Understanding culture in the context of emergencies: A step towards a more effective international spill response

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ABSTRACT

Following an incident, the spill response community is subject to intense pressure where uncertainty is prevalent, yet strong work relationships are often expected to be built on an ad-hoc basis amid intense time pressure. Building trust and adaptability are therefore essential to create an environment of open communication and effective cooperation between stakeholders, leading to an effective response.

Large-scale pollution events often necessitate the participation of international organisations, requiring an awareness of the cultural dimensions of the incident location. For instance, understanding the preferred style for decision-making, behaviour towards risk and uncertainty, and the level of trust in institutions can help in shaping an engagement strategy compatible with the national culture. With a common understanding of these dimensions and the local context, responders from various cultural and training backgrounds can better work towards an effective response. Through case studies, this paper explores how culture may influence the efficiency of a response, with particular focus on the role of international experts and their integration into the local response structure. By exploring cultural dimension frameworks, this analysis aims at helping international experts increase their effectiveness through an increased awareness of cultural dimensions.

INTRODUCTION

Recent marine spills such as the WAKASHIO incident in Mauritius (2020), the X-PRESS PEARL incident in Sri Lanka (2021), and the Callao oil spill in Peru (2022) highlight the potential environmental and economic repercussions of large-scale spill events. Evaluating the effectiveness of the response to these incidents involves considering factors such as response plan implementation, resource management, and international collaboration, all of which align with established technical pillars for managing marine pollution incidents. However, effective incident management goes beyond technical aspects, as it requires understanding human dynamics, such as decision making and conflict management. Neglecting this aspect can pose challenges to the implementation of technically oriented solutions and shift typical measures of success.

This paper emphasises the significance of national culture in shaping responses to environmental emergencies like marine pollution incidents. Despite the international spill response community's multicultural composition, cultural influences on response management are often overlooked. This paper explores how national culture impacts decision-making, trust-building, and conflict management in spill response, aiming to spark dialogue within the spill response community to improve global management capacity.

Note to the reader. *The observations presented are based on the authors' experiences, research, and literature consulted. The authors acknowledge their cultural standpoint may have shaped the paper's content, emphasising that these observations are illustrative and indicative of possible patterns that may vary depending on the context and individual. Readers are encouraged to be aware of their own cultural standpoint and seek multiple sources for a comprehensive understanding of encountered cultural differences and similarities.*

CULTURAL DIMENSIONS AND INCIDENT MANAGEMENT

Culture significantly shapes behaviour and emotions in emergencies (Mesquita et al., 2017). Therefore, it is essential for experts who are deployed internationally to adapt to the cultural context they encounter. In marine pollution incidents, the need for cooperation among organisations with diverse professional and regulatory affiliations highlights the importance of two distinct layers of culture: national culture and organisational culture. The latter, particularly relevant when considering the role of maritime and environmental authorities in incident management strategies, remains underexplored in the relevant literature. Although generalising organisational culture among these authorities is challenging due to variability influenced by national culture and regulatory mandates, ITOPF's experience reveals common trends. Environmental authorities often prioritise precautionary principles, with decision-making processes involving extensive stakeholder consultation and emphasis on regulatory compliance and adherence to environmental standards. Conversely, maritime authorities typically prioritise operational effectiveness, safety, and security at sea, characterised by hierarchical structures and a focus on immediate action. These differing approaches may lead to conflicts under time constraints and political pressure.

On the contrary, national culture can be described widely using available frameworks and datasets. Thus, this paper will primarily focus on national culture using two widely referenced frameworks for understanding cultural dimensions: Hofstede's Cultural Dimensions Theory, developed from extensive research since the 1960s (Figure 1A), and Erin Meyer's Culture Map, introduced in 2014 (Figure 1B). The rationale for choosing these frameworks is that using multiple cultural models concurrently can help overcome oversimplification, and both models are internationally recognised for their effectiveness in understanding cultural differences.

The following sections shed light on the influence of national culture on three critical aspects of spill response: conflict management, trust-building, and decision-making. Given the

well-established nature of Hofstede's and Meyer's frameworks, this paper does not provide a comprehensive explanation. Instead, it aims to offer international responders a practical way to understand culture and adjust their ways of working to become more effective.

Figure 1. (A) Geert Hofstede's cultural dimensions framework and (B) Erin Meyer's Culture Map framework

Conflict management

When technical experts are deployed internationally, they often encounter challenging disagreements or tensions with new stakeholders. Both the Meyer and Hofstede frameworks address conflict, recognising that cultural values influence how individuals navigate conflicts (Gunkel et al., 2016). Meyer's Disagreeing dimension (Figure 2) explores how cultures perceive disagreement and debate, considering factors like "losing face" and comfort levels

with direct disagreement. Similarly, Meyer's Evaluating dimension (Figure 3) assesses a culture's preference for criticism, distinguishing between frank and diplomatic negative feedback.

Figure 2. Meyer's Disagreeing dimension (Meyer, 2016)

Figure 3. Meyer's Evaluating dimension (Meyer, 2016)

Cultural preferences in handling disagreement and delivering feedback significantly impact cross-cultural meetings. While some cultures value open discussion and feedback in meetings, others prioritise formalising decisions beforehand and avoiding confrontational debates. Misalignment between cultural expectations and meeting dynamics can lead to perceived ineffectiveness. Factors like power distance, preferred feedback styles, and expression of disagreement often fuel conflicts in meetings, shaping subsequent decision-making steps.

Literature suggests five conflict management styles (Rahim, 1983; Tsai & Chi, 2012) driven by concern for goals and/or relationships.

1. Collaborating involves problem-solving with a high focus on both achieving goals and maintaining relationships. It fosters open communication, information exchange, and thorough examination of differences to reach a mutually acceptable solution.
2. Dominating, characterised by forcing one's own goals with little regard for relationships, prioritises high goal orientation over relationship orientation, often at the expense of damaging relationships.
3. Compromising aims to balance goals and relationships moderately. It involves give-and-take negotiations where both parties make concessions to reach a mutually acceptable decision.
4. Avoiding, with low emphasis on both goals and relationships, involves postponing or evading the problem, resulting in unresolved issues.
5. Accommodating, focusing on maintaining relationships over achieving goals, entails yielding to the concerns of the other party even if it means sacrificing one's own goals. It emphasises common ground and a compliant attitude to preserve relationships.

Collaboration, typically considered the most effective approach, may not universally align with cultural preferences. Holt & DeVore (2005) highlight cultural differences in conflict styles, particularly in relation to Hofstede's Individualism dimension. Individualistic societies tend toward task-oriented approaches (dominating, collaborating), while collectivistic societies favour people-oriented approaches (avoiding, compromising).

Gunkel et al. (2016) highlight a correlation between hierarchical societies and the dominating or avoiding conflict management approaches, contrasting with more egalitarian cultures, which tend to prefer collaborating, accommodating, and compromising approaches. Additionally, societies with higher Motivation towards achievement and success (MAS) scores prioritise achievement and success, favouring dominating or collaborating approaches, whereas those with lower MAS scores often opt for negotiation, prioritising relationships and

favouring withdrawing approaches (i.e. avoiding and accommodating) (Gunkel et al., 2016; Tsai & Chi, 2012).

Interestingly, the successful implementation of the Incident Command System (ICS), an American system, relies on collaboration among its various sections and commanders, as well as between the incident site and the emergency operations centre (Tsai & Chi, 2012). Given that the United States (US) is one of the most individualistic countries globally (Meyer, 2016), it's logical that ICS inherently emphasises collaboration as a key component for its functionality. However, this also highlights potential complications in implementing ICS internationally, especially in contexts where other conflict management approaches may be more culturally ingrained.

Trust building

Trust plays a crucial role in the context of emergency management, both at the personal and organisational levels, as incidents involve risk and uncertainty. Understanding trust as the willingness to be vulnerable (Roud & Gausdal, 2019), a high level of trust can reduce conflict, and facilitate cooperation and open communication, which are essential to an effective response. On the contrary, personal, and interagency mistrust can lead to duplication of efforts, information silos, and delayed decision-making processes. However, establishing trust swiftly in the context of emergency collaboration with unfamiliar international stakeholders poses a unique challenge. Given that the perception and manifestation of trust are culturally influenced, the question arises: how can trust be quickly established in an emergency?

Meyer's Trusting dimension (Figure 4) distinguishes between affective and cognitive trust preferences across cultures. Relationship-based cultures value personal connections, requiring time to develop trust, while task-based cultures prioritise competence and are comfortable with new collaborations. For international experts, arriving in a country for an

incident where affective trust prevails poses a challenge if no prior relationships have been established during pre-spill capacity building.

Figure 4. Meyer's Trusting dimension (Meyer, 2016)

This underscores the necessity of ongoing relationship-building with authorities across the world during peacetime (Roud & Gausdal, 2019), a practice acknowledged by the international spill response community and partially integrated into their organisational strategies. It also highlights the differing perceptions of effectiveness in interactions during incidents, depending on whether stakeholders prioritise relationships or tasks. For example, an extended meal break during joint surveys may be seen as inefficient from a task-oriented viewpoint but signifies cooperation and openness on a personal level for those prioritising relationships.

Similarly, the trusting dimension illuminates the challenges faced by international stakeholders in effectively integrating into the operations and decision-making of marine pollution incidents, particularly in regions like Asia and the Middle East. In these societies, business relationships are akin to personal relationships and collaborating with an international organisation may imply severing ties with trusted local counterparts. This shift is considered inconceivable from a relationship-based perspective. Without long-term and continuous relationship building efforts by western, task-oriented organisations, the situation with authorities and key stakeholders in relationship-oriented societies is unlikely to change.

Hofstede's framework reveals that in cultures with high power distance, trust is fostered through respect for authority and adherence to established rules, contrasting with lower power distance cultures that value open communication and collaboration. Individualistic cultures prioritise personal responsibility and autonomy, while collectivistic cultures emphasise teamwork and group harmony. Additionally, in cultures with high MAS, trust is built on achievements and recognition, whereas low MAS cultures prioritise collaboration and empathy.

Interorganisational collaboration relies heavily on trust dynamics, but cultural context is equally important. While task-based trust is vital, it may not effectively foster collaboration in collectivistic cultures. Conversely, in individualistic cultures, task-based trust tends to correlate positively with collaboration. Relationship-based trust is crucial for interorganisational collaboration in collectivistic cultures.

Understanding these cultural nuances is essential in international responses, even when implementing standardised Incident Management Systems (IMSs) like ICS. IMSs offer procedures, terminology, and hierarchy, but their implementation varies based on cultural context. The fundamental framework may remain consistent, but the flexibility of individuals' adapting strategies to the local context is essential. Solutions effective in one country may not readily suit others. Therefore, while foreign solutions are often adopted for proven effectiveness, cultural adaptation should be considered.

Decision making

When viewed through Meyer's and Hofstede's frameworks, it's apparent that cultural dimensions play a crucial role in determining *who* makes decisions and *how* decisions are made. For instance, Hofstede's power distance dimension and Meyer's Leading dimension (Figure 5) shape a culture's leadership style—hierarchical or egalitarian—and determine

decision-making authority. Hierarchical cultures tend toward centralised, less participative decision-making, often escalating decisions to senior figures for resolution (Tsai & Chi, 2012; Yates & de Oliveira, 2016). Conversely, egalitarian cultures place more trust in subordinates, granting them greater autonomy in decision-making.

Figure 5. Meyer's Leading dimension (Meyer, 2016)

Marine pollution incidents often require quick decision-making to address rapid developments, posing challenges to hierarchical approaches in routine processes. For example, sign-off processes during joint shoreline surveys often encounter difficulties, as authorities' representatives often lack the authority for on-the-spot decisions, necessitating escalation to senior personnel, even if absent. Although frustrating operationally, this highlights a cultural nuance requiring adaptability; where building trust with relevant decision-makers within hierarchical systems may prove effective.

How decisions are made is influenced by the level of individualism or collectivism in a culture, featured in both Hofstede and Meyer's frameworks (Figure 6). This dimension determines the extent of input consideration, leading to either consensual or top-down decision-making. In a top-down approach, one person makes decisions on behalf of the group, valuing individual decision-making flexibility. Conversely, the consensual approach seeks group feedback, resulting in a lengthier process but swifter implementation due to consensus. Interestingly, long decision-making processes can foster stronger relationships, which is highly valued in emergency response (Meyer, 2016). Cultures that lean towards the egalitarian side of

the scale tend to follow a consensual approach for decision making, as seen in Nordic countries. Conversely, hierarchical cultures, like those in many Middle Eastern and Latin American countries, typically favour a top-down approach, though with varying degrees. However, exceptions exist; hierarchical cultures such as Japan and Germany may adopt a consensual approach, while egalitarian cultures like the US may favour a top-down approach (Meyer, 2016).

Figure 6. Meyer's Deciding dimension (Meyer, 2016)

The flexibility of the top-down approach is particularly advantageous in emergency management, where information evolves rapidly, especially during the initial phase. This flexibility allows for decisions to be revisited and adapted without unanimous agreement, explaining the appointment of a single decision-maker in various incident management systems. This explains why different IMSs involve the appointment of one person at the top with robust decision-making authority. This structure can be observed in roles like the Secretary of State's Representative (SOSREP) overseeing the United Kingdom's (UK) casualty response, or the Maritime Emergency Response Commander (MERCOM) for the Australian management system of maritime emergencies. However, applying a top-down approach in consensus-driven cultures can breed mistrust and resistance among other stakeholders, leading to frustration and complications during plan implementation (Meyer, 2016). In consensual cultures, decision-making processes during marine pollution incidents may involve more meetings and discussions, leading to longer timelines for reaching final conclusions.

Worth noting that the international spill response community relies heavily on experts to promote best practices. Hence, it's essential for these experts to understand the distinct timelines and rhythms of decision-making, whether in a consensual or top-down context. When effective, experts can help reducing uncertainty during the emergency phase, interpreting limited information accurately, and persuading decision-makers to make appropriate choices, even in the face of scepticism. For instance, recommending a "Monitor & Evaluate" approach, which might be perceived as inaction, or suggesting the use of dispersants, which may raise environmental concerns.

To actively contribute to consensual decision-making, experts can employ strategies such as regularly checking in with local counterparts, focusing on the quality of information provided, and cultivating contacts within the team. These strategies help experts understand the decision-making process, especially when arriving soon after an incident. Cultivating contacts within the local team can help understanding where the group is in the decision-making process, which may not be immediately evident to outsiders, such as international experts arriving in the country during the initial phases of a response. In cultures following a top-down approach, experts can enhance their effectiveness by demonstrating readiness to follow decisions, even if their input was not solicited or followed. Remaining flexible and prepared to revise advice as the situation evolves is crucial, as top-down decision-makers appreciate adaptable recommendations.

Hofstede’s uncertainty avoidance is another crucial dimension influencing decision-making in marine pollution incidents, reflecting how cultures handle ambiguity, risk, and uncertainty. This dimension significantly shapes the threshold of information deemed necessary for decision-making and the need for structured processes, rules, and clear guidelines. Cultures with high uncertainty avoidance tend to favour structure and rules, seeking predictability. They embrace well-defined decision-making processes, even in emergencies like

marine pollution incidents, resulting in bureaucratic incident management impacting daily operations. These cultures exhibit caution, preferring proven solutions and relying on rigorous planning, strict control processes, and qualified specialists, leading to extended decision-making times. Conversely, cultures with low uncertainty avoidance are more flexible in decision-making, open to new approaches and valuing creativity and innovation. Decisions are made more quickly, focusing on adaptability and responsiveness to changing circumstances.

RECENT CASE STUDIES OF INTERNATIONAL RESPONSE TO MARINE POLLUTION INCIDENTS

The international spill response community has recently responded to several major marine pollution incidents, with varying degrees of success in incident management. The WAKASHIO incident in Mauritius (2020), the X-PRESS PEARL incident in Sri Lanka (2021), and the Callao incident in Peru (2022) garnered global media attention due to their scale, prompting international cooperation and the deployment of expert teams. However, a recurring challenge across all three incidents was the effective coordination and integration of international expertise into ongoing response efforts. It is to be noted that the countries selected for comparison in the following case studies are based on countries for which cultural data is readily available. It may not provide a holistic view of interactions during these incidents, but it provides the reader with examples of potential sources of challenge in collaboration.

During the **WAKASHIO** incident[1], the Mauritian Government's request for international assistance drew responses from several countries and intergovernmental organisations

[1] Incident involving the grounding of the bulk carrier WAKASHIO on a coral reef off the coast of Mauritius in 2020. At the time of the grounding, WAKASHIO was in ballast and carrying 1,894 metric tonnes (MT) of very low sulfur fuel oil (VLSFO), 207 MT of Marine Gas Oil (MGO), and 90 MT of lube oil. The vessel experienced a breach in one of its bunker tanks, leading

including France, India, Japan, the UK, and the United Nations (UN) through the UN Office for the Coordination of Humanitarian Affairs (UN OCHA) and the International Maritime Organisation (IMO). Other stakeholders on site included Mauritian authorities, institutes, spill response contractors, and ITOPF, which remained on site for approximately six months. The involvement of this diverse international community, along with numerous other local stakeholders created a complex web of interactions and collaboration. However, there were cross-cultural challenges that significantly influenced the incident management. For example, the frequent use of English as *lingua franca* affected communication, and the differing approaches to delivering negative feedback impacted the relationship between site supervisors and workers. Similarly, delays in implementing recommended response techniques and obtaining approval from Mauritian authorities for cleaned sites were attributed to what was perceived as a highly bureaucratic decision-making approach. Additionally, a general atmosphere of mistrust among agencies emerged during the response.

For the **X-PRESS PEARL** incident[2], the national responsible authority was the Marine Environment Protection Agency (MEPA), which established shoreline clean-up operations as per the national contingency plan. Similar to the WAKASHIO incident, a request for international assistance was made by the Sri Lankan Government following which many agencies attended onsite to assist and carry out environmental damage assessments alongside national authorities. Countries and intergovernmental agencies included France, Italy, the UK, the US, the UN, and ITOPF, which remained on site for several months to assist with shoreline

to a large oil spill that affected approximately 30 km of shoreline. The vessel eventually split in two due to worsening weather conditions.

[2] The container ship X-PRESS PEARL caught fire in 2021 while at Colombo anchorage, Sri Lanka. At the time of the incident, the vessel was carrying 1,486 containers on-board, with 81 declared as dangerous goods (DG). These included products such as nitric acid, methanol, and sodium hydroxide. Alongside the DG, approximately 422 containers contained virgin plastic pellets of various polymers. Approximately 300 km of shoreline were affected with pellets.

cleanup operations and monitor the response progress. The involvement of this diverse international community, along with numerous other stakeholders on the scene, created an atmosphere where interaction was not always conducive to effective incident management due to various cross-cultural challenges. For instance, interagency mistrust created information silos, and a collaborative progression of the response was impacted by the differing approaches to negative feedback among stakeholders. As providing effective negative feedback remained a challenge, it was felt by some stakeholders that decision-making did not always reflect the discussions in open forums. Additionally, a highly bureaucratic and hierarchical approach impacted the communication among agencies and generated duplication of efforts. Informal communication streams were preferred for channelling information, which resulted in lack of documentation.

Similar to previous cases, the **Callao** incident[3] prompted the Peruvian government to request international assistance. Environmental and maritime authorities managed the incident with advice from several international agencies, including the IMO and the UN Environment Programme (UNEP)/OCHA Joint Environment Unit (JEU). The US sent experts from the US Coast Guard (USCG), the National Oceanic and Atmospheric Administration (NOAA) and the US Agency for International Development (USAID). The Terminal mobilised personnel from Spain, Brazil, the US, the UK, and Colombia. ITOPF served as technical advisors to the Peruvian Navy. The response, however, faced numerous cross-cultural challenges, including interpersonal and interinstitutional mistrust, divergent risk perceptions among stakeholders, and hierarchical decision-making structures.

[3] In January 2022, an estimated volume of 1,465 MT of Buzios crude oil was spilled off the Port of El Callao (central coast Peru) during unloading operations at the terminal serving La Pampilla refinery. The spill resulted in the contamination of approximately 50 km of shoreline, which included sandy and mixed sediment beaches as well as rocky shores. Various economically sensitive areas were affected, including recreational beaches and a fishing harbour.

Examining the cultural landscape of these three incidents using Hofstede's and Meyer's frameworks, some challenges start to emerge. The figures below show Hofstede's dimensions in subfigures A, providing numerical scores for each country across each dimension. Subfigures B depict profiles based on Meyer's dimensions, representing each dimension on a scale, and facilitating country-to-country comparisons. While Hofstede's dimensions provide insight into general cultural trends for each country, in Meyer's scales national cultures are positioned on a spectrum relative to other cultures.

Figure 7 shows the cultural profile of certain countries involved in the **WAKASHIO** incident: France, Greece, Japan, the UK, and Mauritius. Mauritius shows a moderate to high preference for hierarchy and authority, an inclination towards individualistic values, and a moderate preference for avoiding ambiguity and uncertainty. This suggests that Mauritian society may favour conflict management styles that balance task- and people-oriented approaches, such as collaborative problem-solving and compromise. The moderate power distance score implies a preference for negotiation and consensus-building, allowing all parties to contribute to decision-making. This aligns with ITOPF's observations of highly consensual decision-making among local stakeholders during the incident. Meyer's scale (Figure 7B) show that Greece, France, and the UK lean towards a top-down decision-making, which typically leads to quicker conclusions. This contrast in decision making approaches may have caused some international stakeholders to perceive delays in decision-making and cause frustration. For instance, persuading the government of the ineffectiveness of incorrectly deployed booms in an area unlikely to be impacted by oil took an extended period, even after presenting the case to high-ranking officials who agreed with the rationale.

Such consensual decision-making impacted the way meetings were conducted. Whilst for some international stakeholders, meetings are spaces to make decisions or to debate various viewpoints, during the WAKASHIO incident meetings were spaces to formalise decisions that

had been made consensually outside formal meeting spaces. This decentralised decision-making process allowed local parties to solidify support with informal, face-to-face discussions before formalising decisions in meetings. However, this approach may have posed challenges for international experts seeking to contribute effectively to the incident strategy, as it may have been unclear when decisions were being made.

Figure 8 shows the cultural profile of some countries involved in the response of the **X-PRESS PEARL** incident, including advisers and contractors. Data indicates that Sri Lanka leans towards a hierarchical and collectivistic society. Overall, Sri Lankan society may exhibit a preference for collaborative conflict management approaches that prioritise achieving collective goals while maintaining hierarchical structures and preserving relationships. Although Meyer's framework lacks data for Sri Lanka, trust-building is likely to be relationship-based given the high-power distance score and the collectivistic orientation. In a society valuing hierarchical structures and collective harmony, disagreements are likely to be handled diplomatically and indirectly. Open dissent may be discouraged. As observed during the WAKASHIO incident, there was a perceived discrepancy between decisions and meeting discussions, partly linked to the lack of open debate during meetings. This contrasted with the more direct approach of stakeholders from France, US, and UK, where feedback and disagreement are openly addressed. Differing opinions may have prompted Sri Lankan decision-makers to opt for making decisions outside of open forums to prevent offense and save face. This in turn may have promoted informal communication channels that resulted in lack of documentation.

Figure 9 shows the cultural profile of some of the countries involved in responding to the **Callao** incident. Data indicates that Peru leans towards a hierarchical and collectivistic society, favouring indirect negative feedback and avoiding confrontation. Consequently, decision-making often occurred outside formal meetings due to hesitancy among local

stakeholders to express disagreement, especially with authority figures. ITOPF found it effective to establish contacts within local authorities to understand the decision-making process and provide timely technical advice. Building trust in Peru's relationship-based society required demonstrating respect and loyalty over an extended period, facilitated by ITOPF's presence on site for more than three months. Meyer's trusting and disagreeing dimensions also highlight the extended time needed to foster open debate during joint surveys, as personal connections developed over weeks among the attending authority representatives, enabling fruitful technical discussions.

Peru's high uncertainty avoidance means that there is a preference for proven solutions over risky alternatives, for instance when cleaning challenging-to-access sites or facing unprecedented forms of pollution. Technical recommendations are more likely to gain acceptance when supported by robust evidence of success. Rigorous planning, strict control processes, and reliance on qualified specialists characterise decision-making in these cultures, leading to extended decision-making times due to thorough information gathering and conformity to established norms.

Despite the potential for using surf washing on the affected shoreline, the Terminal-led Incident Management Team's (IMT's) proposal faced significant approval delays due to insufficient documentation showcasing its success in other incidents globally. In response, ITOPF, acknowledged by certain authorities as a reliable qualified specialist, was requested to provide anecdotical evidence affirming the technique's endorsement by the international spill response community and a comprehensive compilation of case studies and photographs. This shifted subsequent approval requests towards a need for extensive regulatory and technical documentation. Similarly, a disproportionate enforcement of control processes complicated the application of the "how clean is clean" concept. Oil was considered inherently risky by Peruvian environmental authorities regardless of the amount and the degree of weathering.

Consequently, the common approach of qualitatively assessing the presence of oil for signoffs was considered inadequate, implementing chemical analyses instead.

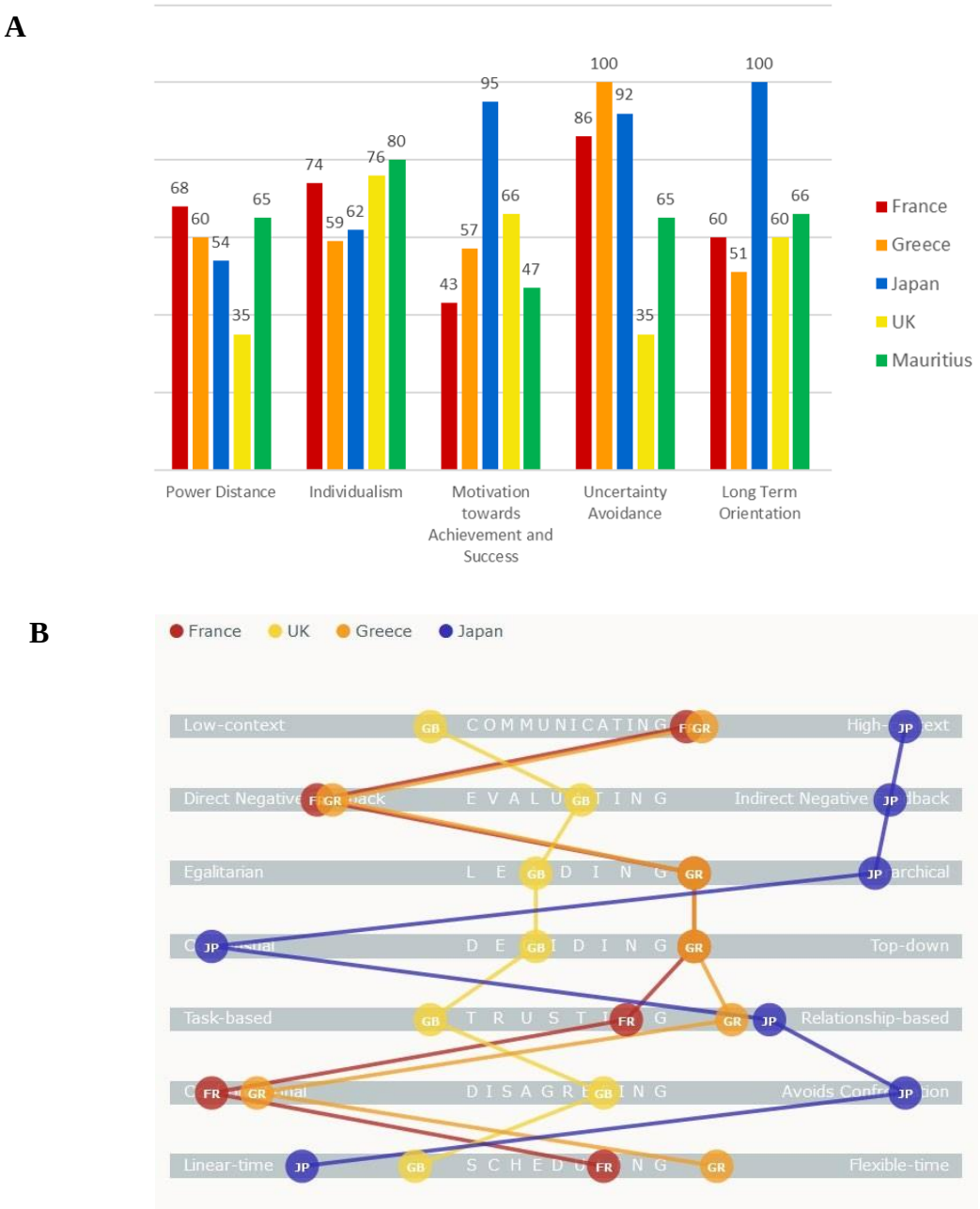


Figure 7. Cultural profile for countries involved in the WAKASHIO incident based on (A) Hofstede's Country Comparison Tool and Janssen (2010) (B) Meyer's Country Mapping Tool[4].

[4] Data for Mauritius is not available in Meyer's Framework.

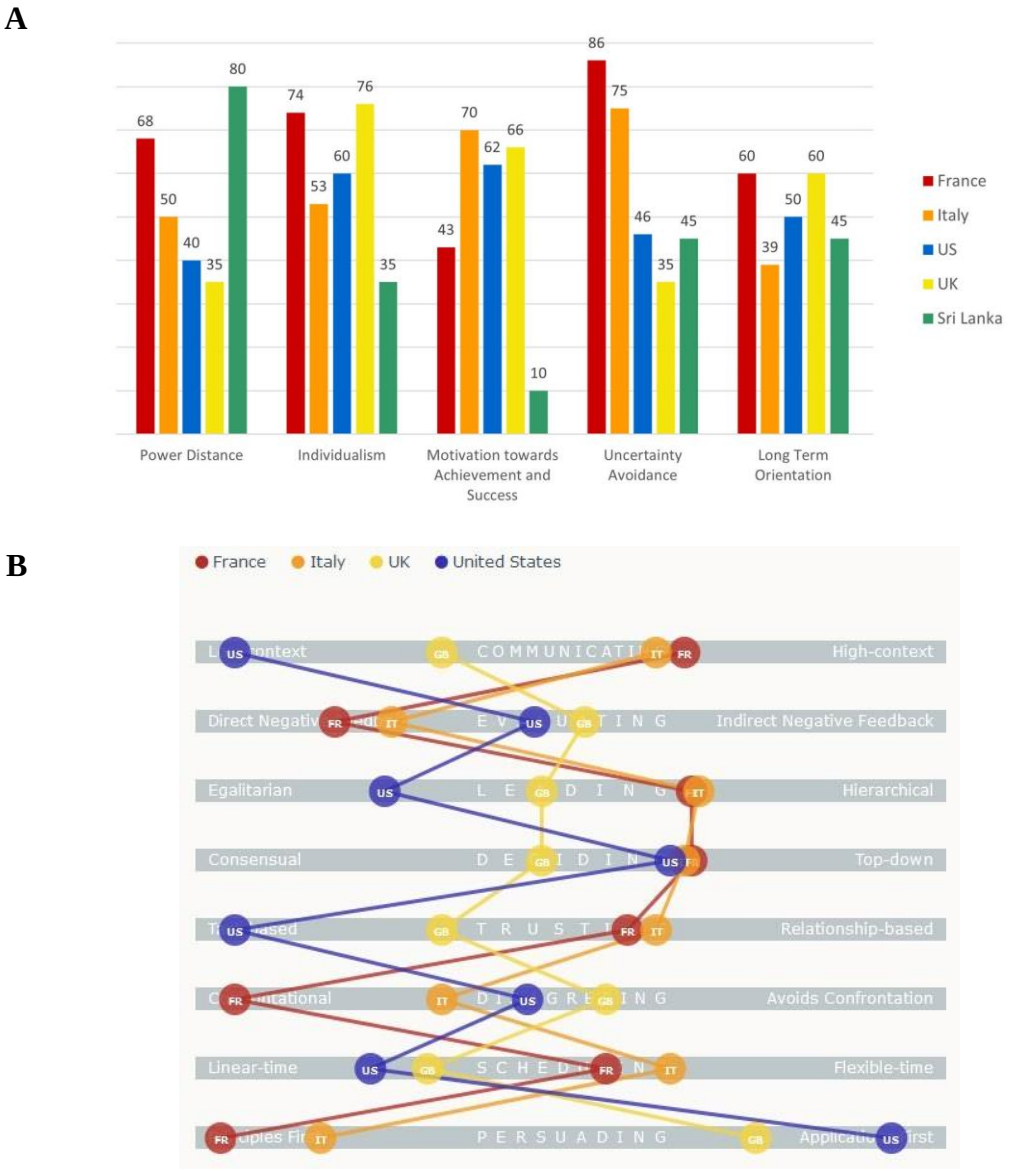
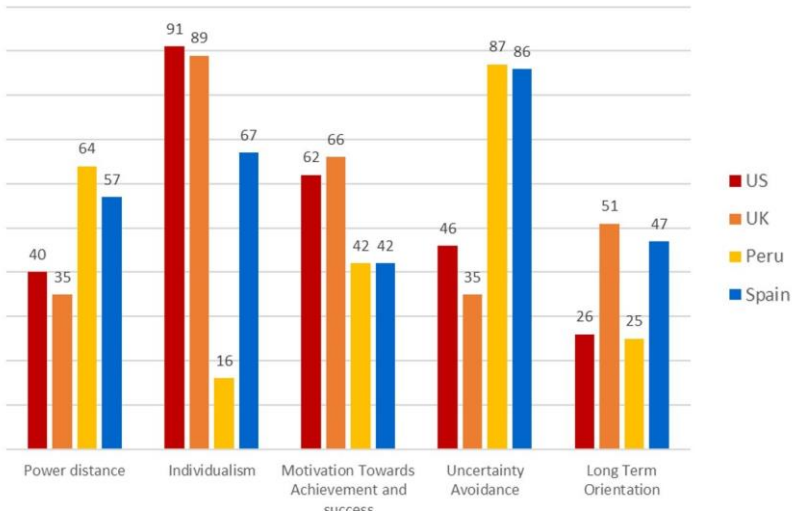


Figure 8. Cultural profile for countries involved in the X-PRESS PEARL incident: France, Italy, the US, the UK, and Sri Lanka based on (A) Hofstede's Country Comparison Tool and (B) Meyer's Country Mapping Tool[5]

[5] Meyer's Country Mapping Tool does not have data for Sri Lanka.

A



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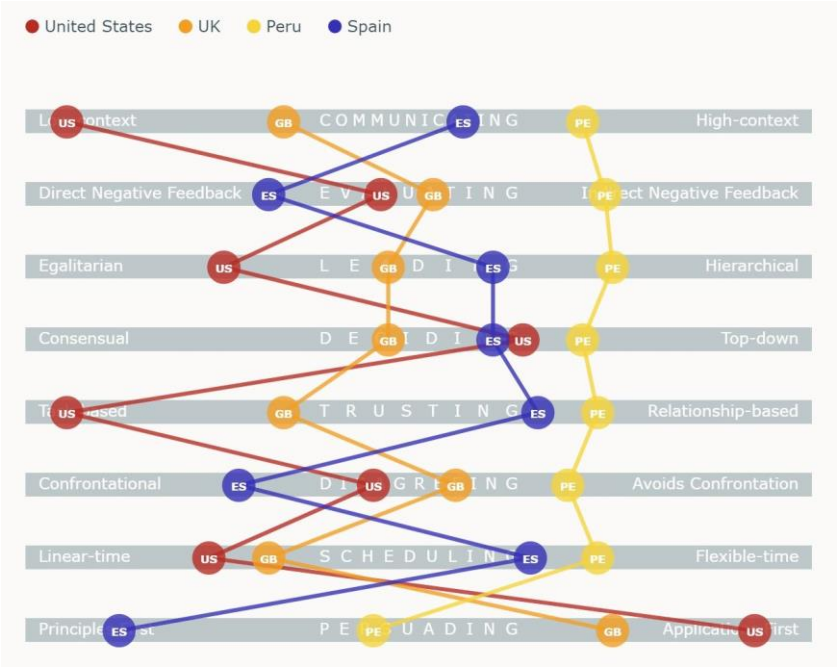

Figure 9. Cultural profile for some of the countries involved in the Callao incident: the US, the UK, Spain, and Peru based on (A) Hofstede's Country Comparison Tool and (B) Meyer's Country Mapping Tool

CONCLUSION

Although the three case studies described above occurred in different jurisdictions and under different circumstances, the challenges arising from the interaction between various international stakeholders can be partially understood by examining them through the cultural

lens. The analysis of these three incidents underscores the importance of enhancing cultural awareness in preparedness and before engaging in emergency response activities in foreign countries. As professionals in the field of emergencies, there is a responsibility to be adaptable to the high levels of uncertainty inherent in events like marine pollution incidents, including an understanding of the embedded culture of the receiving territory. Given that response efficiency is evaluated holistically, awareness of the dominant cultural behaviours in the incident's location becomes crucial. A heightened level of cultural awareness and preparedness increases the likelihood of international experts building trust, thereby minimising conflicts and better supporting the decision-making process, ultimately enhancing the overall response effectiveness.

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