The background image shows three young girls in school uniforms sitting on a stone ledge. They are in front of a building that has been severely damaged, with exposed wooden beams and crumbling walls. The girls are looking at each other and talking. One girl on the left is wearing a pink jacket, the middle girl is wearing a red vest, and the girl on the right is wearing a dark blue sweater. The scene is set in a rural, mountainous area with a cloudy sky.

ALNAP Lessons Paper: Responding to earthquakes



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Young female students sit in front of their damaged school in Dolakha district, Nepal. Photo: Owen Raggett.

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www.alnap.org/lessons-papers-responding-to-earthquakes-annexes

Abbreviations and acronyms

ALNAP	Active Learning Network for Accountability and Performance
CBDM	community-based disaster management
CCCM	camp coordination and camp management
CfW	cash-for-work
CSO	civil society organisation
DRR	disaster risk reduction
ECHO	European Civil Protection and Humanitarian Aid Operations
FfW	food for work
GDP	gross domestic product
HIME	humanitarian information management and exchange
IASC	Inter-Agency Standing Committee
IDP	internally displaced person
IFRC	International Federation of Red Cross and Red Crescent Societies
IIED	International Institute for Environment and Development
IOM	International Organization for Migration
IPPF	International Planned Parenthood Federation
KYC	Know Your Customer
MDTF	Multi-Donor Trust Fund
M&E	monitoring and evaluation
MEAL	monitoring, evaluation, accountability and learning
NGO	non-governmental organisation
NRC	Norwegian Refugee Council
OCHA	United Nations Office for the Coordination of Humanitarian Affairs
PAHO	Pan American Health Organization
PASSA	participatory approach for safe shelter awareness
PDNA	post-disaster needs assessment
RCT	randomised controlled trial
SRH	sexual and reproductive health
UCT	unconditional cash transfer
UNDP	United Nations Development Programme
UNDAC	United Nations Disaster Assessment and Coordination
UNISDR	United Nations Office for Disaster Risk Reduction
WASH	water, sanitation and hygiene

Introduction

Earthquakes are unique among humanitarian disasters in a variety of ways. They destroy transportation infrastructure (e.g. roads, bridges), which impede communication and access to affected areas. Large amounts of rubble can also block transport routes and need to be moved before reconstruction efforts can begin. Earthquakes have high mortality and injury rates, as collapsing buildings can kill or injure large numbers of people. On the other hand, their effects are more geographically concentrated than other types of natural disaster (Cosgrave, 2008).

Another danger with earthquakes is the potential for aftershocks, which can disrupt relief and recovery operations and cause further damage. The 2011 earthquake in Japan is a good example: the earthquake was followed by a tsunami and a series of nuclear accidents. Another example is that of Haiti, where an unforeseen cholera outbreak followed the 2010 earthquake (Grünewald et al., 2011: 16). Lastly, as earthquakes occur less frequently, disaster risk reduction (DRR) measures tend to focus on other, more common types of disaster (Cosgrave, 2008).

In fragile or developing states, large-scale earthquakes can turn back the development clock by years or even decades. It is not possible to eradicate earthquakes, but as most of the areas prone to earthquakes are known, it is possible to prepare and learn from past experiences in order to strengthen the humanitarian response and to 'build back better'.

This paper reviews relevant grey and published literature to draw lessons from previous humanitarian responses following any type of earthquake, provided it occurred on dry land.¹ We use the Munich RE definition of an earthquake: an 'earth tremor whose natural origins are below the surface of the earth. A distinction is made between tectonic, volcanic, collapse earthquakes and tsunamis depending on the cause' (Munich RE, 2015). The lessons originate from past humanitarian responses across sectors. Humanitarian responses can be defined as actions that aim to 'save lives, alleviate suffering and maintain human dignity during and after man-made crises and disasters caused by natural hazards' (Development Initiatives, 2018). In light of the literature review conducted for this paper, it appears that post-earthquake humanitarian responses mainly span the following sectors: debris management, shelter, health, livelihoods and economic recovery, water, sanitation and hygiene (WASH), education, food security, nutrition and protection. When relevant, the lessons are presented in a sector-specific manner.

The ultimate goal of this paper is to improve humanitarian programming by drawing on the experiences of previous comparable disasters and highlighting the specific features that should be included in future humanitarian responses to earthquakes. The primary audience of ALNAP's Lessons Papers are humanitarian practitioners.² As such, this paper is organised around the various phases of the project cycle in order to determine what can be improved at each stage. The structure of the report reflects the Inter-Agency Standing Committee (IASC)'s six phases that all humanitarian projects should include: (B) assessment and analysis, (C) strategic planning, (D) resource mobilisation, (E) implementation, and (F) monitoring, evaluation, accountability and learning (MEAL).

This lessons paper therefore seeks to answer the following research question:

Across the project cycle, what lessons can be learnt from sectoral and multi-sectoral humanitarian responses to earthquakes since 2008?³

The next section details the methodology used to extract the lessons learnt, and the subsequent section applies these lessons across each stage of the project cycle.

Methodology

This lessons paper is the result of a structured review of available literature conducted between June and August 2018. The methodology used is aligned with the one described in [Lessons Papers: A Methods Note](#) developed by the ALNAP Secretariat in 2017 (Dillon and Campbell, 2018). An inception report was prepared by Key Aid Consulting and reviewed by ALNAP in June 2018. Its purpose was to ensure the rigour of the literature review, while maintaining an inclusive approach to the evidence produced by the humanitarian system. A detailed breakdown of the methodology can be found in the [Annexes](#) to this paper.

This paper relies on a wide variety of documents (e.g. academic articles, evaluation reports, lessons papers) published since 2008, covering major earthquakes such as those in Pakistan (2005), China (2008), Haiti (2010), New Zealand (2011), Japan (2011) and Nepal (2015). It intentionally excludes lessons related to disaster preparedness, focusing exclusively on responses occurring post-earthquake, as responses implemented prior to an earthquake could be the topic of an entirely separate lessons paper.

For some topics (e.g. dealing with body disposal after an earthquake, working with search and rescue teams, or dealing with hazardous material among rubble), there is relatively little information in the documents screened, so the paper does not cover these topics in any detail. The paper also includes a limited number of lessons in the MEAL section, because only a few documents mentioned the challenges of conducting evaluations in post-earthquake contexts.

The lessons of this paper aim to be as earthquake-specific as possible, but in some cases, the authors decided to include lessons on a topic even though they may not necessarily be earthquake-specific. In each case, there is an explanation as to why the lesson has been included. Considering that this paper is primarily aimed at humanitarian practitioners, the authors have attempted to make all lessons as actionable as possible, presenting both the issue and potential solution(s) found by humanitarians in previous situations. Nonetheless, in some cases, solutions were either not found at all, or not present in the documents analysed; hence the lesson does not suggest potential solutions.

The literature review followed a rigorous screening process to determine which documents should be eligible. Using search strings defined in relation to the research question, the authors identified a total of 3,971 records from a list of relevant databases (see [Annex 2](#) for a full list of search strings and databases). Based on the titles and abstracts of shortlisted documents, the authors excluded 3,832 studies that were irrelevant to the research question. All remaining 139 studies were then included in Zotero where 51 duplicates were identified and further excluded. The authors then screened full texts of the remaining 88 documents and excluded a further 22 studies, either because they featured no lessons learnt or because they focused exclusively on disaster preparedness, which as noted is beyond the scope of this paper. The 66 remaining documents then went through a quality appraisal phase (see [Annex 2](#) for the quality appraisal tool).

Considering the overall poor quality of the study designs and methodologies, the authors decided not to exclude any study based on quality criteria (excepting one that was an excerpt from another study). The poor quality is explained by the fact that many studies were lessons papers, which primarily aimed to be accessible rather than to demonstrate methodological rigour. All 65 papers included did, however, state that they are based on data collected from project stakeholders (e.g. crisis-affected people, implementing agencies, local authorities) and are not merely a reflection of their authors' views. The authors of this document used the different papers to triangulate emerging lessons learnt and to ensure reliability of the analysis.

As a result, the authors selected 65 studies for inclusion. They then extracted and coded relevant data using a data extraction matrix (see [Annex 2](#) for the data extraction tools).

Confidence rating

To help readers understand the quality and breadth of evidence supporting each lesson, the authors have assigned a confidence rating to each, where 1 = low confidence, 2 = medium confidence, 3 = high confidence, and 4 = very high confidence. This scoring is based on the averaged quality score of each document cited in that lesson, the number of documents the lesson draws from, and the deviation of that lesson as compared to the mean. The detailed methodology for the scoring of all lessons, as well as the scoring matrix, is available in [Annexes 1 and 2](#).

Below are examples of the confidence ratings used to grade the lessons throughout the report:



LOW CONFIDENCE



MEDIUM CONFIDENCE



HIGH CONFIDENCE



VERY HIGH CONFIDENCE

Lessons learnt

A. Across the project cycle

This section addresses lessons that emerged from the reviewed documents that are applicable across the entire earthquake response project cycle. These lessons are of utmost importance; they should be the pillars upon which the humanitarian community builds post-earthquake responses. The importance of these lessons is highlighted by the consistently high number of documents in which the lessons (or elements of them) can be found.

Lesson 1: Engage broadly and rapidly with local and national actors – even the most affected communities and authorities have some level of capacity after an earthquake

HIGH CONFIDENCE: 

It is a common misconception that after an earthquake (as with any crisis), local communities and governments become helpless. On the contrary, the documents reviewed for this lessons paper demonstrate that even the worst affected actors still retain some level of capacity. Communities, for instance, can overcome the physical destruction of infrastructure by relying on their networks, skills, leadership and ability to self-organise. One lessons paper credited communities as being the ‘first responders’ in many crises (ACAPS, 2015: 1).

After the 2010 earthquake in Haiti, civil society organisations (CSOs) took an active role in providing affected and displaced populations with immediate assistance (even though CSO staff and their families were affected too). This was feasible due to the strong pre-existing culture of CSOs in the country (IASC, 2010: 7). Similarly, in Peru, after the 2007 earthquake, CSOs (particularly groups associated with the Catholic Church) played an active role in distributing in-kind relief and offering informal institutional support (Elhawary and Castillo, 2008: 13).

While working with CSOs is recognised as an important element in relief efforts, many of the documents reviewed noted the need for humanitarian actors to increase their engagement with civil society. The same report that noted the role of CSOs in providing immediate assistance in Haiti also found that the response lacked a systematic method of engaging CSOs and local authorities and including them in coordination mechanisms (IASC, 2010). This lack of engagement negatively affected humanitarian actors’ understanding of the context they were operating in and the sustainability of the assistance provided. It also prevented national and/or local capacity development (IASC, 2010: 7).

Similar situations occurred elsewhere. After the 2008 earthquake in Wenchuan, China, one of the most important challenges faced by the humanitarian community was the low level of community participation both in general and in developing community-based disaster management (CBDM) organisations and coordination mechanisms (Chen et al., 2016: 110). In Nepal, one report found that while there was a plethora of CSOs that represented various vulnerable groups and understood their needs, international humanitarian actors did not proactively engage with these groups and CSOs were not well integrated into the United Nations (UN) cluster system. This was a missed opportunity to capitalise on a valuable resource to inform response programming (Barber, 2016). In general, the architecture of the global humanitarian system needs to be reviewed to ensure that it fosters partnerships with CSOs (IASC, 2010: 2).

Indeed, there is also a need to work more closely with local governments. Although it is difficult to obtain accurate figures, there has been a trend among donors since the 1990s of providing direct assistance to international and national non-governmental organisations (NGOs) as a way of bypassing state institutions that may be perceived as inefficient or corrupt. However, this approach can further undermine the capacity of governments, which already struggle with post-earthquake financing to provide quality services. National governments are responsible for sustainability of such basic services after the recovery phase, and bypassing governments in this manner can lead to long-term capacity and accountability issues (Ansari, 2010b; Hartberg et al., 2011).

To overcome these challenges, documents reviewed suggest engaging broadly and rapidly with CSO and local government actors. Key lessons learnt about how to engage include the following:



Integrate government capacity development into all earthquake recovery plans.



- Integrate government capacity development into all earthquake recovery plans, to help governments develop higher-quality and sustainable services (Ansari, 2010b: 2). This can include developing a strategy for strengthening an organisation's coordination with governmental agencies, and planning on how to allocate resources to ensure comprehensive capacity development at various levels, but especially with local authorities (McGearty et al., 2012).
- Ensure that the humanitarian assistance provided is harmonised with national development priorities (Ansari, 2010a). This is important for making sure that recovery is locally led, which increases its legitimacy among affected populations. This was an essential element when considering the Multi-Donor Trust Fund (MDTF) for Haiti. As noted by Oxfam (Ansari, 2010a: 9), 'If the MDTF is perceived as a mechanism for imposing foreign will on Haiti, or controlling the development of the country from the outside, or as some sort of punitive measure following years of governmental mismanagement and corruption, it will not work'.
- Build on existing local knowledge, as earthquakes are common in many locations (e.g. occurring every 15 to 20 years), which means that many affected populations and local organisations already possess useful experience. For instance, the National Emergency Operation Center in Nepal was established long before the 2015 earthquakes, and there are also several local NGOs that focus solely on earthquake response (Sanderson and Ramalingam, 2015: 6). In addition to traditional partnerships with national and local organisations, an effective method for capitalising on existing knowledge is to include national staff in all response teams, and to ensure that they are represented in management and decision-making roles.
- Think of creative ways to work with local and national actors and include them throughout the various phases of the project cycle. The French NGO Solidarités International established bilateral relations with a number of relevant institutions, including the Port-au-Prince City Council, the Ministry of Public Works, Transportation and Communication, DINEPA (National Directorate of Drinking Water and Sanitation) and others. These institutions jointly conducted monitoring and evaluation of the activities implemented by Solidarités International and its partners (Solidarités International, 2017: 20-21).

Lesson 2: Acknowledge and do not undermine the work of private sector entities to ensure business continuity following an earthquake

HIGH CONFIDENCE: 

The complex and challenging nature of responding to earthquakes has highlighted that the humanitarian community cannot and should not operate in isolation. Private sector actors, especially in urban environments, will often be working to ensure business continuity of various services such as water, sanitation, telecoms, food markets, health, etc. (Groupe URD, 2011: 2). It is essential that the humanitarian community becomes more open to working with private sector actors and develops more creative approaches for doing so (IASC, 2010; Bhattacharjee and Lossio, 2011).

The private sector is often willing to be engaged in humanitarian responses. This collaboration is necessary and should occur across all phases of the project cycle.⁴ Humanitarian actors should direct their efforts as follows:

- Improve knowledge of financial resources available from the private sector (including business interests, priorities and procedures involved in securing funding). There are many instances where the humanitarian sector has not been able to capitalise on such funding (Bhattacharjee, 2016).
- Engage further with the local private sector so as to do no harm to local markets and prevent the duplication of existing services (World Bank, 2016). For instance, after the Haiti Earthquake in 2010, the international humanitarian community's programming efforts created unfair competition with existing service providers by providing services and goods free of charge, which further damaged the existing economy. Instead, actors should rely on available local resources to the greatest extent possible (Sanderson and Ramalingam, 2015: 10).
- Where local private sector actors are continuing to function, consider relying on them to deliver the response, through local procurement or by distributing cash grants/vouchers to crisis-affected households. In Nepal, for instance, one idea evoked in a previous ALNAP Lessons Paper was to mitigate the reduction in tourism by having humanitarian actors utilise the services of local tour operators for transportation, logistics and communications (Sanderson and Ramalingam, 2015: 10). When the private sector has been hit and its functionality damaged by the earthquake, international responders could consider supporting the sector. This can include providing cash grants to local shops so that they can replenish their stocks and restart their businesses.

Lesson 3: Do not let infrastructure and access challenges get in the way of communication, especially with isolated communities

HIGH CONFIDENCE: 



In the aftermath of an earthquake ...lack of communication channels can [lead to] lack of participation from affected populations, which can jeopardise efforts to ensure that assistance meets their needs



Earthquakes can disrupt communications infrastructure, limit physical access to affected communities and, as such, make it more complicated to deliver a transparent response. For instance, an evaluation by Save the Children in Nepal in July 2015 (two months after the earthquake) revealed that 66% of respondents 'lacked the information they needed to benefit from the earthquake response'. The evaluation also reported that 'in almost all focus group discussions... people said they did not know about the reconstruction' (Barber, 2016: 21). Although these results are specific to a single programme, the vast majority of the evaluation reports consulted for this paper found that international responders struggled to clearly communicate their efforts to earthquake-affected populations (Roussel, 2016).

In the aftermath of an earthquake, when the situation can appear chaotic, lack of communication channels with affected populations can have several negative consequences. These include: a lack of participation from affected populations, which can jeopardise efforts to ensure that assistance meets their needs (Moody et al., 2018: 8); difficulty engaging with marginalised groups due to political reasons (Grünewald and Burlat, n.d.); increased stress (Rees-Gildea and Moles, 2012: 81); and an inability to control the spread of rumours, which may exacerbate the situation (Sanderson and Ramalingam, 2015: 17).

Key lessons learnt to avoid such situations include the following:

- Adapt communications to the channels being used and the population groups being targeted. Past experience has shown that local advertising and marketing agencies may help convey key messages and reach target groups in urban settings (Sanderson et al., 2012: 11). Although they were underused, local radios were efficient in reaching marginalised populations in Nepal (Grünewald and Burlat, n.d.). Always aim to maximise the use of appropriate communication channels.
- Ensure that information communicated to affected populations is not contradictory – which requires appropriate coordination mechanisms to be put in place (Sanderson and Ramalingam, 2015: 17). For instance, after the Bam Earthquake in Iran, information systems were providing a wide variety of messages that confused both government planners and crisis-affected people (Nekoei-Moghadam et al., 2016: 92).
- Use communication as a two-way mechanism to ensure that affected populations are not only aware of the humanitarian assistance available but are also able to provide feedback and help with monitoring. For instance, in Haiti, the International Federation of Red Cross and Red Crescent Societies (IFRC) established a dedicated team to handle communication with crisis-affected people, using two-way SMS messages (Rees-Gildea and Moles, 2012: 19).

Lesson 4: Ensure that cross-cutting issues such as gender, security and the environment are incorporated at all stages of the response

MEDIUM CONFIDENCE: 

As with the initial response to any emergency situation, implementers do not always prioritise cross-cutting issues. The documents reviewed for this paper illustrate that, in general, these issues are too often neglected, thus exacerbating potential negative effects of the earthquake.

Earthquakes should be used as an opportunity to 'build back greener'

The environment is a particularly relevant cross-cutting issue when looking at earthquake responses, since this type of natural disaster has serious secondary impacts on the environment. The destruction of infrastructure following an earthquake may increase pollution levels in the atmosphere and water. For instance, the 1995 Kobe Earthquake in Japan generated the same number of dioxins as the 1976 Seveso (Italy) agrochemical plant explosion (Wendelbo et al., 2016: 54).

Programme implementers need to be mindful of all these potential negative effects, but the lack of literature on the topic demonstrates that environmental concerns remain a relatively low priority. Indeed, although the environment was mentioned in various documents, only Wendelbo et al. (2016) included a significant reflection on the topic. One of the central lessons from that study is that humanitarian actors should consider earthquakes as an opportunity to ‘build back greener’. They can do this by using sustainable energy sources and materials in reconstruction, implementing production technologies that are cleaner in damaged industries, and improving urban services (including landfills and sewage collection systems), as well as promoting DRR approaches that are based on the local ecosystem (ibid.: 56).

Although the idea of ‘building back greener’ only appeared in a single document, other studies offered lessons on how to avoid doing further harm to the environment after an earthquake:

- Develop an environmental monitoring plan that captures the mitigation, institutional and monitoring measures to take during implementation of the response to prevent or reduce negative environmental impacts. This will require conducting an initial environmental assessment during the planning phase to assess the project’s potential impact on the environment (Jha et al., 2010).
- Ensure the appropriate balance between using locally sourced reconstruction materials and preserving a country’s natural resources. The IFRC response after the Haiti Earthquake attempted to reduce transportation emissions in order to lower its carbon footprint. However, due to widespread deforestation, the organisation ultimately opted to use imported wood for shelter reconstruction (Rees-Gildea and Moles, 2012: 32).
- Use available guidance on incorporating environmental protection concerns into programming. Jha et al.’s (2010) *Safer homes, stronger communities* includes an entire chapter on how to incorporate ecological considerations into debris management, including conducting an environmental risk assessment and preparing an environmental monitoring plan. While this guidance is not necessarily earthquake-specific, most of its recommendations are applicable to an earthquake response.

Ensure safety and security for earthquake-affected populations

Earthquakes, like other crises, unfortunately often lead to increased rates of smuggling, aggression and assault when certain actors take advantage of the cessation of various government services. This can occur in all types of settings (e.g. rural, peri-urban, urban), but according to one study: ‘A city’s security situation can easily escalate immediately after a disaster and remain at heightened levels for long periods of time’ (Hirano, 2012: 7).



[A]ffected populations are more at risk, due to the fact that they often have nowhere else to sleep than in the streets.



Other sources corroborate this observation and show how affected populations are more at risk, due to the fact that they often have nowhere else to sleep than in the streets. For instance, in Haiti, Oxfam collected various testimonies from people who reported being attacked in the streets and having their belongings stolen following the earthquake (Ansari, 2010b: 4). Unfortunately, the elevated level of crime appears to have been sustained years after the earthquake, with one report finding that even after two years, displaced persons in Port-au-Prince were concerned about night intruders, as rape and murder remained common occurrences (though largely unreported) (Hirano, 2012: 7).

Ensuring appropriate safety and security measures is paramount for any post-earthquake response and should be integrated into any programme design. It is important that these elements are based on consultations with affected populations and CSOs (Ansari, 2010b: 1). Documents reviewed for this paper outlined the following lessons on how to include protection in post-earthquake humanitarian programmes:

- Pre-empt the deterioration of the security situation after an earthquake by ensuring operational transparency and coordination among the national government, the UN, and international military actors (Ansari, 2010b: 4).
- Consult affected populations when conducting a threat assessment to determine what protection is needed and in which specific areas (ibid.).

- Expand night patrols of IDP camps (conducted by the police and the UN) to improve the security situation (ibid.).
- Increase the security of makeshift shelters for earthquake-affected populations, such as using solid wood instead of windows covered by tarps or by including locks on doors (Hirano, 2012: 7).
- Only work with legitimate community-based organisations to avoid inadvertently strengthening gangs (ibid.).

Ensure that the needs of all population groups, particularly the most vulnerable, are adequately addressed. One study outlined that in Nepal's post-earthquake context, the humanitarian community failed to provide safe spaces for women and adolescents that had been physically abused or victims of human trafficking (Chaudhary et al., 2017: 37). The documents reviewed confirm that the humanitarian community still has much more to do to integrate gender in post-earthquake programming. Although this issue may not necessarily be earthquake-specific, the studies reviewed consistently highlighted the fact that women's and girls' needs were often not properly accounted for in earthquake responses.⁵

The quality rating for this lesson is 20 out of 48. The findings are based on the lessons found in 9 documents. This lesson scored **2 out of 4** on the confidence scale, indicating a **medium level of confidence** in the findings for this lesson.



After the earthquake in Nepal, women from remote communities were trained to conduct protection and vulnerability assessments, to help ensure women and children are protected from further risks such as gender-based violence or trafficking. Credit: Russell Watkins/DIFD

B. Assessment and analysis

Situation analysis is the foundation upon which all humanitarian programmes are based. The quality of a humanitarian response is at least partly determined by how well the context, needs and capacities of those affected are assessed and understood. Earthquake responses are no exception. Evaluations reviewed for this paper found that in some cases organisations failed to undertake a quality needs assessment, and went on to demonstrate how this failure impacted the quality of the response. Building on the experience of previous responses, this section offers lessons on how to build a quality needs assessment in a post-earthquake context.

Lesson 5: Conduct thorough assessments which recognise and identify the distinct ways earthquakes affect different populations

HIGH CONFIDENCE: 

Determining which populations are most affected and less able to cope after a disaster is always a difficult task for humanitarian organisations; determining which populations are ‘directly’ or ‘most’ affected by an earthquake is almost impossible, considering that in some cases, almost everyone in the country may have been affected in one way or another. In Nepal, for instance, the 2015 earthquake affected a wide area, from people in Kathmandu to those in the most remote mountainous regions (Groupe URD, 2011). Also, while poverty and vulnerability are often interlinked before as well as after a disaster, it is not always the poorest people who are most affected in a post-earthquake context, as those who own or live in solidly constructed houses are more likely to be caught up under the rubble.

International responders should always conduct assessments so that they understand the distinct impacts of the earthquake on different groups of people. As such, they need to understand the respective strengths and vulnerabilities of children, men, women, older people, recent migrants, host communities, and any other group that may have special needs after a disaster. Key lessons for conducting a comprehensive assessment include the following.

- Collect data that is disaggregated by gender, age, ethnicity and income (ACAPS, 2015: 1).
- Pay specific attention to vulnerable, marginalised and hidden populations. ACAPS reported in 2015 that Dalit communities in Nepal were too often excluded from relief and rehabilitation efforts due to their marginal social standing, discrimination, and areas of residence (in secluded spaces far from mainstream settlements).
- Engage with local communities directly, and develop channels and space for interaction and dialogue with affected populations. This will ensure that the programme hears from those who are most vulnerable, who may not otherwise be represented in government or community-based organisations (Grünwald and Burlat, n.d.).
- Enable national staff to contribute their local contextual knowledge to the assessment, as this can help tailor responses to better meet the needs of affected populations and prevent avoidable mistakes. For instance, Catholic Relief Services (CRS) in Haiti reported that having consulted national staff, it decided not to share programme budgets that included staffing costs (as initially planned), as doing so could put field staff at risk (Hirano, 2012: 29).

While conducting a thorough assessment will be a complicated task in any type of disaster, it is even more challenging in post-earthquake contexts. Indeed, as discussed further in [lesson 10](#), staff in-country before the quake may be affected or have relatives affected by the disaster. There are also several practical challenges involved in bringing external staff to affected areas (e.g. where to house such staff when most buildings have been destroyed) (Bhattacharjee and Lossio, 2011).

Lesson 6: Follow established good practice for needs assessments, recognising the specific challenges of doing so in urban areas

MEDIUM CONFIDENCE: 



Vulnerable populations can easily be overlooked in urban settings. This is particularly problematic in post-earthquake situations, where humanitarian assistance needs to be delivered to large population segments with minimal delays



Earthquakes hit both urban and rural settings indiscriminately.⁶ Nonetheless, as pointed out in a previous ALNAP Lessons Paper on urban disasters, growing urban populations over recent decades make it more likely for disasters to affect cities (Sanderson et al., 2012: 3). This generates various challenges, as the humanitarian community is more experienced with conducting needs assessments in rural settings (Grünewald et al., 2011: 5; Sanderson et al., 2012: 4). Evaluations of the Haiti 2010 earthquake revealed the following challenges around conducting a needs assessment in urban contexts:

- Vulnerable populations are more likely to go unnoticed in cities due to the large population density.
- Cities are more difficult to represent in a static picture because of constant population movements.
- Targeting vulnerable groups is difficult because different demographic groups live next to one other (e.g. rich and poor areas are not always segregated).

For all of these reasons, vulnerable populations can easily be overlooked in urban settings. This is particularly problematic in post-earthquake situations, where humanitarian assistance needs to be delivered to large population segments with minimal delays (Sanderson et al., 2012).

Responses in Haiti in 2010 also evidenced the humanitarian community's general lack of knowledge and preparedness in terms of assessing needs in urban contexts (Grünewald et al., 2011; Hirano, 2012). As the IASC noted: 'Urban contexts are still alien to most humanitarian organisations... There is a need to develop both knowledge and training so that the aid system can properly address crises in urban contexts' (IASC, 2010: 25). International responders could address these issues by:

- working with partners that have the knowledge they lack,
- communicating with affected populations to understand their actual needs,
- and encouraging humanitarian actors to receive training on the topic.

For more on this issue, refer to resources on how to conduct needs assessment in urban contexts, such as the International Institute for Environment and Development (IIED)'s Review of needs assessment tools, response analysis frameworks, and targeting guidance for urban humanitarian response.

Lesson 7: Conduct assessments in ways that avoid exacerbating tensions between host communities and internally displaced persons

LOW CONFIDENCE: 

Providing assistance (goods or services) to people affected by an earthquake (who may be displaced and living in camps or other serviced areas) runs the risk of creating tensions with neighbouring populations who may be classed as 'non-affected' but may struggle to meet their basic needs. Such a situation can also create perceptions that aid is being delivered in an unjust manner, especially considering that communities often bear additional costs when hosting displaced populations. While this lesson is not earthquake-specific, it is worth mentioning here because several evaluations reported that most organisations struggled with targeting vulnerable affected population groups.⁷

The IASC reported that many organisations operating in Haiti in 2010 failed to consider the strain put on host communities by the 600,000 IDPs, in a country with widespread underlying vulnerability and poverty. Failure to address these issues raises the question as to how the humanitarian community should define vulnerability, and which criteria determine 'affected' communities (IASC, 2010: 25). To avoid creating tensions between host communities and those groups who have been displaced by the disaster, Oxfam advises targeting communities living in areas that surround camps which were created due to an earthquake, because it 'reduces the number of people who believe that they would be better off in camps' (Young and Henderson, 2010: 13).

C. Strategic planning

Strategic planning builds on the assessment of humanitarian needs, which provides ‘the evidence base and analysis of the magnitude of the crisis and identifies the most pressing humanitarian needs’ (Humanitarian Platform, 2018). Building on the successes and failures of previous humanitarian programmes, the following section outlines lessons learnt that are specific to conducting strategic planning after an earthquake.

Lesson 8: Locate spaces to store debris and, if appropriate, use short-term conditional assistance to clear it

HIGH CONFIDENCE: 

Earthquakes cause a significant amount of debris and rubble when they destroy buildings and other infrastructure (Kilby and Williamson, 2011; Jackson, 2015). This is particularly relevant in urban settings. As demonstrated by previous responses, one of the most urgent actions is to clear the debris to make critical roads and rescue sites accessible (Mughal et al., 2015). This requires identifying available spaces that can temporarily house rubble or that can be used to build temporary shelters. A previous ALNAP Lessons Paper credited the mapping and use of free spaces in Nepal for storing debris as a success of the humanitarian response (Sanderson and Ramalingam, 2015). At the same time, however, the number of debris storage areas after the earthquake in Nepal proved to be inadequate, which demonstrates how difficult debris management can be in post-earthquake contexts.⁸

Cash-for-work (CfW) and food-for-work (FfW) schemes can be appropriate responses in post-earthquake contexts, as they can provide crisis-affected people with temporary labour opportunities and jumpstart the reconstruction process by supporting debris-clearing efforts, for example (Brady, 2012).

CfW and FfW were used extensively after the 2010 Haiti Earthquake. For instance, Oxfam employed nearly 6,000 very poor or poor households for unskilled labour activities, providing them with an income (Young and Henderson, 2010: 10). Other CfW programmes in Haiti were used to drain and clear canals and ravines, clear rubble, and rehabilitate infrastructure (Grünwald et al., 2011: 27). In Nepal, the United Nations Development Programme (UNDP)’s CfW programme hired nearly 3,500 households to remove debris from public buildings, demolish private houses, and help rehabilitate local government offices (Bhattacharjee, 2016: 15).

Despite these positive examples, there are significant risks and issues associated with such schemes. Engaging non-specialised labour in debris clearance can expose individuals to safety hazards, remove part of a household’s workforce, and undermine more traditional forms of mutual help (Grünwald et al., 2011: 27). Safety hazards are a particular risk when people lack the training or appropriate materials to protect themselves, which is why one report stressed the importance of teaching participants ‘safe demolition’ (Bhattacharjee, 2016: 15).

CfW schemes used after the Haiti Earthquake faced a wide array of problems. These included a lack of preparation and capacity to implement on a large scale, a slow governmental approval process, and difficulties in identifying both the activities to conduct and the affected populations to participate (Grünwald et al., 2011: 27).

To help avoid some of these issues, implementers should consider various elements such as the duration of each individual engagement in a CfW/FfW scheme, the type of activities targeted for CfW, the wage paid to participants, and the provision of insurance to participants when engaging in CfW/FfW schemes. For more information about these topics, refer to guidelines such as MercyCorps’ Guide to cash-for-work programming (MercyCorps, 2007).

Although this is not necessarily earthquake-specific, it must be noted that beyond conditional assistance, there have been various successful examples of using unconditional cash transfers (UCTs) in earthquake response. Examples of this are listed below.

- Christian Aid's (2012) use of UCTs after the Haiti Earthquake to meet a wide range of basic needs, including food, fuel, shelter materials, and paying medical bills.
- The use of cash grants in post-earthquake Pakistan for households to meet their basic needs without having to sell off assets (Cosgrave, 2008).
- IFRC's direct cash transfers to earthquake-affected populations in Nepal, which 'for the most part... was deemed a success and likely to be considered in future responses' (Cook et al., 2018).

Lesson 9: Anticipate issues related to lack of documentation and complex land tenure

HIGH CONFIDENCE: 

Earthquake-affected populations often lose, or no longer have access to, their identity documents (ID), which are often necessary to access government or humanitarian assistance to begin rebuilding their lives. Some populations are more vulnerable to having lost their documents. One example from Nepal found that nearly 50% of surveyed women no longer had their citizenship certificates, and 25% did not have their property papers. This was typically because their husbands, or other men of the household, had been carrying these documents and had died or migrated.⁹ As a result, these women could not prove that they owned – or were married to the man that owned – their houses, which demonstrates the dramatic and isolating consequences of losing these types of documents (Oxfam, 2016: 4).



[I]n Haiti... many organisations were not prepared for the complications associated with issuing IDs when displaced populations had lost their legal papers during the earthquake.



Other earthquakes also illustrate how the loss of IDs can impede access to humanitarian aid. For instance, in Haiti, the IASC reported that many organisations were not prepared for the complications associated with issuing IDs when displaced populations had lost their legal papers during the earthquake (IASC, 2010: 22).

Another issue that humanitarian actors should anticipate after an earthquake is that of land tenure. The weak and often confusing land ownership laws in countries such as Haiti have had significant negative consequences on the recovery process. These challenges can take considerable time and resources to overcome, as sorting out informal ownership and the lack of records can require local government entities, such as city councils, to provide permission or act as a negotiator with landlords for work to begin (World Bank, 2016: 87; Solidarités International, 2017: 24). Complicated land tenure in Nepal also negatively affected recovery processes (Jackson et al., 2016: 9).

Possible ways forward include the following:

- Work with government to ensure that all landless people are provided with a victim identification card, and that women's names are included on these cards if there is only one card provided per household. The humanitarian community should also undertake any further feasible actions to ensure that lack of documentation does not delay reconstruction and resettlement efforts (ibid: 44).
- Ensure that the delivery modality chosen for reconstruction programmes does not exclude any groups (including women) that have lost or have never had official IDs (Barber, 2016: 5). If cash assistance is used, ensure that Know Your Customer (KYC) regulations¹⁰ are adjusted, for example, by agreeing with the financial service providers to use NGO ID cards as opposed to national ID cards.
- Implement housing programmes, not only for property owners but for all people whose homes were damaged or destroyed by the earthquake, and whether or not they possess the correct documentation. For instance, in Nepal, the government's post-disaster needs assessment (PDNA) noted that the National Shelter Policy should be the basis for all reconstruction programmes. This policy requires the government to provide poor people or those who reside in unsafe settlements with land (Barber, 2016).

D. Resource mobilisation

Financial assistance from international donors is required for earthquake recovery and reconstruction because the impact often exceeds a country's resources and capacity to respond. One of the challenges faced by humanitarian practitioners involved in post-earthquake response is how to quickly make resources available. Although the lessons in this section are as earthquake-specific as possible, they may also be applicable to other types of large-scale, rapid-onset disasters.

Lesson 10: Mobilise sufficient and appropriate surge capacities

MEDIUM CONFIDENCE: 



[S]urge teams should have regional/country knowledge, technical knowledge and experience with large-scale emergencies.



Not all population groups are affected by a disaster in the same way. For instance, poor people may be more badly affected by landslides as they tend to live in precarious areas with no concrete housing, whereas people who live in or own houses or buildings made of concrete may be more affected by destruction of buildings. But one of the specificities of earthquakes compared to other disasters is that they often hit all types of population groups. This means that NGO country offices are likely to have diminished capacity, as their teams may have been directly or indirectly affected by the quake. In such contexts, international responders must mobilise sufficient and appropriate surge capacities. As well as being able to be deployed at very short notice (usually less than 72 hours), surge teams should have regional/country knowledge, technical knowledge, and experience with large-scale emergencies (for example, the UN cluster system, and humanitarian financing coordination).

The Norwegian Refugee Council (NRC)'s expert deployment in Nepal in 2015 is a successful example of mobilisation of appropriate surge capacities to support UN agencies in earthquake-affected areas. The programme evaluation reported several successes in terms of appropriateness, as deployed staff complemented existing staff in-country (Baker and Narayanan, 2016: 6). Relatively few host agency staff in Nepal had experience in responding to large-scale disasters, whereas NRC's deployees had both prior experience in interagency coordination and good knowledge of the local context, culture, language, and geography, because many were either Nepali nationals or South Asians with experience in Nepal (ibid.).

Nonetheless, even when the team deployed is appropriate, other factors must be taken into account to maximise effectiveness. For instance, several evaluations reported that the length of deployment was often too short. To avoid this, NRC recommends a minimum three months' deployee availability in order to ensure continuity.

The evaluation of the United Nations Office for the Coordination of Humanitarian Affairs (OCHA)'s response to the Haiti Earthquake reported that the organisation faced similar issues to those facing NRC. Although OCHA was successful in deploying a significant number of people in the first six weeks after the earthquake, 'deployments faced major challenges in getting the right balance of numbers and quality skills and expertise' (Bhattacharjee, 2016: 13). Similarly to NRC, OCHA also failed to deploy staff for a sufficient amount of time, which made 'staff continuity a major problem' that had a profound impact on the quality of the response (ibid.). For more information on surge teams, see Baker and Narayanan (2016), and Bhattacharjee and Lossio (2011).

E. Implementation

Implementation builds on the needs assessment, strategic planning and available resources. It is the phase when the response really takes shape. Because the needs of affected populations evolve quickly in post-earthquake contexts, the implemented project must be adaptive enough to meet their needs. Given that earthquakes disrupt all aspects of affected people's lives, the response covers various sectors. Lessons in this section touch upon shelter, WASH, education, and health, with the cross-cutting theme of ensuring appropriate communication with affected populations.¹¹

Lesson 11: Account for quickly evolving health needs in post-earthquake contexts. Be aware that epidemics can happen

HIGH CONFIDENCE: 



Epidemics can and do happen. Indeed, earthquakes can lead to mass displacement and inadequate access to drinking water...



After an earthquake, as in any other post-disaster context, crisis-affected people are more exposed to disease (Sanderson and Ramalingam, 2015: 23). Although ALNAP's previous lessons paper on earthquake responses found that the risk of epidemics was relatively low (Cosgrave, 2008: 11), experiences since then (for example, cholera in Haiti and Nepal) have demonstrated that epidemics can and do happen. Indeed, earthquakes can lead to mass displacement and inadequate access to drinking water, which make people vulnerable to communicable diseases such as cholera, meningitis and measles, which can reach critical levels (ACAPS, 2015: 1; Hall et al., 2017: 41). Another significant challenge in post-earthquake contexts is that the affected population's needs constantly change. According to the Pan American Health Organization (PAHO), the 'traditional disaster management cycle does not apply to the health sector in cases such as Haiti where crises succeeded each other when not overlapping' (de Ville de Goyet, 2011: 53).

To account for this challenge, the health sector needs to be able to adapt to the affected population's changing needs. Additional guidance for improving the health sector in humanitarian response is well documented in health-specific resources, such as Health response to the earthquake in Haiti (ibid.).

Key lessons for improving the response to affected populations' health needs include the following:

- Ensure that field hospitals are properly equipped to provide immediate quality care. Field hospitals play a critical role in offering timely care to affected communities, particularly in the post-earthquake context where hospital infrastructure may have been damaged. The earthquakes in Iran (Bam) and in Haiti, however, had issues with delays and lack of proper planning and equipment, which impacted the quality of care provided (Nekoei-Moghadam et al., 2016: 91). One study found that more foreign field hospitals were established in post-earthquake Haiti than for any other previous sudden-onset disaster, but none followed the essential deployment requirements of both the World Health Organization (WHO) and PAHO. The lack of transparency and available data also rendered it impossible to determine the effectiveness of the first wave of foreign field hospitals (Gerdin et al., 2012).
- Monitor disease outbreaks as closely as possible. As stated in one report, 'Good disease surveillance is critical, and can be facilitated by new monitoring technologies and with appropriate triggers for a range of responses such as immunisations' (Sanderson and Ramalingam, 2015: 24). Although this may not have been used yet for an earthquake response, a positive example comes from the Philippines, which had implemented a nationwide, mobile-based, post-disaster health monitoring system. Typhoon Haiyan triggered several disease surveillance concerns, which national and local actors were then able to address. This system proved to be especially useful in the post-emergency setting (ibid.: 25).
- Pay close attention to the link between WASH needs and health risks. Given the outbreak of a waterborne disease (cholera) after the Haiti Earthquake, effective and timely responses to water and sanitation needs are critical to prevent further spread of the disease. Critical early priorities include private and safe latrines, clean water, private bathing spaces, and female hygiene materials (ibid.). Given their interrelated nature, it is important for WASH and health issues to be addressed through a coordinated approach (de Ville de Goyet et al., 2011: 53).

- Addressing sexual and reproductive health (SRH) needs is also particularly important in urban settings, but can be overlooked by the international community. A positive example is the Sprint Initiative of the International Planned Parenthood Federation (IPPF), which deployed staff to Nepal and implemented a range of tools and methods to ensure that people's SRH needs were appropriately assessed and dealt with (Sanderson and Ramalingam, 2015: 25).
- Amputations must be considered very cautiously. Although they may save lives, they also have serious long-term social and economic consequences for the individuals concerned. For instance, de Ville de Goyet et al. (2011: 72) outlined that in Haiti, people who have lost limbs were sometimes considered as 'punished by god for their sins', meaning that such operations should only be used as a last resort, considering the high social and human cost they bear among certain cultures and within specific communities.
- Increase psychological support for affected populations. As earthquakes are traumatising events, survivors' levels of stress, depression, and other mental health issues can significantly increase. As humanitarian actors are limited in the amount of psychological support they can provide directly, one option is to train local partners to offer low-cost and ongoing psychological support to affected communities (McGearty et al., 2012: 9), in local languages and appropriate formats.

Lesson 12: Prioritise the repair of existing structures, support owner-driven reconstruction, preserve architectural heritage and use relocation and resettlement only as a last resort

HIGH CONFIDENCE: 

The relocation of certain communities can be the inevitable consequence of an earthquake and is sometimes the only possible measure to mitigate against future disasters. Yet, experience of relocation plans in post-earthquake contexts demonstrates that these are rarely successful, often due to distance from place of origin and the lack of economic activities available to displaced people (Clermont et al., 2011: 2). Communities living in densely populated camps, having been relocated to new settlements 'located away from the capital with few services or job opportunities', was a central reason for extending the relief period after the Haiti Earthquake (ibid.).

As reported by a previous ALNAP Lessons Paper, *Responding to urban disasters*, failure to recognise the importance of location is counterproductive in the long term because households who are not satisfied with the area they have been relocated to often end up moving back to the same high-risk areas to access their vital social networks and economic opportunities (Sanderson et al., 2012: 23). In order to avoid such situations, the humanitarian community should ensure that relocations are only used as a last resort. They should prioritise repairs to existing structures to ensure that earthquake-affected populations can move back into their homes and start rebuilding their livelihoods (Rees-Gildea and Moles, 2012).

In doing so, the humanitarian community should strive to find the right balance between 'building back better'¹² and preserving architectural heritage. While there is clearly a need to withstand further shocks, humanitarian organisations must also consider how reconstruction efforts can preserve a location's cultural heritage, as this is a source of identity for affected populations and can support psychological recovery (Audefroy, 2011: 461; Barber, 2016). One way to achieve this is through owner-driven reconstruction, which means providing affected communities with financial, material and/or technical assistance so that they can rebuild their homes (or oversee local labourers who handle the reconstruction). As well as offering a method for preserving architectural heritage, owner-driven reconstruction can be an empowering and dignified approach, allowing populations to be proactive in their own recovery and adjust the reconstruction efforts to their needs (Jha et al., 2010; Tafti and Tomlinson, 2015). Participatory methods such as the participatory approach for safe shelter awareness (PASSA)¹³ are also useful to ensure that affected populations drive reconstruction choices (Rees-Gildea and Moles, 2012: 27).

In cases where reconstruction is not possible, the humanitarian community should ensure that it learns from the failures and successes of past relocations. A central point to bear in mind is that poor populations are more vulnerable to relocations. Looking at the 2008 Wenchuan Earthquake, poor populations are more likely to live in high-risk areas, either because they cannot afford to



Ensure relocations are only used as a last resort.... Households who are not satisfied with the area they have been relocated to often end up moving back to the same high-risk areas...



live somewhere else or because they are tied to an economic activity in the area where they live (Chen et al., 2016: 106). Based on this finding, it is crucial that the humanitarian community ensures sufficient opportunities for restoring livelihoods in the relocation place.

Good practices to maximise the chances of generating a successful relocation plan include the following:

- Avoid relocating populations multiple times (as was the case after the Wenchuan Earthquake) (Chen et al., 2016: 91.) as relocation can itself be a traumatic experience. To avoid this, ensure that land identified for relocation – as well as having sufficient capacities to be restored – is safe for relocated populations (Jackson et al., 2016: 4).
- Ensure that the reconstruction and resettlement plans are community led (Jackson et al., 2016: 4). Experience has demonstrated that ‘an effective relocation plan is one that the affected population helps develop and views positively’ (Jha et al., 2010: 77).
- Another way to increase communities’ acceptance of relocation is to provide incentives to affected populations to ensure that they relocate voluntarily rather than being forced. This includes looking beyond housing to ensure that resettlement areas provide other basic needs, including water, electricity, schools, health posts, etc. It is equally important to consider the livelihood needs of relocated populations, ensuring access to agricultural land where possible and permissible (Jackson et al., 2016: 25).
- Relocation plans are not necessarily earthquake-specific and are often necessary following tsunamis, typhoons and hurricanes. Humanitarian practitioners should therefore also draw on lessons learnt from other disasters. See Jha et al.’s *Safer homes, stronger communities*, which takes stock of the successes and failures of relocation plans after Hurricane Mitch in Honduras (1998), the 2004 Indian Ocean tsunami in Sri Lanka and India, and Typhoon Frank in the Philippines (2008) (Jha et al., 2010: 83-86).

Lesson 13: Be cautious with setting up transitional shelters, which may hinder longer-term reconstruction

HIGH CONFIDENCE: 

After the 2010 Haiti Earthquake, the use of transitional shelters was controversial because there were fears these shelters would become permanent, which complicated longer-term reconstruction plans. For this reason, transitional shelter came under a wide range of criticism and started being defined as ‘a total waste of money’, ‘counter-developmental’ or ‘only fitting donors and aid agencies’ needs, not that of people’ (Sanderson et al., 2014: 144). Despite the evidence supporting these critiques, it must also be acknowledged that transitional shelters have actually helped meet the needs of earthquake-affected populations in several instances. After the 2003 Bam Earthquake in Iran, authorities estimated that permanent housing would not be available for at least two years in urban areas. By installing transitional shelters on vacant urban lots, the authorities avoided the displacement of populations to camps (Jha et al., 2010: 19-20).



Ensure that transitional shelters arrive quickly enough after the earthquake...



When using a transitional shelter approach, humanitarian organisations should bear in mind the following lessons:

- Use transitional shelters only as part of a wider process for establishing permanent housing. Key actions include promoting a safe return strategy, developing neighbourhoods across all sectors (e.g. education, waste management, leadership, livelihoods, etc.), and investing in knowledge, skills and capacities to build safe communities (Cohen, 2012: 7; Sanderson et al., 2014: 144; Vahanvati and Mulligan, 2017).
- Ensure that transitional shelters arrive quickly enough after the earthquake. In Haiti in 2010, the humanitarian community struggled to reach consensus on the shape of transitional shelters and to procure the necessary materials, which meant that the first shelters had barely been built within four months of the earthquake (Sanderson et al., 2014: 141). By this time, several affected populations had already restarted economic activities in camps, and transitional shelters were no longer fit for purpose. In Sri Lanka, however, the first transitional shelters were received four weeks after the 2004 Indian Ocean Tsunami and were considered rather successful.

- Ensure that if opting for transitional shelters, the response be adapted to the specific context (Davidson, 2011: 14). Transitional shelters are more complex in urban areas due to density and space parameters (Sanderson and Ramalingam, 2015: 19). Similarly, transitional shelters are often more successful in middle-income or high-income countries because their resources enable a move to permanent reconstruction more easily (Sanderson et al., 2014). Nonetheless, the previous example of the 2003 Bam Earthquake contradicts these rules to some extent - the earthquake happened in an urban context in Iran. Taking all examples into account, it seems clear that agencies need to recognise that every disaster is unique and that the only way to really determine whether an approach may be successful is to consult affected populations from the outset (Jha et al., 2010: 18).
- Donors should amend their strategies, in light of criticisms that they are more willing to fund transitional shelters that can be constructed and operational within a year than to provide funding for 'slow and incremental' initiatives (Sanderson, 2014: 147). Indeed, this is one of the factors explaining why transitional shelters were implemented in contexts where they were not appropriate. *Safer homes, stronger communities* refers to this, observing that possible interruptions in funding often hinder permanent reconstruction strategies (Jha et al., 2011: 16). In addition, an output-oriented set-up led to a preference for short-term infrastructure projects over those suited to better alleviate poverty (Lu and Xu, 2013). The latter type of project involved investments that were generally larger and longer term (Chen et al., 2016: 66).

Lesson 14: Address long-term as well as immediate education needs

HIGH CONFIDENCE: 

Looking at the education cluster's response in Pakistan (2005), Haiti (2010) and Nepal (2015), it appears that the humanitarian community is well aware of the immediate risks of having children out of school for an extended period after an earthquake (such as child labour, exploitation, etc.). The evaluations reviewed report that international responders often succeeded in providing the necessary material (i.e. tents, furniture and supplies) to ensure that schools reopened as quickly as possible and that students were able to resume their learning (Detters, 2011; Save the Children, 2015: 11; Withers and Dahal, 2015: 15). The IASC reports that 80% of the schools affected in Haiti were reopened within six months (although some were in temporary learning spaces) and that 2,300 teachers and 3,000 education personnel were trained (IASC, 2010: 12). In Nepal, although many schools that were considered unsafe or had been destroyed remained closed, many children were able to resume their formal education one month after the earthquake (Withers and Dahal, 2015: 15). Similarly, during the initial relief phase after the 2005 earthquake in Pakistan, basic education projects succeeded in creating opportunities for children to resume learning (Kirk, 2008: 23).

Nonetheless, funding for longer-term recovery and reconstruction programmes proved more difficult to secure and was often uncertain, which made several temporary arrangements permanent (ibid.: 17). For instance, many children in Pakistan were still learning in tents nearly three years after the earthquake, due to the slow pace of reconstruction (ibid.: 23).

Although other factors may account for the difficulties encountered in the Pakistan example, there were also some longer-term successes. For example, 70% of primary school-age children were attending school five years after the earthquake, whereas only 50% attended before the disaster (Save the Children, 2015: 11). Yet, provision of education in emergency settings is too often under-funded, which impedes efforts to create a window of opportunity for longer-lasting positive change (Sanderson and Ramalingam, 2015: 25).

F. Monitoring, evaluation, accountability and learning



Monitoring & evaluation are particularly important in post-earthquake contexts, given that the affected populations' needs can evolve rapidly.



After a disaster such as an earthquake, humanitarian agencies are under pressure to become operational quickly and to address the most pressing needs among the affected communities. As a result, it is easy for monitoring and evaluation (M&E) and reporting to receive less focus. However, these elements are particularly important in post-earthquake contexts, given that the affected populations' needs can evolve rapidly. M&E and reporting can help ensure that the response remains appropriate and effective in helping communities recover by allowing the project to adapt in real time.

M&E can also help people to overcome persistent cycles of vulnerability to such disasters. For instance, monitoring risk reduction efforts in Iran during the 2003 Bam Earthquake recovery phase ensured that the correct materials and procedures were used for building more earthquake-resilient housing (Sanderson et al., 2012: 26). As a result, developing M&E systems can provide long-term benefits for programming (INTRAC, 2014: 1). Despite monitoring, evaluation, accountability and learning (MEAL) being of prime importance, only a limited number of documents provided lessons learnt on how to conduct MEAL in post-earthquake contexts.

Lesson 15: Recognise the value of MEAL and push through obstacles

HIGH CONFIDENCE:

Humanitarians conducting MEAL in post-earthquake contexts face similar difficulties as in other sudden-onset crises

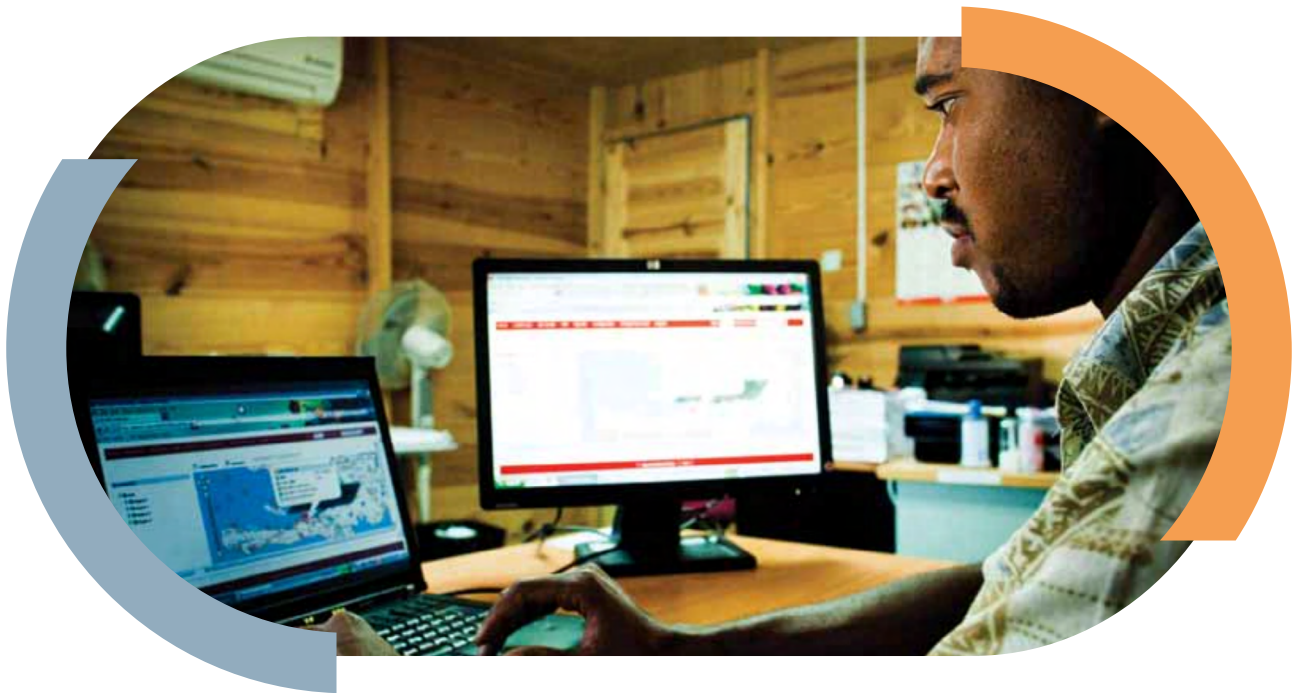
The documents reviewed for this paper reported that implementers faced relatively common difficulties when conducting MEAL in post-earthquake contexts.

- A lack of willingness to engage with local populations (especially vulnerable populations) in the programme (as discussed in previous sections).
- Unclear or not explicitly stated programme goals, outcomes and output indicators. This prevents programmes being able to track whether outputs have been delivered vis-à-vis affected households (World Bank, 2014; Zissman et al., 2014; World Bank, 2016: 107).
- Insufficient funds and capacity within evaluation units. For instance, the IFRC's Planning, Monitoring, Evaluation and Reporting unit in Haiti lacked the capacity to develop adequate indicators in the Plan of Action or to conduct sufficient field-based monitoring of the programme. The small unit in Port-au-Prince was so overwhelmed with reporting requirements that they did not have enough time to dedicate to programme monitoring (Rees-Gildea and Moles, 2012). Another example comes from the Christchurch earthquake in 2011, where the New Zealand Red Cross found that the organisation lacked the necessary understanding and support for M&E. Due to the lack of sufficient in-house M&E expertise, initial efforts to gather data on community needs and feedback from affected people were not sufficient (Moody et al., 2018).

Using flexible and creative ways to collect data can help good MEAL programming

Although humanitarians conducting MEAL in post-earthquake contexts face similar challenges as those responding to other types of disaster, some organisations found creative ways to handle data collection in post-earthquake contexts. For instance, IFRC used an interesting approach to obtain feedback from affected communities, partnering with a call centre, Noula, to handle complaints and feedback. Staff at the call centre were given a list of likely questions that affected households might ask and were tasked with logging calls so that further follow-up could be provided as needed. The service proved popular among the affected population, with a satisfaction rate of 85%, and was thus extended to other IDP camps (Rees-Gildea and Moles, 2012: 20).

Humanitarian practitioners needing to conduct monitoring in areas where access is not possible following an earthquake could look at lessons from others that have conducted MEAL remotely in other contexts (including conflict or insecurity). Nonetheless, none of the documents reviewed for this paper included relevant lessons on this topic.



After the 2010 earthquake in Haiti, the IFRC used an popular approach to obtain feedback from affected communities, partnering with a Haitian call centre, Noula, to handle complaints and feedback. **Credit:** International Federation of Red Cross and Red Crescent Societies

G. Coordination

In the humanitarian sector, coordination focuses on ‘bring[ing] together humanitarian actors to ensure a coherent and principled response to emergencies’ (Humanitarian Response, n.d.) As affected communities’ needs are almost always greater than the available resources, it is imperative that humanitarian actors maximise their assistance. One way is to prevent duplication with other organisations, which will ensure that more people are covered. Coordination in post-earthquake contexts can be more challenging than in other disaster situations as communications infrastructure may have been damaged. Considering this, the humanitarian community should coordinate efforts to avoid duplication in areas where various organisations are operating at the same time, ensuring that no areas are left without assistance.

Lesson 16: Put time and effort into coordination to avoid negative impacts on the response

VERY HIGH CONFIDENCE: 

There are several reasons why it is particularly difficult to establish coordination mechanisms in post-earthquake contexts. First, as mentioned in [Lesson 5: Conduct thorough assessments which recognise and identify the distinct ways earthquakes affect different populations](#) and [Lesson 10: Mobilise sufficient and appropriate surge capacities](#), the context complicates logistics as it is likely that humanitarian organisations and governments themselves will have been affected by the earthquake (IASC, 2010: 17). Also, in the immediate aftermath there may be hundreds of humanitarian organisations pouring into the country, many of them not well-informed of their role (ACAPS, 2015: 1). In such a difficult context, it is not surprising that many of the documents reviewed for this paper reported challenges in humanitarian actors’ ability to coordinate among themselves (Dolan and Ververs, n.d.; Guha-Sapir et al., 2011; Bisri and Beniya, 2016).¹⁴ These documents stressed that the lack of coordination and information-sharing negatively impacted programming across various phases of the project cycle, as follows:

“
Ensure that coordination also happens with non-humanitarian actors, and particularly the military.
”

- **Needs assessment:** In Nepal, the lack of coordination meant that each organisation and institution carried out its own needs assessment, rather than exchanging information. As such, there was no cohesive humanitarian assessment (Wendelbo et al., 2016).
- **Project design/strategic planning:** In Nepal, as organisations did not work together during the initial days after the disaster, the result was ‘different aid packages being provided and overlaps and gaps in the delivery of assistance’ (ACAPS, 2015: 2). Nabi (2014) observed similar lack of coordination after the 2005 Kashmir Earthquake in India.¹⁵
- **Evaluation:** Since evaluation reports were not shared, organisations could not learn from other interventions’ successes and failures in order to improve their own programming (Rees-Gildea and Moles, 2012: 24).

Despite these difficulties, the documents also highlighted some examples of successful coordination. For instance, OCHA was able to rapidly establish a humanitarian coordination mechanism in Haiti that included the hundreds of organisations that were present. This was feasible due to the deployment of the UN Disaster Assessment and Coordination (UNDAC) team and senior staff within the first 24 hours after the earthquake (Bhattacharjee and Lossio, 2011: 10). On the other hand, the large concentration of humanitarian organisations in Port-au-Prince would have benefited from more localised coordination structures closer to programming sites, which would have helped address problems of access to logistical hubs and overcrowded meetings (ibid.).

Lessons for improving coordination include the following:

- Agree on designated roles during the initial days after an earthquake, as these days are critical. Lack of appropriate personnel may prevent this though (see [Lesson 10: Mobilise sufficient and appropriate surge capacities](#)). The Haiti Earthquake illustrated this, as the lack of qualified senior humanitarian leadership negatively impacted coordination and effective humanitarian information management and exchange (HIME) at both the operational and strategic levels (Altay and Labonte, 2014).
- Establish processes and systems to ensure appropriate coordination between the ‘big players’ and grassroots organisations. In Haiti’s food security sector, coordination between these types of actors was characterised as ‘at best sporadic’ and based more on goodwill than on a systematic process. This limited the ability to coordinate activities at the local level where they were actually implemented (Klenk, 2017: 9).
- Clarify potential interactions between cash actors and UN clusters early on. This can include establishing a multi-sector coordination mechanism for cash-based assistance activities (Kauffmann, 2012: 30-31).
- Ensure that governments are integrated in coordination plans, to promote governmental ownership of the response. Numerous documents reviewed for this paper highlighted this as an important lesson. One example from Peru suggested that when setting up the cluster approach, the UN should consult the national government on how to align the cluster system with specific agencies such as SINADECI (National System of Civil Defence) and to clearly identify the individual agency’s roles and responsibilities (Elhawary and Castillo, 2008: 21).
- Ensure that coordination also happens with non-humanitarian actors, and particularly the military. Lu and Xu (2015) and Shui (2009) noted that coordination with the military after the 2008 earthquake in Wenchuan, China, was more difficult than coordination with more traditional partners (e.g. local NGOs, CSOs, etc.), whereas the military sector ensures a vital role in the provision of security to populations vulnerable to smuggling in post-earthquake contexts (IASC, 2010).
- Change the indicators of success when it comes to good coordination. Remember, coordination is a mechanism through which to improve programming, not an end goal in itself. The appropriate level of coordination depends on the context, with an important caveat that all large-scale disasters entail some level of chaos. This is not always a bad thing; in Haiti, for example, a high-level UN official posited that the lack of coordination in the first months created space for small or marginalised actors to meaningfully contribute. The humanitarian community often considers that ‘more coordination is better’, whereas it should appraise the impact of different types of coordination (Knox Clarke and Campbell, 2015). This entails highlighting the proof that using funds for coordination instead of programming results in saving more lives (de Ville de Goyet et al., 2011: 139).

Endnotes

1. Tsunamis are therefore outside the scope of this paper, as they require a significantly different response than earthquakes occurring on dry land.
2. Although this paper was primarily written to help practitioners with future programming in post-earthquake contexts, it contains several lessons useful to donors, international organisations and researchers.
3. The decision to choose the timeframe 2008-2018 is based on the assumption that ALNAP's 2008 Lessons Paper already captured the lessons learnt of interventions documents prior to this date.
4. The private sector is increasingly interested in working with the humanitarian sector for various reasons, including: improving the wellbeing of the community, improving the wellbeing of the company by enhancing brand reputation, and ensuring that it is viewed as a moral actor. For more information on this, see Zyck and Kent (2014: 10).
5. For instance, Oxfam (2016: 6) states that in Nepal, more than 60% of menstruating women reported difficulties in accessing feminine hygiene products, which illustrates the inadequacy of the response. Similarly, an evaluation reported that in Nepal, the cash grants did not account for specific needs of women-headed households, such as hiring porters to help transport building materials or labourers to undertake reconstruction efforts (Barber, 2016: 11). Amnesty International (2011) and Standing et al. (2016) also reported that the humanitarian community did not address the needs of displaced women and girls after the earthquakes in Nepal and Haiti. Cohen and Figaro (2014) provided examples of how women's health and sanitation needs were not well accounted for in the response to the 2010 Haiti Earthquake (see section III.5.1. for more information on this).
6. Conducting assessments in remote areas is also potentially challenging. Nonetheless, the authors did not include anything on the topic in this paper, as the documents reviewed did not mention lessons specific to conducting assessments in remote areas.
7. For instance, see Cohen and Figaro (2014).
8. For more information about rubble clearance, see Hooper (2018).
9. If a husband has migrated but the land ownership certificate is in his name, the wife needs to prove the marriage in order to be able to access emergency support. If the marriage certificate has been lost, a community verification system can be used. However, there are associated risks of abuse, and this system relies on the skills of local representatives. See Oxfam's report, "I am alone": Single women and the Nepal Earthquake.
10. Know Your Customer (KYC) regulations refer to the 'ID check that financial institutions perform to comply with national financial regulations. (They) are designed to combat money laundering, terrorist financing and other related threats to the financial system'. For more information, see ELAN (2016).
11. Lessons touching on other sectors can be found in [Section C. Strategic planning](#). No earthquake-specific lessons were found on food security, livelihoods and economic recovery. Nonetheless, these topics are touched upon in [Lesson 8: Locate spaces to store debris and, if appropriate, use short-term conditional assistance to clear it](#) (on CfW/FfW and cash-based assistance). No relevant lessons on nutrition were found in the documents reviewed for this paper.
12. For more information about 'building back better', see United Nations Office for Disaster Risk Reduction (UNISDR) (2017).
13. For more information on this topic, see IFRC (2011).
14. Coordination with other actors (private and public) was dealt with in [Section A. Across the project cycle](#).
15. Though this earthquake was previously referred to as the 2005 Kashmir Earthquake in Pakistan, Nabi (2014) studied the impact of the earthquake in Indian-administered parts of Kashmir, hence why it is referred to here as an earthquake that occurred in India.

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