



## **Knowledge-based issues for aid agencies in crisis scenarios: evolving from impediments to trust**

Rajeev K Bali, Russell Mann, Vikraman Baskaran, Aapo Immonen, Raouf Ng Naguib, Alan C. Richards, John Puentes, Brian Lehaney, Ian Marshall, Nilmini Wickramasinghe

### **► To cite this version:**

Rajeev K Bali, Russell Mann, Vikraman Baskaran, Aapo Immonen, Raouf Ng Naguib, et al.. Knowledge-based issues for aid agencies in crisis scenarios: evolving from impediments to trust. International Journal of Information Systems for Crisis Response and Management, 2011, 3 (3), pp.16 - 34. 10.4018/jiscrm.2011070102 . hal-02166111

**HAL Id: hal-02166111**

**<https://hal.science/hal-02166111>**

Submitted on 8 Jun 2021

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

# Knowledge-Based Issues for Aid Agencies in Crisis Scenarios: Evolving from Impediments to Trust

*Rajeev K. Bali, Coventry University, UK*

*Russell Mann, Coventry University, UK*

*Vikram Baskaran, Ryerson University, Canada*

*Aapo Immonen, Coventry University, UK, and Emergency Services College, Finland*

*Raouf N. G. Naguib, Coventry University, UK*

*Alan C. Richards, Coventry University, UK*

*John Puentes, Télécom Bretagne - Campus de Brest, France*

*Brian Lehaney, University of Wollongong in Dubai, UAE*

*Ian M. Marshall, Coventry University, UK*

*Nilmini Wickramasinghe, RMIT University, Australia*

## ABSTRACT

*As part of its expanding role, particularly as an agent of peace building, the United Nations (UN) actively participates in the implementation of measures to prevent and manage crisis/disaster situations. The purpose of such an approach is to empower the victims, protect the environment, rebuild communities, and create employment. However, real world crisis management situations are complex given the multiple interrelated interests, actors, relations, and objectives. Recent studies in healthcare contexts, which also have dynamic and complex operations, have shown the merit and benefits of employing various tools and techniques from the domain of knowledge management (KM). Hence, this paper investigates three distinct natural crisis situations (the 2010 Haiti Earthquake, the 2004 Boxing Day Asian Tsunami, and the 2001 Gujarat Earthquake) with which the United Nations and international aid agencies have been and are currently involved, to identify recurring issues which continue to provide knowledge-based impediments. Major findings from each case study are analyzed according to the estimated impact of identified impediments. The severity of the enumerated knowledge-based issues is quantified and compared by means of an assigned qualitative to identify the most significant attribute.*

**Keywords:** *Crisis Management, Knowledge-based Issues, Knowledge Management, Modeling, United Nations (UN)*

## INTRODUCTION

The United Nations (UN) is an international organization that was founded in 1945 to maintain global peace and security. Since its inception, the UN has expanded its role. These additional roles relate to developing friendly relations, promoting social progress, elevation to higher standards of living and better living standards, and upholding human rights (United Nations, 2010). In 1994 the UN introduced the concept of human security as part of the United Nations Development Programme (UNDP) Human Development Report (UNDP, 1994). The report was published in an effort to commend the virtues of sustainable human development which not only generates economic growth, but also promotes equal distribution of benefits to those worst affected by the crisis (UNDP, 1994). The purpose of such an approach is to empower the victims, protect the environment, rebuild communities, and create employment (UNDP, 1994). This concept was born out of a need to react to the changing elements of crisis situations and includes new security threats, international failures, civilian impact, a lack of preventative measures, globalization, and international advocacy (Comprehensive Crisis Management, 2008).

In recent years, and in accordance with human security, the UN has directed its focus away from peacekeeping and more towards peace building (Benner et al., 2007). With respect to this, the UN has looked to implement preventative measures in order to avoid crises. Crisis management can be multi-faceted and involves the prevention of crises, the development of preparedness measures, the course of relief and recovery, and the identification of a redevelopment process in the crisis aftermath.

This paper will discuss the efficacy of contemporary KM for crisis scenarios, the need for increased (associated) information sharing, greater teamwork and reduced duplication of effort. Finally, the paper lists a number of impediments that need to be broken down before a knowledge-based solution can be developed.

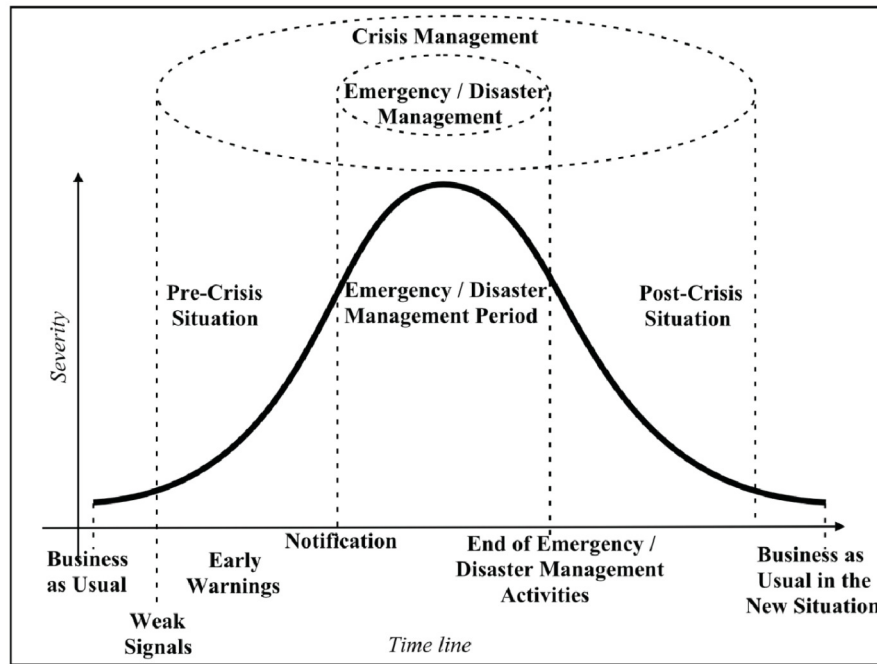
## THE CYCLICAL NATURE OF CRISES

The crisis management cycle is best captured by a schematic which shows the severity of the each incidence against a given timeline, plotting all contributing factors in a pre and post-crisis situation (Figure 1). The curve also identifies when weak signals are felt and any escalation into early warning signs thereafter; culminating in full-blown crisis which needs management to contain and/or minimize resultant impacts on society. Other work (Jennex & Raman, 2009) has described crises as a series of four phases: situational analysis (SA), initial response (IR), crisis response (ER), and recovery response (RR); and five decision/hand off points: the initiating event (IE), the control event (CE), the restoration event (RE), the normalizing event (NE), and a terminating event (TE).

## CHALLENGE

When society discovers *a priori* signals that can lead to crisis, then the governing authority reacts through preventive diplomacy to return order to the system if the crisis is manmade. If the crisis is natural, then society instigates preventive strategies, i.e., building earthquake proof buildings, tsunami resistant coastlines, etc. These preventive steps may minimize loss of life and damage to property whilst ensuring that day-to-day activities continue as unaffected by change as possible. This ideal situation is seldom achieved; rather than being proactive, society is usually reactive, resulting in ineffective and inefficient responses to crisis situations in most instances. Many major crises have been experienced over time; such major crises attract a multitude of aid agencies hoping to provide assistance and alleviate suffering for those worst affected by such situations. This mass influx of agencies can often add further complexity to an already difficult situation. Lack of ownership, trust, coordination, communication, and knowledge transfer between international aid

Figure 1. Crisis and Disaster Management Curve (adapted from Immonen et al., 2009)



agencies, International Inter-governmental Organizations (IGOs) and Non-Governmental Organizations (NGOs) can often be complicated or nonexistent: as a result the entire mission can be compromised.

Aid agencies and NGOs play vital roles in managing such crisis situations. Inadvertently they may conceal information which they regard as insignificant which is in fact vital to another stakeholder within the crisis domain. Without necessary systems, ownership and trust being in place, opportunity to provide appropriate aid may be severely hampered. Furthermore the clarity of an agency's role within a crisis situation can often be ambiguous and undefined. With no clear definition as to what they are attempting to achieve, and without the necessary guidance, problems can become apparent. The identification of clear leadership, coordination, and trust between organizations is of paramount importance: as such the ability to measure performance of vital importance.

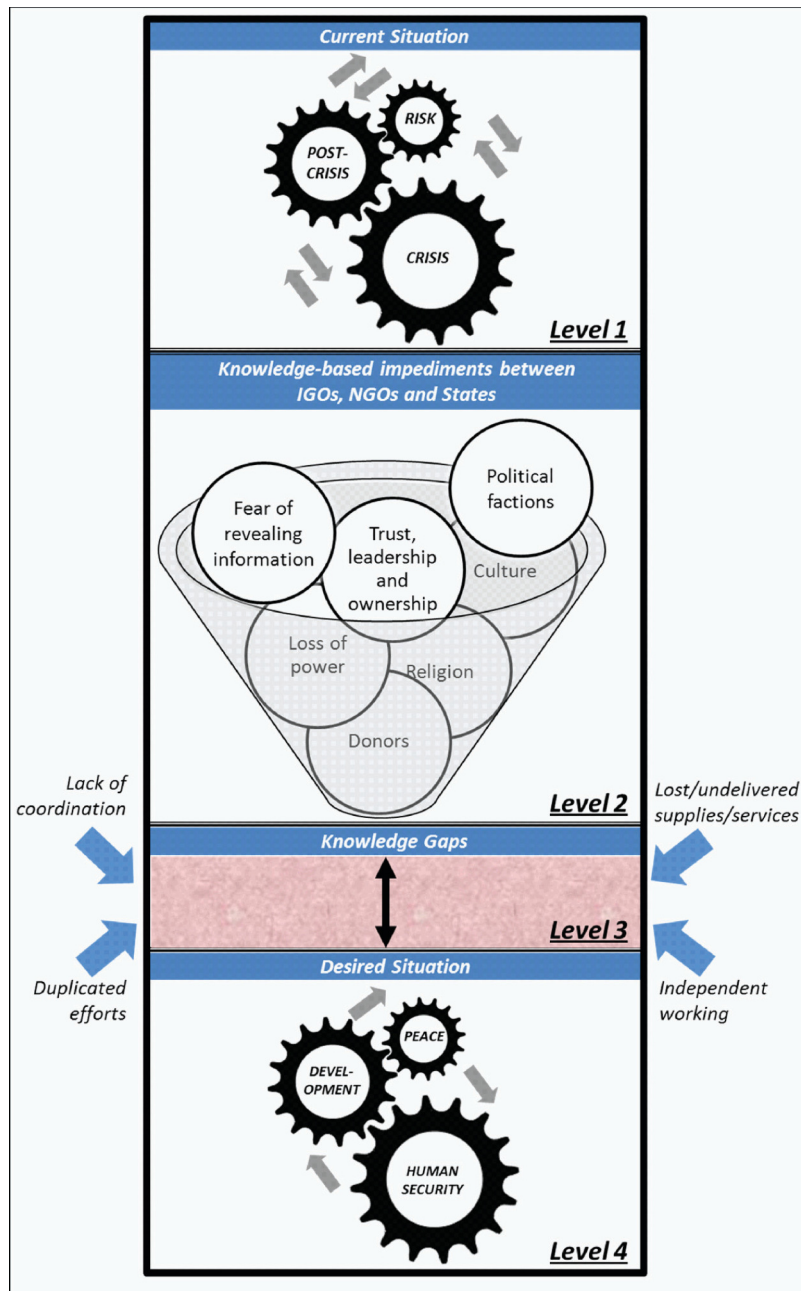
This paper intends to investigate real-world crisis management situations with which the United Nations have been, and are currently

involved, in an attempt to identify recurring issues with these knowledge-based impediments. In particular, this paper presents three distinct natural crisis situations—the 2010 Haiti Earthquake, the 2004 Boxing Day Asian Tsunami, and the 2001 Gujarat Earthquake. These crisis situations have been presented as cases and thus selected due to their time periods and geographical dispersion. The cases underline ongoing problems apparent in each situation and which show little sign of mitigation. Particular focus is placed on the UN's role as a coordinating body during the crises. Figure 2 illustrates generic issues and their linkages for crises; it identifies major barriers that impede organizations like the UN, IGOs, NGOs and the state from delivering peace and human security.

There are four layers enumerated in Figure 2: the upper layer (layer one) identifies the situation as currently identified; elements of the layer contain risk, crisis, and post-crisis elements but are so entangled as to provide seamless transition between elements. This layer also highlights that there is currently little value placed upon implementing measures of preparedness.



Figure 2. Crisis management - current and desired situation



Layer two identifies the impediments to knowledge sharing in a crisis situation:

- **Trust, Leadership, and Ownership** - a lack of, or poor implementation of, any of these elements can be detrimental to crisis management situations.
- **Donors** - stipulations and guidelines laid out by donors as to where finance is dis-

tributed can prevent organizations from sharing data.

- **Religion** - long-standing feuds based upon religious beliefs can make it difficult for organizations to openly share information.
- **Political Factions** – interstate feuding and organizational disagreements can promote a reluctance to share information. This may be particularly apparent where a state is required to reveal information which may be

highly secretive, or cause embarrassment to the state in question.

- **Fears of revealing information which may be valuable to the organization** – as has been witnessed in the Human Genome Project, many organizations have uncovered valuable information which they have then been unwilling to reveal. This may be as a result of future opportunities to use the acquired knowledge to generate revenue streams.
- **Loss of Power** – high ranking IGOs and NGOs may feel their power base is weakened due to sharing knowledge. By revealing information they possess, other organizations can find themselves on an equal footing.
- **Organizational Culture** – if the IGO or NGO lacks a culture of knowledge sharing it is unlikely to advocate this change.

Layer three highlights the gaps which are caused as a direct result of these impediments to knowledge sharing. Such knowledge gaps are widened by a lack of coordination, duplicated efforts, lost or undelivered supplies and services, and the urge of organizations to work independently. The fourth layer describes the desirable situation. When knowledge gaps are bridged and impediments removed, then basic components for development, peace, and human security will be acquired cyclically. In addition, when the final layer is fulfilled, given organizations will be able to identify risks and weak signals at the beginning of the *Crisis and Disaster Management Curve* (Immonen et al., 2009) presented earlier and hence put in place measures of preparedness (Raman & Jennex, 2010). However, the aforementioned desirable final layer is hardly ever reached. The reasons behind this ineffective approach can be attributed to a number of factors. The next section outlines three cases to enumerate these knowledge-based issues and the impediments that have negatively impacted crisis and post-crisis situations.

## CASE 1: HAITI EARTHQUAKE, 2010

On 12<sup>th</sup> January 2010 an earthquake of magnitude 7.0 struck the Haitian capital of Port au Prince. The quake left up to 230,000 people dead, and another 200,000 injured. Additionally, up to a million people were left homeless (Bilham, 2010). Six months on from the disaster those affected continue to be in dire need of support, and the aid process has been heavily criticized in many quarters. This case study aims to understand the issues which have made the delivery of aid so difficult. The arrival of aid to Haiti was prompt and abundant. However, this created its own problems. Due to a lack of preparedness the arrival of aid was described as incredibly disorganized (BBC News, 2010). As increasing numbers of aid agencies arrived bringing with them drastically-needed supplies, vital equipment was left sitting next to the runway for a number of days. In the immediate aftermath of the disaster when healthcare equipment was most needed, a lack of organization disrupted its distribution.

Médecins Sans Frontières complained of delays to supplies arriving at the expense of foreign troops. GOAL blamed the UN and USA for the delay, claiming it was their failure to work together which caused such disruption. The UN responded by blaming what it termed as underestimated logistical problems (BBC News, 2010). One of the reasons behind some of the chaotic beginnings to the aid situation can be attributed to a loss of personnel and systems belonging to the UN during the earthquake. The Inter Agency Standards Committee (IASC), however, who produced a report on the disaster in July 2010 criticized the early lack of co-ordination whilst praising subsequent efforts to improve this. The report also went on to describe the following issues (Inter-Agency Standing Committee, 2010):

- the need to work more proactively with the various actors involved and with local governments

- the need for aid agencies to identify the necessary expertise, tools, knowledge and partnerships to operate effectively
- a need to improve communications with disaster-affected populations
- a need for strong, decisive, and empowered leadership
- the need for a shared strategic vision
- the loss of information due to the earthquake was unrecoverable
- the lack of coordination of over 400 humanitarian groups
- a lack of information on national capacities
- a lack of preparedness on the part of the Haitian government and the UN
- no exit strategy
- the delay in the collection and sharing of information between agencies
- a lack of willingness of agencies to prioritize the need for information sharing and
- the lack of an accepted system by which to record and share information

The IASC reserves its biggest criticism in its report for the lack of leadership and organization displayed, highlighting the lack of coordination between aid agencies in the early stages. This is blamed upon the high number of independent agencies involved and the shortage of available information. However, the report goes on to suggest that the cluster approach taken towards the development enabled communication to significantly improve. The report also highlights the failure of some aid agencies to engage with the authorities, hence restricting their strategic effectiveness. Furthermore, other organizations were hampered by their inability to access and thus benefit from the knowledge-based possessed by these agencies (Inter-Agency Standing Committee, 2010).

IASC identifies two barriers to inter-organizational knowledge sharing; one being the language barrier, the other a restricted access to coordination centers' headquarters (Inter-Agency Standing Committee, 2010). In addition, incompatible systems may have prevented agencies from working together effectively. The report further highlights the

failure of inexperienced, well intentioned agencies to share and coordinate relief operations. A report carried out by the Disaster Accountability Project on aid agencies working in Haiti was also highly critical of the lack of transparency displayed. Of 200 organizations interviewed only 6 regularly provided factual updated reports (Disaster Accountability Project, 2010). This report calls for increased transparency in all aid agencies in order to ensure accountability and monitoring, and proposed that that policies should be put in place as a matter of course to ensure the enforcement of such guidelines. Disaster Accountability Project (2010) blames many of the problems on ineffective coordination strategies. Such problems may have been caused by the sheer scale of such a relief effort.

## **CASE 2: BOXING DAY ASIAN TSUNAMI, 2004**

On December 26<sup>th</sup> 2004 an earthquake of magnitude 9.0 struck 250 km off the coast of the Indonesian city of Banda Aceh (Pickrell, 2005). The subsequent tsunami caused substantial damage to towns and cities in thirteen countries as far away as Somalia. The death toll was estimated to be around 225,000 with a further 500,000 injured. An additional 150,000 people were killed by the resultant spread of infectious disease (Pickrell, 2005). The subsequent after effects of the disaster left five million homeless and a further one million unable to make a living. The estimated total cost of the disaster was placed at approximately \$7.5 billion.

Such previously unprecedented geographical dispersion of the disaster made the distribution of effective aid a near impossible prospect and proved a huge drain on resources, particularly to large organizations like the UN. Takeda and Helms (2006) discussed how the United Nations Disaster Relief Agency managed the situation and argued that the highly bureaucratic system employed for disaster preparedness actually added to the complexity of the disaster relief efforts due to its failure to include any scope for adaptability. The same

*Table 1. Impediments to the delivery of aid*

<i>Issue</i>	<i>Source</i>
<ul style="list-style-type: none"> <li>- slowness in arranging meetings</li> <li>- the under preparedness of the states to deal with disaster</li> <li>- an insufficient supply of external information</li> <li>- a refusal of some organizations to accept outside help</li> </ul>	Takeda and Helms (2006)
<ul style="list-style-type: none"> <li>- some NGOs operated independently making coordination more complex</li> <li>- arriving UN staff had little understanding of countries or cultures</li> <li>- a lack of information flow resulted in a duplication of efforts</li> <li>- information was available but inaccessible to those who needed it</li> <li>- the language barrier</li> <li>- inexperienced NGOs were unaware of the need to coordinate with other actors</li> </ul>	UN (2005)
<ul style="list-style-type: none"> <li>- a failure on the parts of governments and aid agencies to work in close proximity</li> <li>- refusal of Indian government to allow access to the Andaman Islands due to military sensitivity</li> </ul>	BBC News (2006)
<ul style="list-style-type: none"> <li>- aid being delivered to the same spot twice whilst others were left desperately waiting unattended</li> <li>- conflicting directions being given by differing sources</li> </ul>	Gonsalves (2005)
<ul style="list-style-type: none"> <li>- a lack of infrastructure with an uncoordinated response to the arrival of aid agencies</li> </ul>	CNN (2005)
<ul style="list-style-type: none"> <li>- no adequate distribution system resulted in goods and supplies waiting at airport</li> </ul>	Paddock and Magnier (2004)
<ul style="list-style-type: none"> <li>- government protocols prevented access to certain countries or areas</li> </ul>	Takeda and Helms (2005)
<ul style="list-style-type: none"> <li>- numbers of refugees in camps were inflated by government officials in order to gain greater levels of aid</li> </ul>	Solomon and Higgins (2005)

authors argue that a system was in place to coordinate the work of NGOs and aid agencies under the UN umbrella (Takeda & Helms, 2006) and argue that the rational approach employed by these systems is unworkable in an irrational situation. They additionally call for the use of a more fluid system capable of changing according to the needs of the situation (a holistic management system). They state their belief that, whilst management information systems are vital for sharing information, in an ever-changing world, it is equally important that these systems are fluid and adapt to change. In addition to the problems with the systems employed by the UN, a number of other impediments to the delivery of aid have been identified. Table 1 highlights some of these issues (grouped according to source).

Despite the reported problems highlighted, the general consensus as to the relief efforts

experienced following the tsunami is largely positive, which has resulted in a belief that much has been learnt from the situations encountered (Shaw et al., 2010). However, some reports suggest that similar errors to those made during the tsunami relief effort are still being made today. This indicates that mistakes are not being appropriately engineered out of the relative organizations' relief strategies.

In the immediate aftermath of the tsunami the UN elected to set up Humanitarian Information Centers (HICs) which contained information on ownership, maps, surveys, meetings and funding. The HIC was largely considered a success and currently remains operable in some affected countries. One point of note which has arisen from the UN's work in Indonesia is the reported change in relationship between the UN and NGOs. Whereas previously NGOs acted as a 'sub-contractor' to the UN, increas-



ingly NGO funding has changed the dynamic. The UNDP reports one NGO asking the UN to carry out work on their behalf (UNDP, 2005). This blurring of established relationships sets a precedent which could compromise the UN's ability to influence government policy making. The UNDP also reports success in collaborations between Islamic and Western NGOs (UNDP, 2005) which had previously been an area of much sensitivity. The mass geographic dispersion of aid agencies during the tsunami relief effort created unprecedented problems for the UN in coordinating an efficient response.

### **CASE 3: GUJARAT EARTHQUAKE, 2001**

On January 26<sup>th</sup> 2001 a major earthquake measuring 6.9 on the Richter scale struck the Western Indian state of Gujarat. Reports suggested the earthquake killed in excess of 20,000 people and left a further 165,000 injured. Over 16 million people were affected by the disaster which left around 7,000 homes destroyed (BBC News, 2001). In the immediate aftermath of the disaster, relief work was largely undertaken by bilateral agencies and NGOs. UNDAC (United Nations Disaster and Co-ordination) reported nearly 250 agencies were active in the region by February. The UN response to the disaster was relatively minor, with the organization endeavoring to develop a coordination centre. The centre became operational a week after the initial disaster, which, by the UN's own concession proved largely ineffective; the UN also confesses that the team sent was largely ill-equipped and insignificant (Harland & Wahlstrom, 2001).

The UN also highlights a lack of clarity in the role which each division within the organization should be undertaking, resulting in poor relations between divisions. This in turn led to external organizations and NGOs expressing their disappointment at the UN's input and their failure to coordinate a response to the crisis (Harland & Wahlstrom, 2001). The DEC (Disaster Emergency Committee) reported

well-established NGOs had long-standing uncomfortable relations with the UN. The resultant effect of this situation was that most NGOs were relying on the UN to coordinate operations, but believed that they failed to in this task. As a result the UN and other organizations operating at the scene were accused of being '*weak, slow, and lacking in direction*'; the UN itself was accused of absorbing lots of information but delivering little in return and of acting in an 'elitist' manner (Harland & Wahlstrom, 2001).

More worryingly for the UN was the view taken by many that the organization was a group of disparate agencies, each responsible for doing its own thing. This lack of collaboration and failure to work together significantly hindered the UN response. The lack of information flow in place during the disaster resulted in further problems. The UN reports that its divisions were reliant upon UNICEF's experience in the region to provide contacts and information regarding how to operate in Gujarat. Logistical and administrative support, along with a supply of information, was left desperately lacking (Harland & Wahlstrom, 2001).

A distinct lack of management capacity and good relations with the Indian government further hampered attempts to develop successful strategies. This was attributed to India's longstanding directive of managing disasters internally. The result was a slow response by the UN to the disaster and a subsequent lack of information sharing between the state and the UN. A slow response to the disaster and the UN's late entry into the situation resulted in UN departments being forced to spend much of the early days catching up. Harland and Wahlstrom (2001) reiterated the need for leaders to be appointed and how fast they should respond to a given crisis situation: "*Leadership can only be provided if the aspiring leader is the first on-site*".

Failure to produce field reports was put down to a problem in centralized decision making. Various UN agencies in the field failed to agree upon whose views the report should include, thus causing further in-fighting. Geneva (the UN Headquarters) failed to rectify



Table 2. Problems of NGOs

<i>Issue</i>	<i>Source</i>
<ul style="list-style-type: none"> <li>- a lack of experience, partnerships, and relationships with other actors               <ul style="list-style-type: none"> <li>- a lack of a strategic plan, or exit strategy</li> <li>- a lack of clarity as to the actors' roles within the situation</li> </ul> </li> <li>- NGOs created disparate communities who shared information only between themselves due to the UN's failure to make central decisions               <ul style="list-style-type: none"> <li>- mistakes made during previous disasters were repeated</li> </ul> </li> <li>- failures on the part of the UN to heed lessons learnt in previous scenarios and apply them to new situations</li> </ul>	Harland and Wahlstrom (2001)
<ul style="list-style-type: none"> <li>- a failure by the Indian government to provide the necessary information</li> <li>- a lack of preparedness by all sides to respond in an area prone to natural disasters               <ul style="list-style-type: none"> <li>- weak assessments of the damage inflicted</li> </ul> </li> <li>- a failure to engage with local communities during rebuilding</li> </ul>	Shah (2002)
<ul style="list-style-type: none"> <li>- failure to develop effective local partnerships</li> <li>- duplication of efforts</li> </ul>	Disasters Emergency Committee (2001)

this situation which, as a result, was allowed to perpetuate, further hampering the relief effort (Harland & Wahlstrom, 2001). The UNDAC systems used by the UN during the disaster to disseminate information were generally regarded functioning to an acceptable level whilst being made available to all relevant actors within the crisis domain. Nevertheless it is iterated that a system is only as good as its users and the input they provide. As such, the system was criticized for being user unfriendly (Harland & Wahlstrom, 2001). As is apparent, criticisms of the UN were abundant. However, NGOs, the state and other actors were also responsible for a number of problems which are presented in Table 2.

## ANALYSIS AND DISCUSSION

This section provides an analysis of the case studies discussed previously, commencing with major findings from each, supplemented by discussion regarding the cause and effect of various impediments. Each impediment will be assigned a level of severity as to the problems it caused during each situation; this section will additionally align impediments with the effects created to highlight those which generated the most problems.

## Leadership, Trust, and Ownership

A significant lack of leadership, trust and ownership is apparent in all of the case studies analyzed. In Haiti, particularly during the early phases of the relief effort, there were a number of reports to suggest that leadership was an issue: many were highly critical and blamed a lack of leadership for the problems which arose during the first few weeks. The concerns with leadership identified during the Haiti situation, and indeed the other case studies analyzed, were exasperated by the huge influx of aid agencies who attended the disaster. This provided significant problems with effective coordination and engagement. There were also elements concerning trust during the Haiti situation, evidenced by the refusal of the UN to allow access to its command headquarters.

Leadership proved problematic during the tsunami, in large part due to the vast geographical dispersion of the disaster compounded by a need for the UN to operate in a different manner in the various affected countries. The Indonesian government, for example, requested that the UN take responsibility for the aid, and close ties with the Sri Lankan government were also established. In other countries the UN has to operate under state government legislation. The main criticisms leveled at the UN concern-

ing leadership were focused upon the lack of, and slowness in, arranging regular meetings in order to gauge process and coordination of effort. The Gujarat earthquake provides the most compelling evidence of how poor leadership can influence the outcome of crisis situations. The relief program experienced massive problems which threatened to undermine the entire effort and seriously damage aid agency relations. The study highlights failures of the UN in establishing good governance, effective leadership and ownership of the crisis situation. Not only was leadership of other organizations exposed; the study also demonstrated significant issues in ownership and leadership within the UN's own departments.

Alongside ownership and leadership, the study showed that centralized decision-making can be considerably damaging to a project, and seriously delay decisions and impede information flows. The cases also demonstrate the issues which can become apparent if relations between the state and the UN become strained where outright ownership of the situation is not established. The element of trust between the UN and other organizations can play a pivotal role in delivering aid in a timely manner. Aid agencies accused the UN of absorbing much information and delivering little, failing to achieve what was expected of them. This had the effect of forcing aid agencies to operate independently and create disparate communities. The recent Chilean earthquake has highlighted the benefits of good governance during crisis situations where government then swiftly took ownership of the problem, largely refusing help from various aid agencies.

The effects of a lack of leadership, trust, and ownership had underlying implications for the relief efforts and significantly hampered the delivery of aid in all of the case studies analyzed. Aid agencies were often forced to repeat work already accomplished, with reports suggesting aid was delivered more than once to the same location. The lack of leadership and ownership again highlights how poor coordination forced aid agencies to act under their own recognizance. This was caused by a failure to provide regular

meetings and, therefore, a knowledge base for sharing information across agencies. A failure to provide leadership also badly affected the opportunity to develop any form of strategic plan. Therefore agencies had little to no clarity as to their specific role and no opportunity to monitor or evaluate performances. The need for effective leadership was further exaggerated by the vast number of aid agencies drawn to the crisis.

## **Under Preparedness**

One of the most important findings from the Haiti case study was the under-preparedness of the aid organizations in dealing with a crisis in this area. With Haiti being highly prone to a series of natural disasters, including hurricanes and earthquakes, one would expect aid agencies to have some level of infrastructure permanently set up in this area. In addition, the preparedness of the Haitian state has been criticized for its failings to instigate the necessary measures for such predictable crises. Although the UN tragically reported losing personnel and systems during the earthquake, the failure to back-up data and to share knowledge among aid workers considerably hampered the effort. This illustrates the UN's failure to become a learning organization and disseminate knowledge gained in the field.

Evidence of under preparedness is also apparent during the tsunami case study. In addition to criticisms being leveled predominantly at aid agencies, the states involved have been largely condemned for their lack of preparedness, insufficient infrastructure and slowness to respond. However, the UN has not been exempt from criticism with attending staff admitting to having little knowledge of the culture and values of the countries to which they were seconded. The unprecedented geographical dispersion of the tsunami provides some mitigation as to the unpreparedness of the UN response. Nevertheless, it is feasible to expect that the UN would have greater preparatory measures in certain affected regions. Furthermore, the lack of cultural awareness of UN staff can be largely attributed to insufficient training and sharing of

regional knowledge. State awareness remains a difficult area to quantify. The majority of the thirteen nations affected were criticized in some quarters for their slow and ineffective response to the disasters. Whilst national preparedness is largely the remit of the state, it appears there is scope for the UN to become involved with some form of training or preparation scheme to help states deal with disasters.

The Gujarat earthquake provides further evidence as to the unpreparedness of both the nation state and the UN in responding to the disaster. The UN's failure to respond adequately to the event until a week after the earthquake is attributable to India's previous predilection of responding to disasters internally. The subsequent failure of the UN to provide a sufficiently equipped and adequately staffed team cannot, however, be attributed to this short-coming. This provides further support for the view that the UN was underprepared. This under preparedness shown by the UN, states, and other aid agencies led to significant issues during the early phases of the crisis, perhaps the most detrimental being the lack of coordination. The early stages of a relief effort are widely regarded as some of the most important; effective distribution of medical supplies, clean water, shelter and food at this time can be the difference between life and death for many. Proactive preparation for such situations should be a driver for change within the UN.

## **Systems and Communications**

The failure of aid agencies to adopt widely accepted, compatible systems has contributed to major problems with information flow across the three case studies. In Haiti, the failure to back-up systems which had been in place prior to the disaster meant that essential information was lost which could have been vital to early stages of relief. This issue was further exaggerated by the UN's failure to employ an adequate number of staff and resources in the development of information management. As a result, delays in collecting and sharing information became apparent. Criticisms were also leveled at other

aid agencies for their failure to prioritise the need for information exchange. This may have been as a result of incompatible systems, or a lack of experience among agencies.

Systems used by the UN during the tsunami also encountered a great deal of criticism, mainly due to their bureaucratic and user-unfriendly nature. Evidence has been provided which suggests the systems employed were chronically unsuitable for purpose and that there is a need for a complete overhaul in the systems used. However, there is also a requirement for better methods of data collection and analysis to be implemented in order to make any new system successful. During the Gujarat earthquake there were complaints that, although information flow was successful during the early phases of the relief effort, future flow was disrupted by the UN's failure to empower users. Also, complaints were once again raised with regard to the user unfriendliness of the systems.

The effects of poor and disparate systems and the failure of aid agencies to prioritise any need to share information had far reaching effects across the three case studies. Inaccessible and reduced flow of information during the relief efforts caused problems in coordinating an effective response and keeping aid agencies informed of the latest developments: the knock-on effect of which was duplication of effort and difficulties in tracking the distribution of aid and supplies. Furthermore, this led to immense difficulty in monitoring and evaluating performance.

## **Lack of Collaboration and Transparency**

Collaboration from agency to agency, and government to agency, provided significant impediments to effective relief efforts. In addition, the lack of transparency displayed by some agencies further hampered the opportunity to share information. Some of the major criticisms leveled at the UN have surrounded their failure to actively collaborate with governments, other agencies, and even among their own departments. The result of this has been a failure on the UN's part to gather vital information from governments



and other agencies, prompting accusations that some aid agencies have been allowed to act on their own recognizance. Furthermore, some aid agencies have as a result failed to engage with the UN in any way.

A lack of collaboration with the disaster affected populations, particularly during the redevelopment phase, has resulted in accusations of arrogance and thus populations being unhappy with the results. The level of transparency shown by some agencies has also been called into question (Murphy, 2010). This has led to some aid agencies refusing to accept external help and security issues during the delivery of aid. It is important to note that aid agencies are not completely responsible for the lack of collaboration; state governments have also been guilty of failing to engage and demonstrate sufficient transparency. This has been evidenced by the deliberate overestimation of Internally Displaced Persons (IDPs) in refugee camps in order to gain access to greater levels of aid. In addition, as witnessed during the Gujarat earthquake, the Indian government's reluctance to disseminate information hampered relief efforts with the resultant effects of failing to collaborate once again manifested in a lack of coordination between agencies. This in turn led to some agencies acting independently, outside of the jurisdiction of either the UN or the state government. Some agencies felt forced into forming disparate communities, resulting in conflicting directions being given and supplies failing to be delivered.

### **Proliferation and Inexperience of Aid Agencies**

One trend witnessed during all three of the case studies analyzed has been the mass proliferation of aid agencies, and in particular NGOs, who attended the relief effort. This has been mirrored by the number of NGOs now in operation around the globe. Despite the undoubted good intentions of NGOs, both new and old, the inexperience of some has caused problems during the aid effort. This has been witnessed by a failure to collaborate, an unawareness of

protocols, and failure in reporting to governing bodies. In one extreme case there was the example of the American Baptist Church being accused of kidnapping Haitian orphans. However, apportioning blame solely towards NGOs is not necessarily justified; lack of leadership and good governance must also be addressed.

The effects of NGO inexperience and mass proliferation again bred difficulties in establishing a sufficient level of coordination. The attendance of over four hundred NGOs to the Haitian earthquake would make coordination difficult in any circumstance, and particularly when a host of inexperienced NGOs are involved. This situation can be further exaggerated when good governance and leadership are absent. As a result significant issues were recorded in terms of information flow, reporting, monitoring and evaluation.

### **Organizational and State Culture**

The culture of an organization or state is typically something which is deeply ingrained, particularly in well established organizations within strongly independent countries. The results of cultural differences in the three case studies are widely visible. It is noticeable that a number of aid agencies have refused to work with other organizations and as such have been reluctant to share any information. This also leads to the issue of strategic visions becoming disparate and some organizations having different goals which may contradict or disrupt the entire process. There are accusations that the UN themselves have been guilty of developing an 'elitist' culture which has resulted in some NGOs viewing them with suspicion and as being unreliable in their ability to oversee the aid effort. Questions have also been asked about integrity, embraced as a core competency, within the UN (Deloitte Consulting LLP, 2004).

Furthermore, there are reports that the various UN departments have been viewed as being a group of disparate agencies rather than one enterprise focused upon on a shared vision (Olara, 2009). This has resulted in failure to adequately share information be-

tween departments. Additionally, centralized decision-making and failures to empower staff in the field have provoked further issues. As such we can decipher that the UN is some way from becoming a learning organization. The problems of state culture have also been apparent in the case studies analyzed. Reports of the Indian government refusing to allow access to the Andaman Islands following the tsunami due to military sensitivity highlight this problem. There have also been reports of some states refusing to accept aid from certain foreign countries. One positive note relating to the culture of certain organizations has been the example, during the tsunami, of Islamic and Western agencies working in unison. Due to well publicized reasons cooperation has not always been evident.

The major effect associated with disparate cultures is the difficulty in establishing working relationships. This can lead to agencies being unwilling to share information and work in partnership with other organizations. As such, the entire aid mission can be compromised as goals and strategies begin to contrast. This can lead to problems in establishing a mission strategy by which all aid agencies abide, significantly hampering the aid process. Some organizational cultures have also dictated that there is a regular turnover of staff both organizationally and by crisis situation. As such, knowledge of processes, procedures and expertise is lost from the business. The work of agencies can become unregulated due to a culture of operating secretly which may lead to duplication of effort. Once again the problem of coordinating a response is compromised by an ingrained culture.

## **Language Barrier**

The language barrier between agencies and affected populations can provide a considerable hurdle to successful crisis management. In Haiti where the majority of the population is French speaking there is reliance upon aid agencies to dispatch staff fluent in the language. However, this is not always possible due to the resources available to many organizations. In the other

case studies analyzed it is easy to imagine this situation being further exacerbated due to the increased number of languages spoken, predominantly in the tsunami example. The effects that a language barrier can create include difficulties in communication between agencies and populations. Therefore the problem of developing a system with a common language runs the risk of alienating some NGOs.

## **Donor Stipulations and Aid Distribution**

The Haiti case study has provided evidence that distribution of aid is not being entirely used to encourage development within the affected area. Reports suggest that a percentage of the aid being donated has been redistributed to NGOs' command locations in order to finance the employment of highly-paid consultants; essential aid has been lost by those who need it most. Donor stipulations can have a major effect on the way in which aid agencies operate, in particular NGOs. The Gujarat case study has shown that some aid agencies have been attracted to high profile disasters whilst disasters with less press coverage have been largely ignored. This has resulted in accusations of aid agencies using high-profile disasters in order to boost their own public image.

There have also been examples of high-budget NGOs being disingenuous to coordination of efforts in conjunction with other agencies. This may be due to the fact that the high level of finance available to them enables them to undertake and employ sufficient staff to manage an entire project single-handedly. In terms of the distribution of aid many of the problems have been linked to the difficulties in tracking its supply and in some cases aid was delivered to the same area twice. In order to combat this problem the UN has developed two new systems which have largely been proven to be successful during the tsunami aid distribution. Accusations have also become apparent that aid has only targeted certain demographics and largely ignored others. This goes against the mandates of many aid agencies that aid should



be delivered regardless of age, race, gender or social standing.

The effect of aid agencies failing to engage with other organizations leads to monumental problems. Once again the issue of duplicated efforts comes to the fore as independent organizations fail to notify others of their achievements. In terms of aid distribution, without suitable systems in place and sufficient information sharing, there is considerable scope for aid deliveries being repeated and certain areas in need being overlooked. In addition, tracking the finance and available supplies becomes very difficult.

## Agency Relations

Relations between agencies are fluid and regularly need to adapt and change in accordance with the situation. Serious dysfunction was witnessed between the UN and other aid agencies during the Gujarat earthquake, and indeed between UN departments. The tsunami provided an example instance of an NGO with a great deal of financial backing attempting to subcontract work to the UN. The continued growth of NGOs and the example mentioned set a dangerous precedent for the UN whilst threatening to compromise their position as a leading body. As such there may be scope for the UN to look to re-evaluate their position in the aid agency hierarchy in order to reaffirm their status as a leading body.

The possible effect of poor relations threatens to further complicate the coordination of aid agencies. The Gujarat earthquake provided the UN with an exemplar as to the threats poor relations can pose; some NGOs broke away to form disparate communities. The importance of establishing long-standing and trustworthy partnerships is vital, particularly in an age when the number of NGOs continues to increase. The blurring of the UN's standing threatens to create further problems. The UN is currently regarded by many as a leading body in crisis management; allowing agencies to dictate terms to the UN could undermine their position of leadership and ownership in crisis situations. To summarize

the severity of enumerated knowledge-based issues, a severity score is associated with each of these factors in the cases discussed earlier as shown in Figure 3. A total of these scores provides a cumulative severity index for these impediments. For the said cases, leadership, systems and communications, collaboration and transparency, under preparedness, and lack of trust provide the largest impediments, closely followed by ownership, inexperience, and culture. Due to the fact that lack of leadership, trust and ownership play a vital role in any crisis situation, and are mainly associated with a cascading effect on other factors, Figure 3 shows them as separate entities for more emphasis. The remaining attributes are coupled together to provide a consolidated score. The scale used to categorise the severity is as follows:

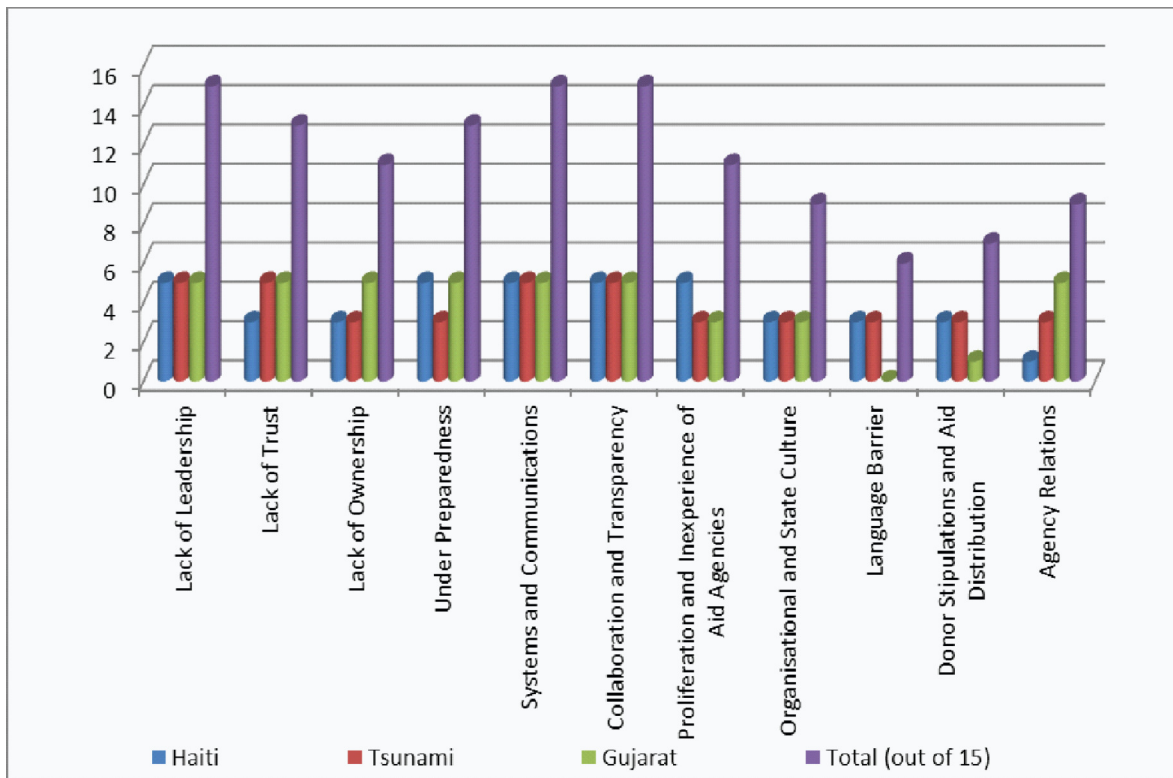
- 5 - Cause is highly apparent
- 3 - Cause is moderately apparent
- 1 - Cause is apparent

Assigning the severity rating for each of the factors has been accomplished through a qualitative analysis of the case.

## APPLICATION OF KNOWLEDGE MANAGEMENT CONSTRUCTS

The incorporation and effective use of Knowledge Management (KM) could help aid agencies in overcoming many of the issues which they currently face. However, before KM can become a fundamental aspect of crisis management within aid agencies, there is a pressing need to overcome the current causes of issues and impediments to KM which currently exist (Immonen et al., 2009). Only by making changes at each stage of the current processes can KM become a truly worthwhile venture. There is an urgent requirement for making provisions to encourage greater information sharing, collaboration, leadership, and transparency among aid agencies. An industry-wide acceptance of KM could help achieve this. KM has bore witness to some outstanding achievements in recent years

Figure 3. Severity of impediments for each of the cases



and has helped to make significant progress in the world of healthcare. The result has been that KM is now valued as a key corporate resource by many global organizations (Bali et al., 2009). The effective use of KM in crisis management can help to retain expertise, train new employees, and analyze and disseminate vital statistics and information to operatives working in the field (Wickramasinghe & Bali, 2008). Figure 4 illustrates the current status of the Crisis Management cycle and the impediments which exist.

Figure 4 depicts the cycle of impediments from one crisis management situation to another. If we take the upper circle (under preparedness) to be the start of a new crisis management situation the diagram reads as follows:

- a lack of preparedness for the new situation
- resultant delay in establishing effective leadership or ownership
- collaboration, relations, and transparency issues come to the fore which results in

inexperienced agencies being left to their own devices

- lack of meaningful data being collected and analyzed - meaning that systems remain poor, disparate, individual to the organization, and with no scope for knowledge sharing
- ultimate failure to record information resulting in agencies being unable to reuse information and apply it to a new scenario or for training purposes (the cycle begins again with the same disparities apparent in the new crisis)

Well executed KM initiatives to improve this cycle offer many benefits which could be reaped by aid agencies during the management of crisis situations. Such benefits include:

- establishment of better working relationships
- reduction in organizational competitiveness
- increased transparency

Figure 4. The “Circle of Impediments”

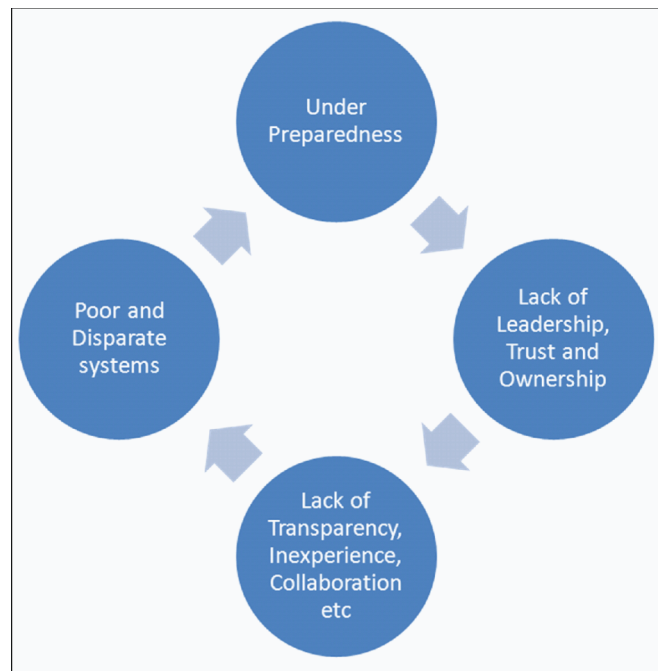
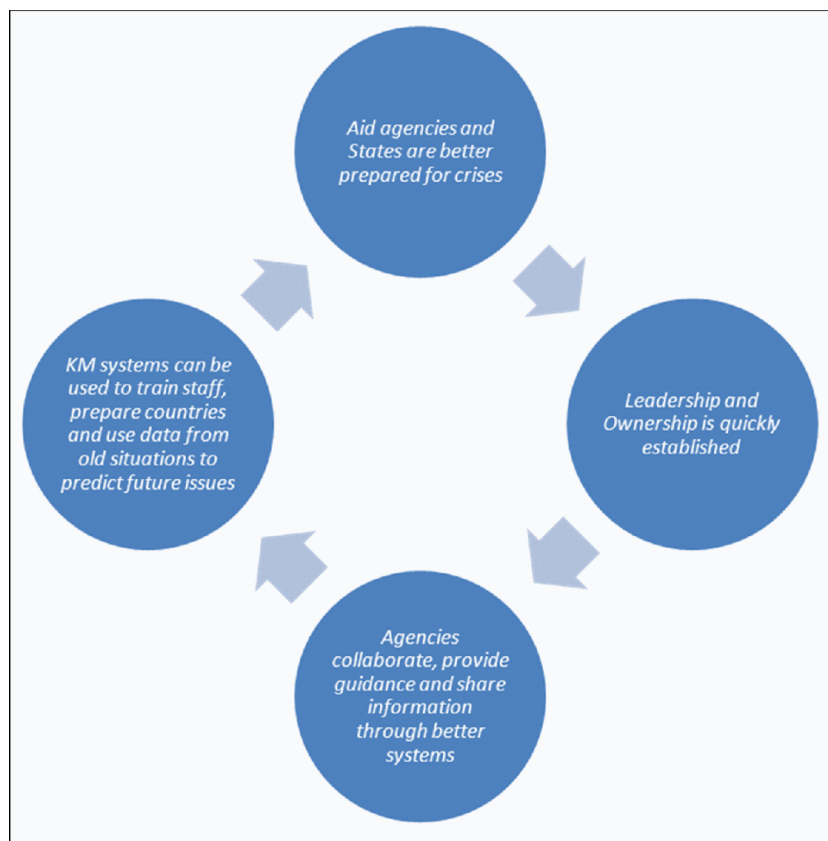


Figure 5. The “Circle of Trust”



- identification of the UN as a strong leader, therefore negating fears over agency concerns
- improved performance measurement
- establish a shared vision
- strengthen partnerships
- increase coordination and reduce duplicated efforts
- increase information flow

Successful KM can only be achieved if all actors embrace the process. It is imperative that the UN plays a key role in driving this change. However, as the case studies have evidenced, the UN incorporates its own issues when it comes to knowledge-sharing within departments. As a result, one of the fundamentals of aid agencies embracing KM must begin with the UN becoming a knowledge-based “Learning Organization” (Bali et al., 2009). Schematically, such changes improve the “Circle of impediments” to a KM-enabled “Circle of Trust” (Figure 5).

## CONCLUSION

Figure 2 captures the current management state of the crisis and provides a perspective on how impediments can occur in crisis situation, additionally highlighted by analysis of the cases. Such impediments result in widening the knowledge gaps between stakeholders (IGOs, NGOs and states) and, in turn, lead to undesirable and chaotic crisis management. Many of the problems which aid agencies have experienced in their attempts to facilitate successful crisis management have been as a result of similar factors, regardless of the situation. Therefore, the failure to learn from these mistakes and to implement measures to prevent their reoccurrence is unacceptable, and necessitates an urgent response to the problem. Lessons learned from each disaster and exercise need to be captured and disseminated to those responsible for creating formal or ad hoc emergency response systems (Murphy & Jennex, 2006). The recent success of knowledge management in the health-

care industry and corporate world has prompted questions as to the benefits which it could bring to crisis management. These benefits could include improved information sharing, greater teamwork, better preparedness, reduced duplication of efforts and increased coordination. All of these benefits would to some extent reduce the recurring issues which have been witnessed across recent crisis management situations. However, a number of impediments need to be broken down and studied to identify their root cause before a knowledge-based solution can be developed for crisis management.

The UN has largely accepted that knowledge-based solutions should become the core of their operations. Yet their initial efforts to achieve this have been met with a less than encouraging response. It is imperative that the UN focuses upon efforts to become a learning organization and implement knowledge-based solutions effectively. When such KM-based tools and techniques are integrated into the UN’s management of crisis situations, they should facilitate crisis management working at level 4 (Figure 2). As a result the benefits and subsequent effects on other agencies could change and improve the way crisis management is delivered globally.

## REFERENCES

- Bali, R. K., Wickramasinghe, N., & Lehaney, B. (2009). *Knowledge management primer*. New York, NY: Routledge.
- Benner, T., Binder, A., & Rotmann, P. (2007). *Learning to build peace? United Nations peacebuilding and organizational learning: Developing a research framework*. Berlin, Germany: Global Public Policy Institute.
- Bilham, R. (2010). Lessons from the Haiti earthquake. *Nature*, 463, 878–879. doi:10.1038/463878a
- CNN. (2005). *Rivers still strewn with bodies: Special Report – After the tsunami*. Retrieved from <http://edition.cnn.com/2005/WORLD/asiapcf/01/03/otsc.aceh.chinoy/index.html>



- Comprehensive Crisis Management. (2008). *Human security in peacebuilding*. Kuopio, Finland: Crealab Oy.
- Deloitte Consulting, L. L. P. (2004). *United Nations organizational integrity survey*. Retrieved from [http://whistleblower.org/storage/documents/UN\\_Integrity\\_Survey.pdf](http://whistleblower.org/storage/documents/UN_Integrity_Survey.pdf)
- Disaster Accountability Project. (2010). *Report on the transparency of relief organizations responding to the 2010 Haiti earthquake*. Hartford, CT: Disaster Accountability Project.
- Disasters Emergency Committee. (2001). *Independent evaluation: The DEC response to the earthquake in Gujarat (Vol. 1)*. London, UK: Disasters Emergency Committee.
- Gonsalves, C. (2005, January 28). The deadly bureaucracy in the Andamans. *The Indian Express*, p. 8.
- Harland, D., & Wahlstrom, M. (2001). *The role of OCHA in emergency United Nations operations following the earthquake in Gujarat, India - 26 January 2001*. Geneva, Switzerland: United Nations.
- Immonen, A., Bali, R. K., Naguib, R. N. G., & Ilvonen, K. (2009). Towards a knowledge-based conceptual model for post-crisis public health scenarios. In *Proceedings of the IEEE International Conference on Humanoid, Nanotechnology, Information Technology, Communication and Control, Environment, and Management*, Manila, Philippines (pp. 185-189).
- Inter-Agency Standing Committee. (2010). *Response to the humanitarian crisis in Haiti: Achievements, challenges, and lessons to be learned*. Geneva, Switzerland: Inter-Agency Standing Committee.
- Jennex, M. E., & Raman, M. (2009). Knowledge management is support of crisis response. *International Journal of Information Systems for Crisis Response and Management*, 1(3), 69-82. doi:10.4018/jiscrm.2009070104
- Murphy, T. (2010). *Transparencygate!* Retrieved from [http://www.huffingtonpost.com/tom-murphy/transparencygate\\_b\\_695382.html](http://www.huffingtonpost.com/tom-murphy/transparencygate_b_695382.html)
- Murphy, T., & Jennex, M. E. (2006). Knowledge management, emergency response, and Hurricane Katrina. *International Journal of Intelligent Control and Systems*, 11(4), 199-208.
- News, B. B. C. (2001). *UK offers help to quake victims*. Retrieved from <http://news.bbc.co.uk/1/hi/uk/1139081.stm>
- News, B. B. C. (2006). *Tsunami disaster*. Retrieved from [http://news.bbc.co.uk/1/hi/in\\_depth/world/2004/asia\\_quake\\_disaster/default.stm](http://news.bbc.co.uk/1/hi/in_depth/world/2004/asia_quake_disaster/default.stm)
- News, B. B. C. (2010). *Haiti earthquake*. Retrieved from [http://news.bbc.co.uk/1/hi/in\\_depth/americas/2010/haiti\\_earthquake/default.stm](http://news.bbc.co.uk/1/hi/in_depth/americas/2010/haiti_earthquake/default.stm)
- Olara, S. (2009). *Critique: Who will police the United Nations?* Retrieved from <http://www.blackstarnews.com/?c=135&a=5536>
- Paddock, R. C., & Magnier, R. C. (2004, December 30). Tsunami relief efforts mired in chaos. *Los Angeles Times*.
- Pickrell, J. (2005). *Facts and figures: Asian tsunami disaster*. Retrieved from <http://environment.newscientist.com/channel/earth/tsunami/dn9931-facts-and-figures-asian-tsunami-disaster-html>
- Raman, M., & Jennex, M. E. (2010). Knowledge management systems for emergency preparedness: The way forward. *Journal of Information Technology Case and Application Research*, 12(3), 1-11.
- Shah, A. (2002). *Relief, rehabilitation and development: The case of Gujarat*. Retrieved from <http://www.jha.ac/articles/a097.pdf>
- Shaw, J., Mulligan, M., Nadarajah, Y., Mercer, D., & Ahmed, I. (2010). *Lessons from tsunami recovery in Sri Lanka and India*. Melbourne, Australia: Monash University.
- Solomon, J., & Higgins, A. (2005, January 24). Indonesia reviews claims of Graft in tsunami relief. *Wall Street Journal*, p. A16.
- Takeda, M., & Helms, M. (2006). Bureaucracy, meet catastrophe: Analysis of the tsunami disaster relief efforts and their implications for global emergency governance. *International Journal of Public Sector Management*, 19(2), 631-656. doi:10.1108/09513550610650446
- United Nations. (UN). (2005). *National post tsunami lessons learned and best practices workshop*. Retrieved from <http://www.un.or.th/pdf/6months-govindn-idn-01jun.pdf>
- United Nations. (UN). (2010). *The United Nations at a glance*. Retrieved from <http://www.un.org/en/aboutun/index.shtml>
- United Nations Development Program (UNDP). (1994). *Human development report*. New York, NY: Oxford University Press.