conclusion, this study found that reactive rather than proactive actions led to a piecemeal approach to managing the pandemic in the initial stages; particularly risks to seafarers OSH. They were poorly treated and it took a crisis for them to be designated as key workers and given special consideration. Even then, the response across the globe was not uniformed. As Jamaica's response mirrored what happened elsewhere, this case is useful for highlighting the importance of a coordinated national approach with links to a regional and international framework. Additional vulnerability as a SID makes this an imperative. An approach which adopts risk governance seems likely to be able to assist to arrive at a win-win outcome. Applying such consideration for seafarers is not far-fetched and the pandemic showed how essential yet vulnerable they are.

Further research into the experiences of seafarers during the pandemic is necessary. As the world has returned to normal, qualitative reflective studies will assist in gaining a deeper understanding of the effects of the pandemic and shed light on the mistakes made and best practices. Best practices can be formulated into policies going forward. More research is also needed into government responses elsewhere. Why do government policymakers consistently ignore the plight of seafarers despite signing on to international conventions? The study also highlights the lack of representation for seafarers at national levels. Perhaps if Jamaica had an active seafarers' union that participates nationally according to the tripartite principles of the MLC, this might have resulted in a better approach to safeguard seafarers' safety and health.

Action is needed to ensure that a crisis of this nature does not recur. The international regulatory regime for seafarers' safety and health protection proved to be weak in the event of the pandemic, as evidenced by the *crew change crisis*. Greater effectiveness might have been possible if a governance approach, such as that provided by the IRGC-RGC was embedded in disaster response policies at the national level. "Experience teaches wisdom" and much wisdom should have been gained from the experiences of the pandemic. While the paper is not suggesting that the IRGC-RGF is a silver bullet, it suggests better governance, and in this way, helps to limit negative outcomes.

## 6 REFERENCES


Boholm, A.; Corvellec, H & Karlsson, M. The practice of risk governance: Lessons from the field. *Journal of Risk Research* [online]. 2012, vol. 15, no. 1, p. 1-20[Accessed: 20 December 2023]. Available at: https://doi.org/10.1080/13669877.2011.587886.

Collins, A.; Florin, M. V. & Renn, O. COVID-19 risk governance: Drivers, responses and lessons to be learned. *Journal of Risk Research.* [online]. 2022, vol. 23, no. 7-8, pp. 241-250. [Accessed: 20 December 2023]. Available at: https://doi.org/10.1080/13669877.2020.1760332.

Cucinelli, J.; Goerlandt, F. & Pelot, R. Exploring risk governance deficits of maritime search and rescue in Canada. *Marine Policy* [online]. 2023, vol. 149, 105511[Accessed: 20 December 2023]. Available at: https://doi.org/10.1016/j.marpol.2023.105511.

Committee for the Coordination of Statistical Activities (CCSA). *How COVID-19 is changing the world: A statistical perspective. Volume II* [online]. Committee for the Coordination of Statistical Activities, 2020[Accessed: 30 November 2023] Available at: https://www.wto.org/english/tratop_e/covid19_e/ccsa_publication_vol2_e.pdf.

Doumbia–Henry, C. Shipping and COVID-19: protecting seafarers as frontline workers. *WMU Journal of Maritime Affairs* [online]. 2020, vol. 19, no. 3, p. 279–293[Accessed: 20 December 2023]. Available at: https://doi.org/10.1007/s13437-020-00217-9.

De Beukelaer, C. COVID-19 border closures cause humanitarian crew change crisis at sea. *Marine Policy* [online]. 2021, vol. 132, 104661[Accessed: 1 October 2023]. Available at: https://doi: 10.1016/j.marpol.2021.104661.

Florin, T. A.; Brokamp, C.; Mantyla, R.; DePaoli, B.; Ruddy, R. M.; Shah, S. S. & Ambroggio, L. Validation of the Pediatric Infectious Diseases Society–Infectious Diseases Society of America severity Criteria in Children with community-acquired pneumonia. *Clinical Infectious Diseases* [online]. 2018, vol. 67 no. 1, p. 112–119 [Accessed: 20 December 2023]. Available at: https://doi.org/10.1093/cid/ciy031.

Gekara V O & Sampson H (Editors). *The world of the seafarer: Qualitative accounts of working in the global shipping industry* [online]. WMU studies in Maritime Affairs. Cham, Switzerland: Springer, 2021, vol. 9[Accessed: 6 May 2024]. Available at: https://link.springer.com/book/10.1007/978-3-030-49825-2.

Graham, C.A.E. *Developing labour standards for representation on ships* [online]. Doctoral thesis, Cardiff University, School of Social Sciences, Seafarers International Research Centre, 2018[Accessed: 6 May 2024]. Available at: https://tuit.cat/ahk63.

Graham, C.A.E. Seafarers' invisibility renders them forgotten. In: *Splash24/7: Global Maritime Shipping News* [online]. Singapore: Asia Shipping Media Pte Ltd , 2021[Accessed: 6 May 2024]. Available at: https://splash247.com/seafarers-invisibility-renders-them-forgotten/.

Graham, C.A.E.; Wilson, DD.; Doyley D M. The long-term treatment of seafarers: Creating a new normal. In: N. Senbursa & L Tavacioglu (Eds). *Maritime Wellbeing*. Hauppauge, NY: Nova Science Publishers. 2023. ISBN: 979-8-88697-963-3.

HSBA. *The perfect storm: The impact of COVID-19 on shipping, seafarers and maritime labour markets. Lessons learned and practical solutions for the future* [online]. HSBA, 2022[Accessed: 6 May 2024]. Available at: https://www.ics-shipping.org/publication/the-perfect-storm-the-impact-of-covid-19-on-shipping-seafarers-and-maritime-labour-markets/.

International Labour Organization. *ILO Monitor: COVID-19 and the world of work: Eight edition: updated estimates and analysis* [online]. Geneva: ILO, 2021[Accessed: 6 May 2024]. Available at: https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/documents/briefingnote/wcms_824092.pdf.

IMO. *400,000 seafarers stuck at sea as crew change crisis deepens* [online]. London: IMO, 2020[Accessed: 6 May 2024]. Available at: https://tuit.cat/gMVz8.

IRGC. *Risk governance deficits: Analysis, illustration and recommendations: Policy brief* [online]. Geneva: International Risk Governance Council, 2010. ISBN 978-2-9700672-0-7[Accessed: 6 May 2024]. Available at: https://irgc.org/wp-content/uploads/2018/09/IRGC_RiskGovernanceDeficits_PolicyBrief20101.pdf.

IRGC. *IRGC Risk governance framework* [online]. Geneva: International Risk Governance Council, 2017[Accessed: 6 May 2024]. Available at: https://irgc.org/risk-governance/irgc-risk-governance-framework/.

Li, H.; Zhang, L.; Wang, L. & Xu, T. Regular COVID-19 Pandemic containment in communities: A risk governance perspective. *Risk Management and Healthcare Policy* [online]. 2021, vol 14, p. 4003-4011. [Accessed: 15 December, 2023]. Available at: https://www.tandfonline.com/doi/full/10.2147/RMHP.S316509.

Lloyd's Register. *Crew feel 'forgotten and abandoned' LR survey finds* [online]. London: Lloyd's Register Group Services Limited, 2020[Accessed: 6 May 2024]. Available at: https://www.lr.org/en/latest-news/crew-feel-forgotten-and-abandoned-lr-survey-finds/.

Lopez-Lopez, M., De La Campa Portela, R., De Los Angeles Bouza Prego, M. & Sanchez Giron, R. (2022). Covid-19 Control Measures and its Impact on Seafarers' Mental Health. [online]. ***MT'22***. *9th International Conference on Maritime Transport* Barcelona, June 27-28, 2022.[Accessed: 20 December 2023]. Available at: https://upcommons.upc.edu/bitstream/handle/2117/369115/OK_30_Lopez_et_al-1.docx.pdf?sequence=1&isAllowed=y.

Mondal, T.; Boral, N.; Bhattacharya, I;, Das, J. & Pramanik, P. Distribution of deficient resources in disaster response situation using particle swarm optimization. *International Journal of Disaster Risk Reduction* [online], 2019, vol. 41, 101308[Accessed: 20 December 2023]. Available at: https://doi.org/10.1016/j.ijdrr.2019.101308.

Nielsen, D. Deaths at sea: a study of fatalities on board Hong Kong-registered merchant ships, 1986-95. *Safety Science* [online]. 1999, vol 32, no. 2-3, p. 121-141[Accessed: 10 November 2023). Available at: https://doi.org/10.1016/S0925-7535(99)00016-8.

Pauksztat, B.; Grech, M. R. & Kitada, M. The impact of the COVID-19 pandemic on seafarers' mental health and chronic fatigue: Beneficial effects of onboard peer support, external support and Internet access. *Marine Policy* [online]. 2022, vol. 137, 104942[Accessed: 10 November 2023]. Available at: https://doi.org/10.1016/j.marpol.2021.104942.

Renn, O. *White paper on risk governance towards and integrative approach* [online]. Geneva: International Risk Governance Council, 2005[Accessed: 6 May 2024]. Available at: https://irgc.org/wp-content/uploads/2018/09/IRGC_WP_No_1_Risk_Governance__reprinted_version_3.pdf.

Renn, O. & Klinke, A. Risk governance and resilience: New approaches to cope with uncertainty and ambiguity. In: Fra.Paleo, U. (eds). *Risk Governance* [online]. Dordrecht: Springer, 2015, p. 19–41[Accessed: 10 November 2023] Available at:. https://doi.org/10.1007/978-94-017-9328-5_2.

Roodenrijs, J. C. M.; Kraaij-Dirkzwager, M. M.; van den Kerkhof, J. H. T. C. & Runhaar, H. A. C. Risk governance for infectious diseases: exploring the feasibility and added value of the IRGC-framework for Dutch infectious disease control. *Journal of Risk Research* [online]. 2014, vol. 17, no. 9, p. 1161–1182[Accessed: 1 December, 2023]. Available at: https://doi.org/10.1080/13669877.2013.875935

Schmidt, K.; Dressel, K. M.; Niedrig, M.; Mertens, M.; Schüle, S. A. & Groschup, M. H. Public Health and vector-borne diseases – A new concept for risk governance. *Zoonoses and Public Health* [online]. 2013, vol. 60, no. 8, p. 528–538[Accessed: 10 November, 2023]. Available at: https://doi.org/10.1111/zph.12045.

Stannard, S. L. COVID-19 in the maritime setting: the challenges, regulations and the international response. *International Maritime Health* [online]. 2020, vol 71, no. 2, p. 85–90[Accessed: 10 November 2023]. Available at: https://doi.org/10.5603/imh.2020.0016.

Subramanian, V.; Semenzin, E.; Hristozov, D.; Zabeo, A.; Malsch, I.; McAlea, E. M.; Murphy, F.; Mullins, M.; Van Harmelen, T.; Ligthart, T.; Linkov, I. & Marcomini, A. Sustainable nanotechnology decision support

system: bridging risk management, sustainable innovation and risk governance. *Journal of Nanoparticle Research* [online]. 2016, vol. 18, no. 4[Accessed: 10 November, 2023]. Available at: https://doi.org/10.1007/s11051-016-3375-4.

Tang, L.; Abila, S. S.; Kitada, M.; Malecosio, S. & Montes, K. K. Seafarers' mental health during the COVID-19 pandemic: An examination of current supportive measures and their perceived effectiveness. *Marine Policy* [online]. 2022, vol. 145, 105276[Accessed: 3 November 2023]. Available at: https://doi.org/10.1016/j.marpol.2022.105276.

UNCTAD. *Global Trade Update: February 2022* [online]. UNCTAD – Division on International Trade and Commodities, 2022[Accessed: 6 May 2024]. Available at: https://unctad.org/webflyer/global-trade-update-february-2022.

Walters, D. & Bailey, N. *Lives in peril: Profit or safety in the global maritime industry?*. London: Palgrave Macmillan, 2013. ISBN 978-0-230-57383-3.

World Bank. *Jamaica Trade Statistics: Exports, imports, products, tariffs, GDP and related development indicator* [online]. The World Bank, 2023[Accessed: 6 May 2024]. Available at: https://tuit.cat/0boCA.