Review of Disaster Response Management Challenges from War Operations and Terrorism in Iraq

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Abstract

The entire world is facing an unprecedented scale of disasters with increasing frequency and intensity. We live in a world which has been dominated by crises and natural and man-made disaster. Poverty, epidemics, famine, terrorism, wars, fires, collapsing buildings, volcanoes, earthquakes, hurricanes and floods, are only some examples of many of the crises and disasters which need serious cooperation and solidarity to overcome, particularly in Iraq, which has suffered from military operations and terrorist activity over a number of years.

Although various scholars have researched issues regarding disaster management, few have studied the response management challenges due to the disaster of war operation and terrorism in Iraq. Not much empirical data is available in this field. In this paper, a review of the relevant literature on challenges and obstacles during war operations and terrorism has been conducted by carrying out a comprehensive literature review. This literature includes central and local government ordinances, regulations and reports as well as some research papers.

An attempt has been made to explore the challenges facing disaster response management in Iraq. This exploration focuses on the achievement of the basic functions of management operations (planning, organizing, directing, controlling). The study also seeks to explain various types of challenges facing disaster response management in Iraq.

The findings conclude that challenges and obstacles in Iraq's disaster response management system are concentrated in the planning and organizing stages. This paper also reveals that adequate disaster response management strategies in Iraq are still lacking.

Keywords: Disaster response management, war operations, terrorism, Iraq, planning, organizing, directing, controlling

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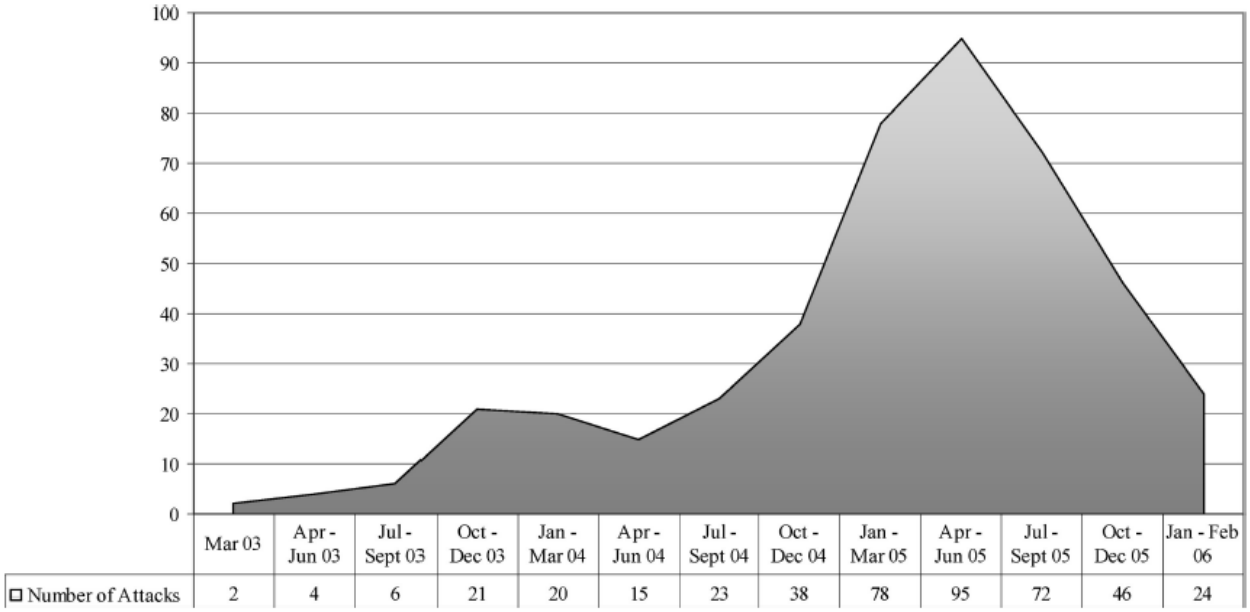
1. Introduction

'Disasters' have become a common word to people all over the world. The entire world is prone to natural disasters as well as to sudden man-made ones, which have been happening frequently in recent history [1]. It is commonly agreeable that there is no way of neutralizing all negative effects resulted from disasters. However, efforts can be made in order to reduce their impacts. In this regard, effective disaster management is a key element in good governance [2] cited in [3]. Because of the increases in the number of natural disasters and terrorist attacks in many countries around the world, Disaster management has gained importance in the policy programs of various countries [4].



	Mar 03	Apr - Jun 03	Jul - Sept 03	Oct - Dec 03	Jan - Mar 04	Apr - Jun 04	Jul - Sept 04	Oct - Dec 04	Jan - Mar 05	Apr - Jun 05	Jul - Sept 05	Oct - Dec 05	Jan - Feb 06
Number of Attacks	2	4	6	21	20	15	23	38	78	95	72	46	24

Figure 1: Number of suicide attacks in Iraq by quarter, 2003–2006 [6 p. 601]

Moreover, continuing terrorist attacks worldwide are likely to sustain attention to disaster response management, particularly in Iraq. Violence in Iraq has also become normalized, ranging from the Iraqi and US military assaults and sectarian militias, threat of suicide bombings, to violent street crime [5]. According to Hafez [6] 443 suicide attacks took place in Iraq between 22nd *of* March 2003 to 20th *of* February 2006. See Figure 1. Furthermore, due to the development of insurgency after the U.S.-led invasion in March 2003, the lethality of suicide attacks has increased significantly. See Figures 2. As a result Iraq was ranked number 1, out of the top 10 countries most at risk of terrorism. As shown in table 1.

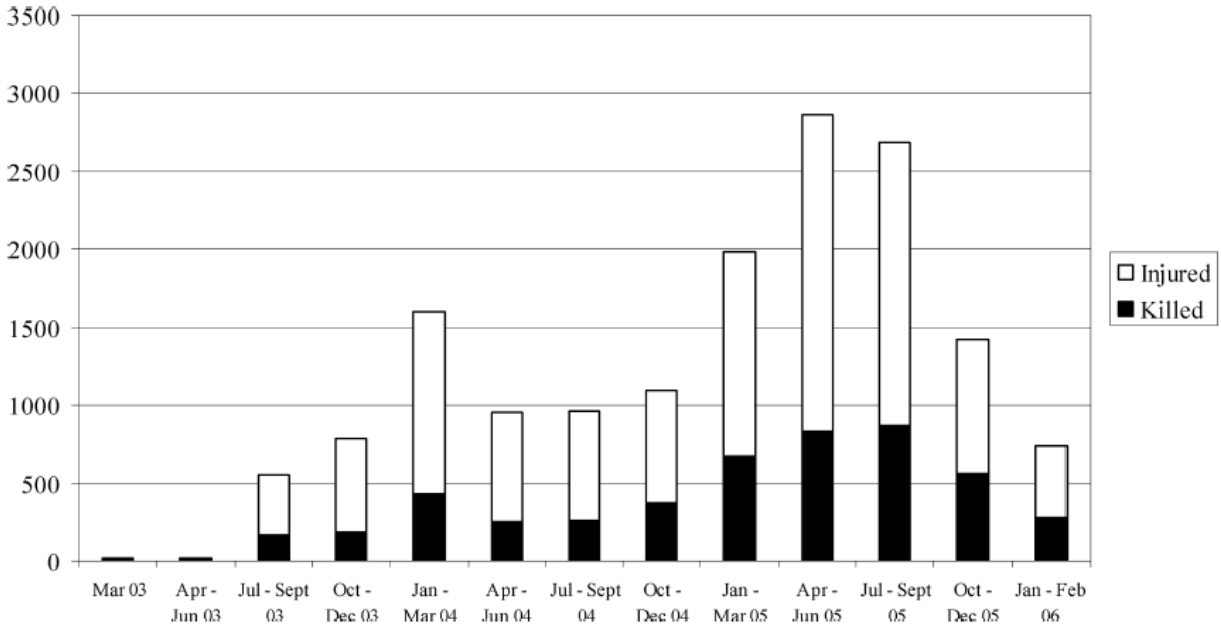


Figure 2: Number of persons killed and injured in suicide attacks by Quater, 2003–2006 [6 p. 606]

According to Goodyear [7] a comprehensive and coordinated disaster management system of risk management is lacking in Iraq which includes a risk analysis based on an examination of hazards and the vulnerabilities and capacities of resident populations and the first responders charged to assist in times of emergencies. As a consequence, stronger infrastructural and technical capabilities within the Government of Iraq (GoI) are needed imperatively to plan for, mitigate and respond to future disasters in Iraq. Furthermore, historically, in Iraq, the response to the disasters have largely remained ad-hoc and reactive in nature [8]. Thus, this paper will first highlight the concept of disaster in general and disaster response management in particular, and then the extent to challenges facing disaster response management in the world and particularly in Iraq will be examined by looking at some examples.

Table 1: Top 10 Countries Ranked by Terrorism Risk, 2010 [9 p. 118]

Rank	**Country**
1	Iraq
2	Afghanistan
3	Pakistan
4	Somalia
5	Lebanon
6	India
7	Algeria
8	Colombia
9	Thailand
10	Philippines

2. Disaster Definitions

In order to better understand the concept of disaster, it is first important to provide the origin of the term disaster. The French word “desastre” is combined of two words ‘des’ meaning bad and ‘aster’ meaning star. Thus the term refers to ‘bad or evil star’ [10]. Many researchers have defined disaster in their research. One of the famous researchers in the field of disaster, Fischer III [11 pp. 2-3] identifies the concept of disaster as “actual or threatened accidental or uncontrollable events that are concentrated in time and space, in which a society, or a relatively self-sufficient subdivision of a society undergoes severe danger, and incurs such losses to its members and physical appurtenances that the social structure is disrupted and the fulfilment of all or some of the essential functions of the society, or its subdivision, is prevented”. In a similar way, Fritz [12 p. 655] and Lindell [13 p. 797] state that disaster is “an event concentrated in time and space, in which a society or one of its subdivisions undergoes physical harm and social disruption, such that all or some essential functions of the society or subdivision are impaired”.

3. Disaster Management

The following is a brief review on a disaster management definition. Lettieri, Masella, and Radaelli [14 p. 117] defined disaster management as administrative decisions and the body of policy, the actors, the operational activities and technologies that relate to the several phases of a disaster at all levels. Dey [10] and Vasilescu, Khan, and Khan [15] agree with this view, stating that it includes all the activities and the programmes which help to avoid, reduce impact or recover from disaster loss, and these can be implemented before, during or after a disaster.

3.1 Disaster Management Cycle

In order to better understand the importance of the disaster response phase in the disaster management cycle, it is first important to provide a definition of what disaster management cycle are. According to Warfield [16] cited in Vasilescu et al. [15] the disaster management cycle represents the ongoing procedure by which governments, civil society, and businesses plan for and decrease the influence of disasters, react during and immediately following a disaster, and take steps to recover after a disaster has occurred. Suitable actions at all cycle phases cause better warnings, greater preparedness, reduced vulnerability or the forbidding of disasters during the following repetition of the cycle. He also added that the whole disaster management cycle contains the modelling of public policies and plans that either modify the causes of disasters or mitigate their effects on people, property, and infrastructure. Although Iyer and Mastorakis [17 p. 3] point out that the disaster management cycle has four stages, risk reduction, readiness, response and recovery, Gospodinov and Burnham [18 p. 28] divided the disaster cycle into four phases, namely, response, reconstruction, mitigation and preparedness see Figure 3.

Figure 3: Disaster cycle [18 p. 28]

4. Disaster response management

Having defined what is meant by disaster management cycle, disaster response management definition will be reviewed. According to EMA [19 p. 32] response is an "actions taken in anticipation of, during, and immediately after an emergency to ensure that its effects are minimised, and that people affected are given immediate relief and support". In the same way, Vasilescu et al. [15 p. 47] defined response activity as initiatives are taken in response to a disaster with a purpose to achieve early recovery and rehabilitation of affected communities, immediately after a disaster strikes.

4.1 Response management challenges

Much research have dealt with disaster response management, however, some of it reveal many challenges faced disaster response management in different aspect and in various countries.

Beginning with disaster response management framework and factors, according to Cardona [20] the difficulty in achieving effective disaster risk management are due to the lack of a comprehensive conceptual framework of disaster risk which assist a multidisciplinary evaluation and intervention. Cardona [20] emphasis that intervention should be invited because most evaluation techniques and existing indices have not been sufficiently expressed risk and are not based on a comprehensive approach. Similarly, Baker and Refsgaard [21] stated that an adoption of new frameworks was required to make an institutional development in disaster response. Whilst, Baris [22] explained that weak awareness and lack of action of population and institutions is resulted from a lack of knowledge of modern disaster risk factors. Similar to Rudman, Clarke, and Metzl [23] who stated that due to the lack of preparedness standards, it is impossible to recognize exactly what is required and how much it will cost. Pelling et al. [24] added for this concern that devising the tools required for policy makers are considered one of the challenges for integration to make transparent justifications for development policy and the closer operation of disaster. Regarding disaster response program integration, Unlu et al. [4] claim that the success of multi-task response actions rely on the disaster and crisis management integration of programs prepared in diverse disciplines and organisation of a generated cooperation. Chen , Wu, and Lai [25], on the other hand, shed light on the development of supporting ordinances and regulations at different government levels that are needed for the operation of the disaster management system in Taiwan.

A large and growing body of literature has investigated coordination problems. One of this literature Meissner, Luckenbach, Risse, Kirste, and Kirchner [26] study which revealed that in order to save lives and property, disaster response and recovery efforts required coordination and timely interaction of public emergency services. In addition, According to Chen, Sharman, Rao, and Upadhyaya [27], the issue of coordination in the context of emergency response is an understudied research. It is considered an important problem, as it impacts life and property in the affected area. In similar way Unlu et al. [4] describe coordination and management of first-response operations during crises are problematic and ineffective. Particularly, the Turkey system is not designed for different types of crises such as terrorist attacks. While also in Turkey, organizational and institutional problems were found in organizing a suitable disaster management and response system [22]. Whilst, a lack of direct coordination among first responders is considered one of the major operational problems experienced during hurricane Katrina [28]. Moreover, According to Saeed [29] the main problem in disaster response management which lies at the coordination and collaboration of activities of different organizations involved both at the inter- and intra-organization level. Baris [22] argues that the impacts of disasters are dramatically exacerbated due to the absence of a single organizational structure focused on disaster management. Within the same context, Greiving et al. [30] stated that due to a lack of coordination between involved actors; current management of disaster risks is often fragmented. Such fragmentation of responsibilities should be regarded during any coordination of activities. Greiving et al. [30] called this phenomenon as the “problem of interplay” which is defined as a result of the presence of a multitude of actors. Furthermore, IRGC [31] cited in Greiving et al. [30] pointed out problems related to organisational capacities for responding to or monitoring risk as major deficits of current risk governance.

Within the context of hierarchy problems, Baris [22] believed that the abundance of too many units may cause sometimes hierarchy problems when responding. However, Meissner et al. [26] noted that there is a need for both intra and inter organization coordination at several hierarchy levels in order to react not only individually and efficiently, but also in a coordinated manner.

In Pakistan, as regards the coordination between the donor countries and the end beneficiaries, coordination problems have been existed during Pakistan’s 2005 earthquake [32], While in the Southeast Asian region, disaster relief agencies face a number of key challenges that limit their capacity to respond effectively to disasters. Poor coordination between relief agencies and the local government has been resulted [33] from the lack of support from the government of the country struck by disaster. Such lack of support is considered the main stumbling block that hampers disaster relief operations [34]. On the other hand, Fisher [35] stated that the right to deny relief agencies access to disaster-struck country territories has been retained by the government of the disaster-struck country through the primary phase of a disaster relief operation, particularly if the influenced areas are replete with conflict. Relief agencies, in such a situation, have little recourse to international legal preparations to obtain primacy entrance to disaster areas or oblige the government to accept entrance.

In the case of United States, a "gap" happens between the emergent norms that direct social interactions and the bureaucratic norms that dominate governmental activity. It is widely believed

that there is a failure in the relief effort when this gap is large, but when the gap is small the relief effort progresses smoothly, and governmental operations are perceived to be successful [36].

It is widely believed that in the United States the organizational response was typically deviant and chaotic and is unproductive in defeating the long-term goals of the terrorists, though, in Turkey, the institutional organization for disaster management and planning has a chaotic nature, namely the responsibilities and duties of some of the institutions often make confusions [22]. Baris [22] noted that the disaster risk reduction system of Turkey is still mainly centralized. However, Unlu et al. [4] point out that Centralized and decentralized systems have various tasks in various conditions. Despite the centralized organization of the Turkish Crisis Management System provides the government more coordination and control over resource distribution, involvement responsibility with various ministries and national organizations generates a coordination problem [4]. Nevertheless, Smirnov, Levashova, Pashkin, Shilov, and Komarova [37] emphasis on the decision that had been made about future research to concentrate on decentralisation of the decision support system evolution. Smirnov et al. [37] added that such choice can be accomplished through presenting of self-organizing networks.

Regarding planning process, Chen et al. [25] stated that planning process is very critical. Additionally, Planning is essential to being able to take effective and prompt action [38]. However, Saeed [29] noted that the plans of the organizations can be challenged by the unexpected events and dimensions of the disaster. Further, Perry and Lindell [39] pointed out that continuing terrorist attacks worldwide are likely to enhance attention to emergency planning, especially in Western democracies. Whilst, Schneider [36] emphasis that the dependence upon the extent to which post disaster human behaviour corresponds to prior governmental expectations and planning is the key to a successful governmental response. According to Uhr, Johansson, and Fredholm [40] Both the literature and empirical findings indicate that sometimes response operations diverge from existing plans when adapting to an event and its consequences. In the same context, Saeed [29 pp. 3-4] explained that due to the dynamic situation in a disaster, new activities (which have not occurred before) may be required apart from those already planned. So the system should allow ad-hoc creation of activities and dependencies by the command centre or the field teams. Saeed [29] added that new plans have to be made and incorporated with old plans and plans of other organizations. Based on the magnitude of the disaster, one organization might establish more than one command centre. There can be one or more field teams controlled by a command centre. Within the same context, Banipal [28] noted that dependence on the central dispatch centre is considered one of the major operational problems experienced during hurricane Katrina. Banipal [28] explained that due to highly dependent on the central dispatch centre to coordinate emergency response, it is not only prone to human error but also to the events that can influence the command centre including disruption of power, floodwater damage to the building and wind damage to communication antennas, leaving the field officers on their own as it happened in New Orleans.

In the context of creating plans for terrorist incidents, in the US, two problems have arisen. Firstly, the assertion on the existence of a plan as a document rather than an assertion on the planning procedure brings positive outcomes for the threat. Secondly, the literature on planning

for technological and natural disasters has a general lack of awareness in terms of policy actors, elected officials and law-enforcement officials who guide much of the terrorism plan creation [41] and [42] cited in [39 p.336]. However in Taiwan, Chen et al. [25] found a phenomenon that is very analogous to the findings of Lindell, Whitney, Futch, and Clause [43] and Lindell and Perry [44] that lacking full time staff support had significant impact on the effectiveness of the Local Emergency Planning committees in the US. Moreover the planning process doesn't include other organizations, let alone community contribution. Many supporting organizations don't even know what their jobs in the disaster management technique are. Lindell et al. [43] and Lindell and Perry [44] had analogous findings on this matter in the US. Consequently, According to McLoughlin [38] there are opportunities to improve future responses invariably once a government responds. Evaluations are critical to such improvements and should be conducted shortly after the incident while memories are still fresh. The conclusions from these evaluations should be fed back into the planning process.

With respect to providing the right relief supplies for people in need at the right time, it is considered one of the most difficult steps in responding to disasters and emergency situations, as shown by Practice. At the same time sending wrong or too many supplies means losing resources and time [37]. In addition, the effective mobilization of response to extreme events on a large scale is considered one of the least understood problems in public management. So the knowledge base to support response operations in such an event needs to be scalable [45]. Larson, Metzger, and Cahn [46] also states that local first-responder resources are often overwhelmed by large-scale emergency incidents, such as acts of terrorism, human-caused accidents, and acts of nature. While the delays in deployment and mis-targeting of aid concerned is considered one of the shortcomings in federal emergency response, precisely by the Federal Emergency Management Agency, FEMA, during the 2005 Katrina flood [21]. Thus, If the nation does not take immediate steps to better identify and address the urgent needs of emergency responders, the next terrorist incident could have an even more devastating impact than the September 11 attacks [23].

On the other hand, effective response to both natural and man-made disasters requires assessing information prior to, during, and after potentially catastrophic events as well as initiating activities that will lessen their impact upon society [47].

As regards communication, during the 2005 Katrina flood, Failures in communication is considered one of the shortcomings in federal emergency response [21]. However, Banipal [28] found that the inter-operability issue was a major operational problem experienced during hurricane Katrina. Because of the existing system was not scalable enough to support hundreds of additional users, the out of state volunteers were unable to use it. Consequently, to manage the disaster response processes effectively and efficiently the support of ICT is considered a desirable feature [29].

Regarding the financial resources, according to Rudman et al. [23 pp. 1-3] America's emergency preparedness efforts are hampered by some obstacles. Funding for emergency responders that was stalled and sidetracked is considered a major obstacle due to:

a) The slow distribution of funds by federal agencies.
b) A politicized appropriations process.
c) Bureaucratic red tape at all levels of government.

However, Taiwan local government did not have enough budgets to perform all four phases of disaster management [25]. While in Turkey, strong financial resources are needed to agencies responsible for DRR (disaster risk reduction) activities. Such resources are become inadequate when distributed between several units [22].Whilst in Europe, funding is fragmented because fragmentation phenomenon was appeared, in prevention of risk caused by natural hazards, between spatial planning and civil protection [48] cited in [30].

In the domain of disaster response, minutes of delay can cost lives and property, so speed is typically essential. Nevertheless, speed of response must be balanced with good planning and smart assessment to avoid actions that are precipitate and probably counterproductive [49]. Perry & Lindell [39] agree with this view by pointing out two important points. Firstly, quick reactions based upon wrong hypotheses or inadequate information can lead to insufficient protective measures. Secondly, threat assessment is critical and must be performed constantly, even during stages of disaster effect. Moreover, Banipal [28] noted that quick response to disaster has the potential to significantly reduce total loss. Nonetheless, Quarantelli [50] has argued that appropriateness of response is much more crucial than speed.

According to Baris [22] Despite the education about disaster risk is offered in primary and high schools, there is no organized educational program for the general public. There was no consideration for developing standards for community organizations and public education, reaching the public at active, large participation, producing of training materials and training the trainers. However, Harding [51] concluded that social development strategies and human rights principles should be promoted by professionals through political practice and within social work education to face man-made disasters. As a result a social work would be given a central role in avoiding human-made disaster and in reconstruction and development following disaster.

5. Conclusions

It is widely acknowledged that new kinds of catastrophes around the world display that the old-fashioned disaster management style does not work effectively. New catastrophes for instance terrorist attacks and big-scale natural disasters induce governments to design a disaster management that is more effective. Specially, the September 11 terrorist attacks had a major influence on other countries' disaster management paths. Iraq one of these countries which had a lot of wars and terrorist attacks in the last few decades. To have an overall picture about the challenges facing Iraq's disaster response management, an overview for literature has been conducted to highlight the challenges facing disaster response management around the world. Such challenges will set out the next step in PhD research way.

This paper revealed that more challenges facing disaster response management had appeared around the world. Planning and organizing stages in disaster response management have a majority of these challenges. Regarding response planning stage, it is widely acknowledge that the divergent of response operations from existing plans are considered one of the key challenges in this stage. While, there is a lack of knowledge of modern disaster risk factors. Further, supporting ordinances and regulations at different government levels should be developed. Furthermore, to reach integration in disaster management, multi-task response actions should be obtained as well as strong financial resources are needed. However, in terms of response organizing stage, organizational and institutional problems such as coordination and collaboration of different organizations "problem of interplay", hierarchy problems, coordination between the donor countries and the end beneficiaries and deviant and chaotic nature in institutional organization are considered the key challenges in organizing stage. Whilst the dependence on the central dispatch center and communication's failures are considered major operational problems in Response directing stage, the effective mobilization of response to extreme events on a large scale is considered one of the least understood problems in response implementation stage. However, in terms of response control stage, evaluations should be conducted to improve future responses.

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