



Preparedness Planning Associated with Systemic Risks and Actions during the COVID-19 Pandemic in Sri Lanka

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KEY FINDINGS

- Biological hazards and their impacts are not adequately addressed within current emergency and contingency plans for multi-hazard scenarios.
- Inadequate use of technological equipment for detection, monitoring, and forecasting of hazards has affected proactive measures for responding to multi-hazard threats.
- Disaster response and relief mechanisms need to better incorporate the special needs of marginalized communities, especially while following globally accepted standards.
- Diverse training and use of technological applications in evacuation, and search and rescue missions, should be enhanced.

The presence of a hazard does not prevent the occurrence of another hazard. Since hazards can expose the existing vulnerabilities in a community, concurrent hazards can synergize the disaster impacts. Now, climate-related hazards have become unpredictable and extreme, causing severe disruptions all over the world. Therefore, the likelihood of simultaneous hazards and compound events has significantly increased, as well as the potential of biological and natural hazards to overlap.

COVID-19 and concurrent hazards amidst the pandemic have already proven the synergized impacts of compound hazard events. The impacts of hazards such as storms, floods, cyclones, earthquakes, etc., have devastatingly affected vulnerabilities already exposed by COVID-19. It has revealed the challenges associated with multi-hazard threats. It has also emphasized the need to be proactive and to mitigate the impacts of systemic risk cascading from one level to another, rendering the failure of the whole system.

During the COVID-19 outbreak, Sri Lanka experienced heavy rainfall, floods, landslides, etc., in several parts of the country during monsoon seasons, cyclones, and low-pressure conditions. The impacts of the pandemic, such as travel restrictions, fear of infections, social unrest, unemployment, discrimination etc., hindered the response capacities for multi-hazard scenarios. These synergized impacts revealed weaknesses in the country's existing disaster preparedness measures, such as the lack of accuracy in hazard forecasting and inadequate evacuation shelter facilities.

To better identify the gaps in the existing Disaster Management (DM) mechanism in the country, researchers conducted a study on the preparedness planning associated with integrated, systemic risks at both national and local levels. This brief presents some key findings of the investigation, including recommendations related to early warning and risk communication, evacuation, search and rescue, and shelter management and relief services. These recommendations can benefit stakeholders in the disaster management mechanism.

RESEARCH OVERVIEW

This research work was conducted as part of the broader study focuses on addressing two specific challenges: 1) the integration of COVID-19, pandemic and biological hazard preparedness as part of multi-hazard early warning; and 2) mainstreaming tsunami, biological and multi-hazard preparedness into urban planning for coastal regions. The partners of the project include institutions from the United Kingdom and Sri Lanka. The data collection process to address the objectives of the study was conducted in both Sri Lanka and Indonesia. This brief relates to the study and findings carried out in Sri Lanka.

Research work in Sri Lanka was conducted by researchers from the Department of Civil Engineering, University of Moratuwa. The data collection process was supported by officials from the National Disaster Management Centre and Ministry of Health, Sri Lanka. In this research work, researchers focused on current practices for preparedness planning associated with integrated, systemic risks at both national and local levels. In addition, it addressed the preparedness and response strategies taken during the COVID-19 pandemic to mitigate the impacts of concurrent hazards, such as heavy rainfall, floods, landslides, etc.

The data collection process involved a thorough review of secondary data, including policy and legal documents, national and international reports, scholarly articles, and internet sources. Further, primary data was collected through in-depth interviews conducted with twenty-seven purposively selected key informants engaged in disaster management in Sri Lanka. The selected key informants represented

1. national and local disaster management coordination units,
2. members of the National Disaster Management Council,
3. technical agencies,
4. public health agencies,
5. military forces, and
6. Non-Governmental Organizations (NGOs).

Interviews were conducted using a semi-structured interview schedule that addressed three key aspects: early warnings and risk communication; evacuation, and search and rescue; and, shelter management and relief services. Findings of both primary and secondary data collection were analyzed under three main areas to identify current practices and gaps in preparedness planning for multiple risks, and actions taken during COVID-19.

RESULTS

Legal establishments for early warning dissemination in Sri Lanka

As per legal provisions made by the Sri Lanka Disaster Management Act No.13 of 2005, the Disaster Management Centre [DMC] disseminates Early Warnings [EW] to the grass-root level through the national early warning system. Although early warnings can be disseminated by technical agencies, which generate EW, evacuation orders are issued only by the Director-General, DMC, as per the Act. Furthermore, District Secretaries are authorized to issue evacuation orders for regional hazards. However, several instances were reported of unnecessary actions due to the dissemination of evacuation orders by unauthorized agencies. Furthermore, officials responsible for disseminating EW to the public are not legally enforced at the village level, and their roles are not legally mandated.

Outmoded disaster management plans

The most recent national disaster management plan covered the period 2013 to 2017 and has not been updated in recent years. Since the Sendai Framework for Disaster Risk Reduction replaced the Hyogo Framework for Action (SFDRR) in 2015, the disaster management plan in Sri Lanka is expected to be aligned with the SFDRR. The planned national disaster management plan for the next period is still under development and validation process. Furthermore, the existing emergency operation procedures have not been adequately tested and updated. Therefore, the complexity in executing these procedures is high, and overlaps can be observed in most cases. Furthermore, several relief services are not included within the emergency operation plans.

Integration of biological hazards and multiple risks into disaster risk management plans

Although existing disaster management plans in the country consider biological outbreaks a hazard, they do not incorporate the impacts of biological hazards on preparedness and response capacities for concurrent hazards. For example, contingency plans of agencies related to disaster management mechanisms do not adequately include mitigation measures for pandemic impacts on their response capacities. Existing infrastructures pertaining to disaster management mechanisms in the country do not sufficiently support the safety and effectiveness of preparedness and response measures. The safety of healthcare infrastructures against disaster is also not adequate in most cases. Moreover, current disaster preparedness plans do not have much focus on hazards such as flash floods, landslides, marine disasters, fires, and chemical, biological, radiological and nuclear (CBRN) threats.

Insufficient use of technological platforms in the Multi-Hazard Early Warning environment

Sri Lanka lacks automated hazard monitoring systems that are user-friendly, accessible to the public, and remotely accessible for officials. Although the extensive use of hazard forecasting models is recommended for accurate warnings, the Sri Lankan EW system does not have adequate technological capacities. In remote areas, the use of technological platforms has become problematic due to frequent network and power failures. The general public still relies more on traditional modes of communication such as television and radio, although the use of technological platforms such as social media, dedicated apps, etc., for EW dissemination has become a global trend. Despite this, there are some examples of technology being used, such as the SAYURU EW message system, an initiative by the Department of Fisheries and Dialog Axiata PLC, which has recently become more popular.

Lack of adherence to standards in disaster response and relief services

Special needs of vulnerable and marginalized communities are not adequately addressed within existing disaster management plans and frameworks, although several government and non-government agencies have taken measures such as child and gender-friendly disaster management. Implementation of globally accepted standards in relation to emergency shelter management is currently at a low level due to reasons such as type of disasters, unavailability of resources in certain areas, unawareness of standards, restricted access to information, etc.

RECOMMENDATIONS

EARLY WARNING AND RISK COMMUNICATION

1. Increase the effectiveness of detection, monitoring and forecasting of hazards

- a. Sri Lanka needs to use more automated monitoring systems that are user-friendly and more suitable for the climatic and environmental conditions in Sri Lanka. Remote access to these monitoring systems should be more improved.
- b. The precision of hazard forecasting in Sri Lanka should be improved through temporal and spatial warnings, thus increasing the lead time. In this regard, technological applications should be more employed to model and predict hazard events. The extensive use of seasonal and weather forecasting models can enhance the accuracy of warnings.

2. Improve the last mile dissemination of EWs

- a. Authorities should have more focus on disseminating EWs to remote areas in a timely manner. In this regard, megaphones and alarm systems can be utilized to disseminate warnings to a larger area. Therefore, investigations should be conducted to enhance the use of technological platforms for EW dissemination. For instance, research studies have shown that people like to receive EWs as text messages.
- b. The existing legal framework for DRM should be strengthened to enforce officers at the grass-root level. These existing policies and plans should be revised to eliminate the complexity and duplications in procedures, and include NGOs/INGOs and private sector organizations in the EW mechanism without power struggles.

3. Increase the community awareness and risk knowledge of public

- a. Community awareness is paramount in reducing the reluctance of people to comply with early warnings. Improving the public trust in DM authorities and technical agencies is also significant. In this regard, training and awareness campaigns can enhance risk knowledge on multiple hazard scenarios.
- b. As a preparedness measure in risk communication, risks maps should be developed and updated with affected areas, facilities, available resources, locations of responsible agencies, etc., to support the response mechanisms.

RECOMMENDATIONS (CONTINUED...)

EVACUATION AND SAR

1. Improvements in disaster preparedness drills and training

- a. The Sri Lankan DRM mechanism should focus on preparedness drills for hazards such as fires, marine disasters, CBRN hazards, flash floods, landslides, earthquakes [although earthquakes have not been reported at the moment, a few tremors were reported recently], and hybrid hazard scenarios as well.
- b. The involvement of NGOs in training and evacuation drills should be enhanced to acquire possible resources [e.g., internal communication system, separate tracking methodologies].
- c. The attitude of the general public should be diverted from response to preparedness through training campaigns.

2. Strengthening Search and Rescue services

- a. High dependency on tri forces for evacuation and SAR should be reduced by establishing and training more teams with a variety of expertise. Primarily, community-based organizations should be formed for research and rescue (SAR) missions. For instance, selected participants from a community closer to a river can be trained for rescuing drowning victims.
- b. The process of training campaigns for SAR teams should be improved. In this regard, conducting training campaigns for Sri Lankan response teams with rescue units from countries such as India, Indonesia, Myanmar, etc., is vital.
- c. SAR techniques such as canine search, drones, thermos-sensitive equipment, GPS tracking, etc., should be more extensively utilized in SAR missions.

3. Inclusion of special needs of marginalized and vulnerable groups

- a. Special provisions should be taken to address the needs of already vulnerable and marginalized communities during the evacuation process. For instance, transporting facilities, language support, child-friendly services, media ethics, etc., should be more improved.
- b. Pictorial boards in all three languages can be used to communicate while establishing and maintaining evacuation signs.

RECOMMENDATIONS (CONTINUED...)

SHELTER MANAGEMENT AND RELIEF SERVICES

1. Establishing a multi-sectoral approach for evacuation shelter planning

- a. The shelter management planning process should include the safety of shelters, impacts of biological hazards, issues of vulnerable communities, living standards of victims, maintaining the supply chains of resources, etc. For instance, the selection of safety locations can be based on risk maps developed for hazards.
- b. Community participation in shelter planning should be increased. Especially, people's attitudes need to be developed in responding to disasters and following health guidelines.
- c. Support from the community should be pre-planned rather than receiving it in an ad-hoc manner.

2. Pre-planning necessary procedures for acquiring space for shelters

- a. Since overcrowding can occur in already identified shelter locations, there should be an established plan to acquire additional space in an emergency. The plan should consist of factors such as approval procedures, order of turning these places into shelters, responsible stakeholders and their roles, and waste disposal and cleaning procedures before handing back.

3. Improving the adherence to globally accepted standards

- a. Sri Lanka needs to adapt globally accepted camp management standards to the national context.
- b. The inclusion of the needs of vulnerable and marginalized communities in shelter management is paramount. Those issues should be included in need assessment forms that are currently used in the Sri Lankan context.
- c. Within sheltering sites, continuous patrolling is needed around the premises to monitor the safety of victims.
- d. In order to implement and practice minimum standards within shelters, continuous training should be provided for officials in relation to shelter management practices.