CHALLENGES FACED BY SUB-CONTRACTORS IN MANAGING DISASTER-RELATED CLAIMS IN SRI LANKAN CONSTRUCTION INDUSTRY

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Abstract: The increased frequency and intensity of disasters in Sri Lanka has significantly affected the sub-contractors in Sri Lankan construction industry especially during managing disaster related claims due to their inferior contractual position and limited resources. The past research has not comprehensively investigated the difficulties faced by sub-contractors in managing disaster related claims. Therefore, this research is aimed to investigate the key challenges faced by sub-contractors in managing disaster-related claims in the Sri Lankan construction industry in order to provide best practices to minimise the difficulties in managing such claims in future. This research followed qualitative research approach, and the data collection was done using semi-structured interviews with 20 experts selected through snowball sampling. The collected data were analysed through manual and code-based content analysis using NVivo software. The findings revealed that the sub-contractors experience numerous challenges due to inadequate documentation, limited financial and human resources, difficulties in evaluating claims, problematic relationships with main contractors, legal issues, and limited knowledge about claim procedures. Finally, the research proposed best practices such as structured claim documentation procedures, initial disaster planning methods, training programmes, improved contractual clarity on force majeure events, collaborative relationship with stakeholders, and use of digital tools, to manage the disaster related claims.

Keywords: *Best practices, Construction industry, Claim management, Disaster-related claims, Sub-contractors.*

1. Introduction

A disaster is defined as a serious disruption to the functions of a community or a society involving widespread human, material, economic or environmental losses or impacts, which exceed the ability of the affected community or society to cope using its own resources (Chaudhary & Piracha, 2021). Disasters are generally categorised into three main types: [a] natural, caused by natural processes, [b] man-made, resulting from intentional or unintentional human activities, and [c] hybrid (Shaluf, 2007).

The construction industry is not exempt from being affected by disasters. Disasters could lead to delays in construction projects, cost escalations, resource shortages, and even project terminations (Anthopoulos et al., 2013). According to Arneson (2022), disasters could cause immediate labour wage escalations of up to 86%, particularly in construction sector. Due to project delays resulting from the disasters, payments to contractors and sub-contractors will be postponed, which may cause challenges in disbursing wages to the labourers (Bolton et al., 2022). Moreover, delays in repayment of loans can lead to legal and contractual disputes. Hence, the contractors and sub-contractors apply for claims to compensate themselves from these challenges and losses (Chappell, 2011). Therefore, managing these types of claims effectively is important to reduce the disputes promptly and continue the project without interruptions (Kalogeraki & Antoniou, 2024).

Proper claim management provides solution to avoid disputes in construction projects (Umar & Ochigbo, 2024). Further, the contractors submit claims to compensate the financial losses incur due to disasters (Kim et al., 2021). According to Alshammari et al. (2017), "*Force majeure includes unforeseen events with causes beyond the control of the parties such as fire, earthquakes, flood, hurricane, abnormally severe weather conditions, freight embargoes, war, terrorism, acts of the government in its sovereign capacity or change of law or regulation, and other natural disasters*". Therefore, the disaster-related claims are considered under force majeure events.

When considering the Sri Lankan context, climate-related disasters such as floods, strong winds and landslides critically affect the construction sector and result in project delays and increased costs (Weerasekara et al., 2021). Further to the authors, the monsoon rainfall and pressure variations in the Bay of Bengal contribute to an increased frequency of disaster occurrences in Sri Lanka. Moreover, in recent years, the pandemic-related disasters including COVID-19 severely affected the Sri Lankan construction industry and resulted in job losses due to project halts and termination (Weerasekara et al., 2021). The lack of a clear definition for force majeure makes it difficult for sub-contractors to demonstrate that their circumstances satisfy the necessary criteria to support a claim (Jayathilaka & Waidyasekara, 2022). Furthermore, subcontractors face other challenges including poor coordination especially with main contractors, improper documentation, and miscommunication in managing disaster related claims (Bui et al., 1999). In addition, current methods

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DOI: https://doi.org/10.31705/FARU.2025.30

for managing disaster-related claims rely on fragmented communication and manual documentation, causing errors, delays, and financial strain on subcontractors.

Although there are in-depth studies have been done related with claims and claim management, the research carried out specific to the difficulties faced by sub-contractors in managing disaster related claims are scant, especially in the Sri Lankan context. There is therefore a need to investigate the challenges faced by sub-contractors in managing disaster-related claims, in order to provide best practices to minimise difficulties in managing such claims in the future. This paper starts with an introduction followed by a literature review and Section 3 presents the research methodology. The research findings and discussion are presented in Section 4 followed by the conclusions and recommendations in Section 5.

2. Literature Review

Recently, the scale and complexity of construction works as well as the disasters are increasing (Kim, et al. 2021). Moreover, the disasters can cause significant delays, price escalations, and could lead to construction's cancellation. In such contexts, sub-contractors face difficulties due to the inefficiencies in the claim management process. Hence, the following sections first review disasters and their impacts on construction industry, claims management in Sri Lankan construction industry, challenges face by contractors in managing the disaster-related claims and best practices available in global construction industry for managing disaster-related claims, before empirically investigate the challenges faced by Sri Lankan sub-contractors in managing disaster-related claims to provide best practices to minimise difficulties in managing such claims.

2.1 DISASTERS AND THE IMPACT OF THE DISASTERS ON CONSTRUCTION INDUSTRY

Bayraktar and Yıldırım (2016) identified disaster as a serious disruption that cause significant damages to people, property and economy, where the ability of the community is affected to cope the situation with own resources. The impacts of the disasters are not only limited with immediate destruction but also lead to long-term environmental effect, food security and heritage problems (Gamage et al., 2025). Furthermore, the disasters affect the economy of countries, especially the developing countries (Khan et al., 2023). Moreover, according to Mendis A.P.K.D. et al. (2020), natural disasters have caused severe damages to the south Asian developing countries and their economies in the last decade. COVID-19 pandemic, Ukraine-Russia war, Western European flood in 2021, Cyclone Tauktae in India and Beirut explosion in Lebanon are some major disasters that happened in recent years. Among those, COVID-19 is one of the major disasters that caused severe effects, globally (Fong et al., 2021).

Sri Lanka is prone to certain disasters such as floods, droughts, landslides, winds, coastal erosion, industrial hazards, Tsunami, epidemics, and civil & internal strife, which frequently bring in severe issues throughout the country (Disaster Management Centre, 2025). Construction industry is a sector which directly get affected by disasters and lead to project delays and terminations (Malik et al., 2020) and Sri Lankan construction industry has no exception. The 2004 Tsunami caused significant damage to infrastructure, including roads and railways, resulting in losses estimated at approximately $1 billion (Palliyaguru et al., 2006). Further, the tsunami decelerated the construction projects and affected the cost of labourers, equipment, and materials (Ruddock et al., 2010). The disasters have a strong link with the construction cost escalation in Sri Lanka (De Silva, 2012). Moreover, the civil war in Sri Lanka affected the economy of the country and led to termination of construction projects and significantly affected construction investments (Jayamal et al., 2023). During the last five years, the COVID-19 global pandemic and economic crisis in Sri Lanka substantially affected infrastructure development, the construction supply chain, labour supply, and on-time payments (Wijayawardhana & Damayanthi, 2022; Weerakoon et al., 2023; De Silva et al., 2023). Hence, all the key stakeholders in construction industry face numerous challenges.

On the other hand, there has been increased dependence on subcontracting within the construction industry, and today, sub-contractors play a significant role in successful delivery of projects more than ever. The major challenges the sub-contractors faced during the disasters include issues in supply chains, delivery of materials, communication with the suppliers and managing the labourers (Loku & De Silva, 2022). Further, the COVID-19 pandemic exposed the weakness of supply chains, portraying that sub-contractors often depended on only a few suppliers for crucial materials and equipment. Moreover, the sub-contractors have insufficient knowledge regarding the procedures to handle the demolition waste after the disaster and inadequate resources to continue the project with huge construction demolition waste (Karunasena et al., 2012). Malalgoda et al. (2016) highlights that the Sri Lankan sub-contractors are mainly affected due to inadequate resources including human resources and financial resources, which will assist in responding and managing the disaster situations. Furthermore, the main contractors who have excessive power and resources generally maintain a strict relationship with the sub-contractors. Therefore, the sub-contractors face challenges while working with the main contractors during and after the disaster (Manu et al., 2015). Moreover, the Sri Lankan construction industry has significantly affected by skilled labour shortages during disasters (Abeysinghe & Jayathilaka, 2022). The labour shortages result in project delays and reduction in quality of works. Therefore, the sub-contractors are forced to hire less experienced labourers to continue the works during and post-disaster situations (Rodrigo & Perera, 2017). Some of the above-stated issues could lead to claims and both contractors and sub-contractors face several challenges in managing such disaster-related claims (Walls, 2024).

2.2 CLAIM MANAGEMENT IN SRI LANKAN CONSTRUCTION INDUSTRY

Claim management is an important aspect for the success of construction projects (Yousefi et al., 2016). The process of claim management can be divided into six main stages, namely claim identification, claim notification, claim documentation, claim presentation, claim evaluation, and claim negotiation (Parikh et al., 2019). Successful claim management process depends on proper documentation and clear communication to ensure that all parties are informed, and claims are substantiated with adequate evidence (Umar & Ochigbo, 2024). According to Piyumra and Disaratna (2023), construction claim management process in Sri Lanka is complex and requires professionals to have a wide range of skills, including knowledge of legal principles, contract management, and project management. The issues between clients, contractors and sub-contractors, and insufficient time will make the claim management process even complicated (Gunarathna et al., 2018). Furthermore, inappropriate risk management and relying entirely on the nominated sub-contractors without a proper investigation of their expertise may lead to disputes due to lack of knowledge regarding contract management (Welikala et al., 2022). Sri Lanka as a country which is frequently affected by the disasters (Weerasekara et al., 2021), claims arising from disasters represent another significant category of claims within Sri Lanka's construction industry (Cook, 2020).

2.3 CHALLENGES IN MANAGING DISASTER-RELATED CLAIMS AND BEST PRACTICES IN MANAGING SUCH CLAIMS

Disaster-related claims are requests for compensation or extension of time arising from unforeseen events, such as natural disasters, that impact the project, which result in damage, demanding the assessment of both time and cost required for recovery and reconstruction activities (Jovel & Mudahar, 2010). In disaster situations, contractors apply for claims such as force majeure claims, delay claims, disruption claims, cost overrun claims, acceleration claims, insurance-related claims, suspension claims and termination claims for compensation for damages (Alshammari et al., 2017; Bourova et al., 2022; Sydnor et al., 2017; Khodahemmati & Shahandashti, 2020; Mukuka et al., 2015; Suarez & Linnerooth-Bayer, 2021; Terranova, 2020; Demirkaya, 2023). However, the sub-contractors in construction industry face unique challenges due to the disaster-related claims. In Sri Lankan context, one of the critical challenges is the complicated rules & regulations, and insufficient clear guidelines regarding the procedures of claim management after the disasters (Karunasena et al., 2012). Further to the authors, inadequate standardised procedures about the disaster-related claims will also affect the claim management process. De Alwis and Noy (2019) added stating that the economic condition of Sri Lanka makes the claim management process further complicated. Moreover, economic instability of the construction sub-contractors will cause difficulties in managing claims during disasters and complicate the process (Amaratunga et al., 2015).

Hence, disaster-related claims need best practices to enhance the efficiency of the claim management process. Moreover, the claims are needed to be identified and managed with an organised and structured way. Seneviratne et al. (2023) highlights that the collaborative approach among the stakeholders with integrated sharing of lessons and practices can strengthen the disaster-related claim management process. The training sessions and continuous education about the disaster situations are critical to the parties involved in claim management process within the construction industry, as they help mitigate potential challenges that may arise during the handling of claims (Siriwardena et al., 2013). Further, the early preparedness for disasters by using the previous logistics and resources in construction contracts can simplify the claim management process (Stringfellow, 2014).

Sub-contractors in Sri Lankan construction industry face numerous challenges when managing disaster-related claims. These challenges are exacerbated by a lack of clear communication, inadequate planning, insufficient collaboration among stakeholders and insufficient knowledge about the process. Further, unclear details of the projects, confusing issues, and inadequate standard procedures may restrict the sub-contractors from managing disaster-related claims effectively in Sri Lanka (Thusharika et al., 2023). Moreover, the sub-contractors struggle to manage the claims related to disasters due to inadequate knowledge about the management process and regulations (Farley et al., 2017). However, the strategies for managing disaster-related claims in Sri Lankan construction industry are inadequate and hence, the best practices for minimising the challenges faced by the sub-contractors in managing such claims is vital.

3. Research Methodology

The research process is a systematic process that is followed by researchers to identify the solution for a specific problem or question that is aligned with the research (Nshi, 2023). Literature review is the way to identify the overview of existing research with a specific topic, that is summarised with the key findings and the knowledge gaps which are identified for further examination (Kenny & Russell, 2023). Therefore, a comprehensive literature review was conducted to review the disasters and their impacts on construction industry, claims management in Sri Lankan construction industry, challenges face by contractors in managing the disaster-related claims and best practices available in for managing disaster-related claims.

Subsequently, qualitative research approach was used to gather empirical evidence to achieve the aim. The data collection was done using semi-structured interviews with 20 industry experts who have expertise in claim management in subcontractors' organisations. The respondents were selected using snowball sampling considering the experience in construction industry as a sub-contractor, their knowledge in claims management, and experience in applying and managing disaster-related claims. Initially, the research team contacted six experts and then, expanded the survey sample by

requesting the experts to identify other professionals participating in the study. Data collection was stopped when the responses reached the data saturation point. Table 1 summarises the details of the respondents.

Table 1: Profile of the Respondent

Code	Designation	Experience	General type of projects undertakes
R1	Contract Engineer	05 Years	Renewable energy projects
R2	Engineer	05 Years	MEP projects
R3	Site Engineer	05 Years	Water supply projects
R4	Project Manager	09 Years	Renewable energy projects
R5	Managing Director	18 Years	Electrical, lightning protection, solar, UPS projects
R6	Director	22 Years	HVAC projects
R7	Senior Quantity Surveyor	22 Years	MEP projects
R8	Project Quantity Surveyor	10 Years	Construction projects
R9	Quantity Surveyor	05 Years	MEP projects
R10	Project Manager	09 Years	Civil works for ground solar projects
R11	Managing Director	18 Years	Water proofing projects
R12	Contractor Quantity Surveyor	08 Years	Road and bridge construction projects
R13	Subcontractor	35 Years	Plumbing and electrical projects
R14	Managing Director	13 Years	Electrical projects
R15	Project Quantity Surveyor	05 Years	MEP projects
R16	Quantity Surveyor	24 Years	Construction projects
R17	Engineer	05 Years	Water proofing projects
R18	Director and Engineer	10 Years	Civil projects
R19	Managing Director	10 Years	Water proofing, janitorial services projects
R20	Quantity Surveyor	05 Years	MEP projects

Code-based content analysis and manual content analysis were used to analyse the collected data. The NVivo software is used to analyse the data collected from the interviews to identify the types of disasters, the challenges faced by the sub-contractors in managing the disaster-related claims and the best practices for managing the disaster-related claims of sub-contractors. The research is limited to the disaster related claims in Sri Lankan construction industry. Moreover, the disasters during the last two decades were considered for analysing the challenges and proposing mitigation strategies to the sub-contractors.

4. Research Findings and Discussion

Semi-structured expert interviews were conducted for data collection, and the collected data was analysed using manual and code-based content analysis using NVivo software. The research findings are presented under the following sub-sections.

4.1 MAJOR TYPES OF DISASTERS FACED BY THE SUB-CONTRACTORS IN SRI LANKA

The first question raised from the respondents is about the type of disasters faced by the sub-contractors in Sri Lanka during last 2 decades and the nature of the impact of those disasters. The major types of disasters that significantly affected Sri Lankan construction industry and sub-contractors during last 2 decades are summarised in Figure.

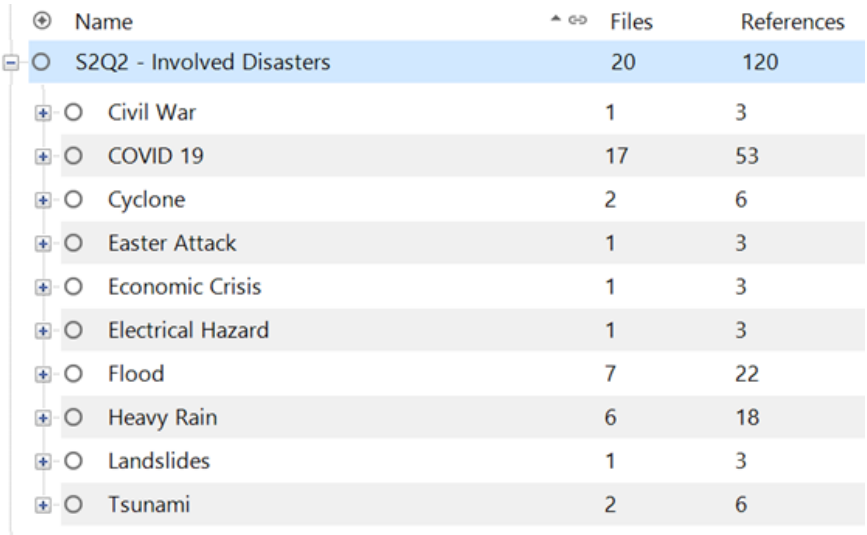

Figure 1: Types of Disasters Significantly Affected Sri Lankan Construction Industry and Sub-Contractors

COVID-19 pandemic is identified as one of the most disruptive disasters that made a vital impact on the construction industry of Sri Lanka. R17 mentioned that *"Due to COVID-19 most of our projects were halted because of the government restrictions and lockdowns"*. Further, the pandemic resulted in labour shortages and health related issues to the project staff. Furthermore, R13 described the impact of COVID-19 on the supply chain of the materials and resulted price fluctuation of materials. Further, highlighting the severity of Tsunami, R6 stated that *"During the Tsunami, the construction sites in the affected areas were severely damaged, and all previously completed work was completely destroyed. This has caused an impact on both cost and time".* On the other hand, flood has been a common and recurrent disaster that affected construction projects (R2, R6, R8, R10, R12, R14, and R18) throughout this period. Highlighting the impact with examples, R10 stated that *"Two concrete mixer trucks were submerged in the flood. Site stores were flooded; cement stores were destroyed. The constructed cofferdam was also damaged". "Due to heavy rain the materials were affected",* R2 said. Moreover, majority of the respondents stated that the rain caused impacts on timely completion whereas a few respondents stated that rain increased the construction cost as well.

Only R1 and R13 had experiences related to the impacts of cyclones. R1 stated that the cyclone happened in 2024 damaged the solar panels of their project. According to R13, the cyclone happened in 2020 resulted in power outages and delayed the projects. Further to both respondents, the cyclone impacted the project cost and caused delays. R8 mentioned that landslide happened in 2020 resulted in site shutdown in one of his projects. Moreover, the civil war in Sri Lanka for three decades until 2009 had profound effects on the construction industry. It impacted the supply chain of the projects and resulted in project delays. In addition, the economic crisis after COVID-19 in 2022 also created additional challenges for the construction industry in Sri Lanka by raising material prices and increasing the project costs. Further, the Easter bomb blast in 2019 had a significant impact on several construction projects. According to R18, "*although the site is not located near the affected area, the government restrictions after the bomb blast has increased the cost and resulted in project delays*". To overcome these challenges and subsequent impacts, disaster related claims were one of the major solutions available for the sub-contractors.

4.2 COMMON CHALLENGES FACED BY THE SUB-CONTRACTORS IN MANAGING THE DISASTER-RELATED CLAIMS

The next question posed to the respondents was on the challenges faced by the sub-contractors in managing the disaster-related claims. The findings are summarised in Figure 2.

S3Q1 - Common Challenges	20	90
Complexity of the Project	2	2
Documentation Issues	15	16
Financial Issues	15	15
Inadequate Knowledge	6	6
Insufficient Explanation in SBD2	1	1
Issues in Evaluation of the Claim	14	16
Issues with Stakeholders	1	1
Lack of Human Resources	11	11
Legal Issues	9	9
Problems with Main Contractor	10	10
Risk Management Issues	3	3

Figure 2: Common Challenges Faced by the Sub-Contractors in Managing the Disaster-Related Claims

In managing disaster related claims, subcontractors faced significant hurdles, including documentation issues arising from a lack of awareness of specific requirements, limited site access during events like COVID-19, cyclones and floods, and difficulty in proving disruptions like supply chain problems. Several respondents, including R2, R3, and R6, highlighted that they were not fully aware of the required documentation during the COVID-19 pandemic, which led to complications in claim submissions. Further, R8 stated *"Did not have evidence for the claim"*. They further struggled with evaluating claims accurately due to inaccurate assessment of additional time needed for project completion, major fluctuations in material prices, and a lack of prior experience with unforeseen events. Moreover, R16 expressed *"after COVID-19 the material prices got increased and it was difficult to calculate unpredictable fluctuation"*.

Further, problems with main contractors include delays in obtaining extension of time (EOT) approvals from clients, main contractor's attempts to reduce or omit claims, and disagreements over force majeure clauses. In addition, R8 highlighted that "*Nowadays more Chinese contractors are involved, and we are struggling to communicate due to their lack of knowledge of English*". Further, they faced financial issues due to a lack of pre-allocated funds for disaster expenses, the need to use personal funds for immediate recovery needs before reimbursement, and critical delays in receiving claim approvals affecting cash flow. A lack of human resources arises from staff being affected by disasters and emigration of skilled

personnel due to economic instability. Further, risk management issues are dominant due to poor understanding of risk management, the challenge of managing multiple concurrent disasters (like COVID-19 and economic crisis), and the absence of clear predefined protocols for handling claims. The complexity of projects further complicates claim management by making it difficult to assess the exact impact and prove the causes between numerous tasks. Inadequate knowledge of the claim process, introduction of new rules after COVID-19 and complex contractual clauses led to inaccurate submissions and rejections. Finally, issues with stakeholders, while considered a minimal challenge that can still create conflicts and mistrust, slowing down the claims process as parties focus on self-advantage.

4.3 THE PROCESSES FOLLOWED BY THE SUB-CONTRACTORS IN PREPARATION OF DISASTER-RELATED CLAIMS

The process of preparing disaster-related claims is a critical aspect of sub-contractor operations in the Sri Lankan construction industry. Most respondents mentioned a systematic approach that begins with notifying the Contractor immediately after the occurrence of a disaster. According to R1, "*the first step involves issuing a notice to the Contractor, followed by an evaluation of the specific damage, and proceeding with the claim submission*". This opinion is supported by R2, who highlighted the importance of checking the contractual liability before initiating the notification process. After notification, the next critical step is collecting evidence to prove the claim. R5 highlighted that "*submitting a notice must be followed by collecting documentary proof to support the claim*". Moreover, R18 mentioned that *"We begin this process by documenting project disruptions using daily reports, photos, videos, and weather reports"*.

After the preparation of evidence is completed, the evaluation of losses needs to be done. Moreover, R10 suggested that "*loss assessment should include both financial and operational aspects*". Following the evaluation, sub-contractors proceed with the submission of evaluated claim. Respondents, such as R7 and R4 demonstrated the necessity of a formal submission with supporting documents. R19 highlighted the importance of submitting within the allocated time, as mentioned in standard contractual documents by stating *"submit the claim within the allocated time according to the standard documents"*. Further, the key aspect of the claim management process is negotiation with the main contractor. Several respondents, including R13 and R15, highlighted that claims often require discussions with stakeholders to reach an agreement. R14 further clarified the need for proper documentation to strengthen the negotiations to ensure the claims are justified.

4.4 BEST PRACTICES FOR MANAGING THE DISASTER-RELATED CLAIMS OF SUB-CONTRACTORS

Sri Lankan sub-contractors largely emphasise preparatory measures for disaster claims by precisely following government regulations and contractual obligations, including CIDA guidelines, and maintaining accurate historical site data, as highlighted by respondents R1 and R3. A significant number, including R10, stressed the importance of reviewing contractual agreements and understanding government policies to ensure compliance and legal substantiation of future claims, while R17 and R15 highlighted basic procedures including early notification and clear communication for post-disaster scenarios. Furthermore, submission of complete and systematic documentation is emphasised by R8 and R16, as the critical first step in claims management, providing essential evidence of site conditions and work progress to prove disaster causes. "*Timely notification of main contractors or relevant authorities is also crucia*l", R15 said. R19 encouraging prompt communication to ensure the addressing of disaster-related claims quick and immediate claim process initiation. Further, R1 and R19 advise careful review of contract terms, especially force majeure and delay clauses, to substantiate the claim. Despite these strong practices in documentation and compliance, a key limitation, mentioned by R12 and R14, is the prevalent lack of structured, proactive risk assessment or comprehensive risk mitigation strategies beyond mere adherence to guidelines, and limited focus on financial preparedness, such as allocating specific funds for unforeseen disaster costs or securing adequate insurance, as emphasised by R14.

4.5 PROACTIVE STEPS IN REDUCING DISASTER-RELATED RISKS

Proactive pre-planning for disasters among sub-contractors involves crucial steps like weather monitoring. Respondents R1, R3, R10, R18, and R19 emphasised the need to follow meteorological reports, check historical site data, and customise work schedules to avoid annual disruptions. Financial preparedness is also important, as highlighted by R6 and R14, stressing the importance of contingency funds and allocating extra funds for unexpected disaster-related costs. Proper project planning is essential, as R13 emphasised, to allocate internal and external works according to climatic conditions, and R15 suggested thorough risk assessment programs using technologies for the assessment. The importance of having insurance and alternative resource planning were also mentioned by R11 acknowledging the role of financial protection by stating *"Try to get insurance for the projects".* R17 added a supply chain resilience perspective, recommending that sub-contractors *"find alternative suppliers for the materials to ensure that disruptions do not stop the project*". In contrary, R2, R4, R5, R7, R8 and R9 indicated that developing proactive steps for disasters will not be always viable since the disasters are unpredictable. Moreover, they highlighted the COVID-19 situation as the example for a disaster, which could not be managed by the sub-contractors through proactive steps.

The data indicate, while some subcontractors are taking proactive measures through weather monitoring, financial planning, and structured project allocation, a significant portion lacks a well-defined and developed approach. Given the frequency and severity of disaster-related challenges, more comprehensive planning, financial security, and technological adoption should be encouraged.

4.6 RECOMMENDATIONS FOR THE CONTRACTUAL AGREEMENTS, GOVERNMENT POLICIES AND STANDARDS

A key area of focus for improving the ability of gaining the disaster-related claims was the clarification and specification of clauses within contracts. R2 suggested to introduce a clause that assists for sharing the risks between contractors and sub-contractors. This recommendation highlights the need for more balanced responsibility in the aftermath of disasters by ensuring both parties need to be in the situation for contributing equitably to the losses from the disaster.

Introducing more flexibility to the time limits for claims submission was another recommendation from the respondents on the contractual agreements. R7 emphasised the need for more adaptable timeframes, particularly during emergencies when delays might be inevitable. Further, R14 supported the opinion by stating *"Allow flexible timelines for claim submission"*. Several respondents highlighted the importance of clearer, more specific clauses developed for the needs of sub-contractors. R8, and R12 recommended for the introduction of specific provisions in contracts that prioritise sub-contractor claims in disaster-related situations by reducing the risk in the process. Further, R6 suggested *"Establishing a dispute resolution mechanism specific to disaster-related claims"* to reduce the issues after the disaster claims. Furthermore, R11 suggested for a unique recommendation as guiding to have specific clauses for price escalation for the sub-contractors by highlighting the issues created by pandemics and economic crisis.

Respondents further discussed about the changes needed at the government policy level to better support subcontractors and improve the fairness of disaster-related claims. Most of the respondents stated the need for the government to create policies that specifically consider the perspective of sub-contractors. R20 specified that current government policies do not focusing about sub-contractor's perspectives and suggested for the creation of policies that specifically address the unique challenges faced by the sub-contractors during disaster-related claims.

The need for clear definitions of force majeure events was frequently mentioned by the experts. R10, R15, and R16 all recommended the importance of defining a disaster and force majeure event in government policies or international standards. The suggestion would ensure that all parties are in the same situation regarding what events can result claims and prevent disputes over unclear terminology. Further, R15 proposed *"standardise EOT and cost claim guidelines, and establish faster dispute resolution mechanisms"*. Standardising the above-mentioned elements across the industry would create a more appropriate and transparent claim management process by reducing the risk of improper interpretations and disputes.

Moreover, the introduction of faster claim management mechanisms was suggested by R18 and R13. A quicker process for evaluating and granting the claim from the contractor would help to minimise the delays and ensure that sub-contractors are not left for extended periods while awaiting claims. Further, R19 proposed to *"introduce legal provisions that recognise pandemic-related delays as valid claims"*. According to the suggestion, the sub-contractors can ensure their EOT for pandemic delays without any disputes among the situations. Moreover, R13 tried to express the situation of small-scale subcontractors by mentioning that government needs to implement new regulations as supporting with disaster relief funding. The statement from R13 further clarifies the financial instability of the small-scale subcontractors after the disaster situation.

The data collected from the respondents clearly reflects a strong desire of the sub-contractors to reform in both contractual agreements and government policies related to disaster-related claims. There is a need for more flexible, specific, and transparent clauses that solve the unique challenges faced by the subcontractors. Further, government policies should be improved for providing more support to the sub-contractors, with clear definitions and faster claim management processes. By incorporating these changes, both the justice and efficiency for the disaster claim management process in the construction industry could be achieved. The subcontractors and other relevant stakeholders can use the identified proactive measures in managing disaster related claims in future. Further, the recommendations to incorporate in future policies and standards are necessary to protect the construction industry from the unexpected challenges due to disaster and efficiently manage the challenges.

5. Conclusions and Recommendations

The sub-contractors in the construction industry face significant challenges in managing disaster related claims. According to the Sri Lankan context, Tsunami, floods, heavy rains, landslides, civil wars, COVID-19 and cyclones were recognised as the major disasters that impacted the construction industry. Further, documentation issues, issues in evaluation of the claim, problems with main contractor, financial issues, lack of human resources, and risk management issues were identified as the main challenges faced by the sub-contractors in disaster claim management situations. Therefore, the disaster related claims and their impacts on sub-contractors in construction sector were analysed using semi structured interviews with 20 industry experts. The experts reflected that most of them were recently involved with the COVID-19 pandemic-related disaster claims. Further, other disasters that were identified in the literature review are also accepted by the experts. Furthermore, the claims granted, although affected the projects in a positive way and provided time to continue the project, were not sufficient to fully satisfy the needs of the sub-contractors. The mitigating process after the disasters, the risk management procedures, supply chain disruptions and economic crisis were the unforeseen issues faced by the

subcontractors during the disaster recovery situation which influenced the sub-contractors' ability to get granted with claims.

Further, the procedures sub-contractors followed during management of disaster related claims were examined. Checking the weather reports and historical data of the site, finding alternative access routes for the site, adjusting the works according to the climatic conditions are some of the important preparation methods currently following by the sub-contractors in protecting the project from the disaster. Further, the procedure followed by the sub-contractors for the preparation of the claims include checking the contractual liability of the claim, notifying the main contractor as soon as possible, collecting the evidence for the claim, submitting the detailed claims, and negotiating with the main contractor for granting the claim. However, the sub-contractors still face struggles during the claim process. Documentation issues, financial issues, inadequate knowledge, issues in evaluation of claims by stakeholders, lack of human resource, insufficient explanation in SBD 02 and issues with main contractor were the main challenges faced by the sub-contractors during the claims.

To overcome these challenges, this research provided the following best practices to be considered in future disaster-related claims management process:

- Maintain the records properly,
- Check the weather reports and plan the works accordingly,
- Send early notification to the contractors,
- Follow the government regulations,
- Keep extra time margin,
- Keep contingency money,
- Maintain a proper communication with the main contractor,
- Interpret the contractual documents,
- Get insurance for the materials, and
- Identify alternative suppliers to buy materials, when necessary.

However, the scope of the study was limited to only the disaster related claims submitted by the sub-contractors and data collection was limited to the experts working in small-scale construction organisations. Hence, this study can be extended by expanding the sample to different stakeholders including clients, main contractors and government authorities to obtain their views on the possibility of implementing above-identified best practices to minimise the challenges faced by sub-contractors in managing disaster-related claims in the Sri Lankan construction industry.

The findings of this research will be beneficial to the sub-contractor organisations in Sri Lanka as well as developing countries who share similar type of socio-economic conditions and face disasters similar to Sri Lanka. The research findings can be used by the sub-contractors and the construction industry practitioners to minimise the challenges faced by them in managing disaster-related claims in the Sri Lankan construction industry. Further, the government organisations and authorities can use the findings to develop sub-contractor friendly guidelines to safeguard them in disaster-related situations and ultimately to safeguard the industry as a whole.

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