

III. The impact of crisis response: the Nepal earthquake

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On 25 April 2015 an earthquake measuring 7.8 on the Richter scale struck in Nepal, with its epicentre in the Lamjung district, causing destruction in 14 of the 75 districts in the country. Two weeks later, on 12 May, a second earthquake hit the country, this time 7.2 on the Richter scale, exacerbating the humanitarian situation. According to official statistics, nearly 9000 people were killed, more than 21 000 injured and 188 900 temporarily displaced as a result of the earthquakes. In total, 605 254 houses were destroyed and 288 255 houses damaged, leaving many thousands homeless.

According to the United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA), more than 450 aid organizations are providing humanitarian assistance in the affected districts.¹ The UNOCHA Country Team estimated that \$422 million was needed to meet protection and humanitarian needs after the disaster.² As of January 2016, two-thirds of the appeal target had been contributed, but 69 per cent of the funding needed for food security and 52 per cent for shelter had not been met.³ Underfinancing of humanitarian response has been a global issue for many years, and not just in this case.

The humanitarian response in Nepal

A number of humanitarian actors responded immediately, despite the massive destruction that made the quake-hit areas inaccessible. Several states and international aid agencies launched rescue and relief operations, provided helicopters or teams of people, and/or donated other technical and material assistance. After the disaster, various humanitarian actors reported on their achievements and outlined the remaining needs. Some were heavily criticized for their failings.

One of the fastest responses was Operation Maitri, launched by the Indian Government within 15 minutes of the first earthquake. The operation deployed personnel from the National Disaster Relief Force and provided transport aircraft, rescue teams and relief materials, as well as helicopters to air-drop aid kits and Indian experts to operate on the ground.⁴ Clearly,

¹ Humanitarian Response, Nepal earthquake: Operational presence map (as of 18 September 2015), (UNOCHA, 2015).

² UNOCHA, Nepal Earthquake Humanitarian Response: April to September 2015 (UNOCHA, 2015).

³ UNOCHA, Nepal, [n.d.], <<http://www.unocha.org/nepal>>.

⁴ Laskar, R. H., 'Nepal quake: India launches "Operation Maitri", airlifts many', *Hindustan Times* 26 Apr. 2015.

this rapid response demonstrated India's capacity to react promptly to this particular emergency, and coordinate resources and operations in the region. Operation Sankat Mochan (Operation Crisis Relief), led by the Nepalese Army using 90 per cent of its entire strength, set up health camps and deployed army medical teams to provide health services and transportation to people in need. The Nepalese Army reported distributing about 9000 kilograms of relief material, such as water and food supplies, to the population in 11 districts.⁵

Meanwhile, non-governmental organizations (NGOs) and charities already present in the country directed their efforts into affected areas within a few hours of the earthquake. Two months after the first shock, there were 387 humanitarian agencies undertaking more than 5100 activities in the 14 most damaged districts of Nepal. However, despite this effort, 2.8 million people were still in need of assistance.⁶ Agencies such as the World Health Organization (WHO) worked with local authorities to ensure that medical resources were directed to meet the specific requirements of different regions. The aid organizations that responded to the earthquake carried out search and rescue tasks, provided basic disaster supply kits, shelters and sanitation interventions, air-lifted victims and initiated other life-saving missions.

Despite the seemingly large scale of the humanitarian operations, the particularly challenging conditions in the emergency areas limited their effectiveness. The earthquakes mostly hit mountainous areas, destroying some of the poorest and most inaccessible villages in the country. In addition, the monsoon rains from June to September and fuel shortages further constrained aid delivery.

Evaluating humanitarian assistance: an overview of methods and challenges

Most evaluations in the humanitarian sector are designed to track the progress of the intervention in real time in order to assess whether the implementation outputs were achieved. Qualitative data is often used to measure the perceptions of the population, but cannot represent every marginalized or affected group, especially when there has been large-scale migration from the affected areas, or when the affected areas are remote and difficult to access.

The humanitarian responses to the 2004 Indian Ocean tsunami and the 2010 Haiti earthquake, for example, were criticized for the poor coordination of relief efforts, non-transparent use of aid and lack of rigorous impact

⁵ 'Deadly earthquake death toll reaches 4400', *Kathmandu Post*, 28 Apr. 2015.

⁶ UNOCHA, 'Nepal: earthquake humanitarian snapshot', 14 May 2015.

evaluation methodologies.⁷ Ten years after the Indian Ocean tsunami, Save the Children reported that some of the positive outcomes of its humanitarian efforts had not been sustainable in the long term.⁸

Rigorous impact evaluations have been used increasingly in recent decades to assess development programmes in poor countries. A number of prerequisites have been identified for these evaluations to be of value: (a) a well-defined theory of change, which is a description of how a particular intervention, policy or project is supposed to bring about the desired results; (b) formative research to understand the context and background of the initiative; (c) counterfactuals or control groups, which help to measure what would have happened in the absence of the intervention; (d) qualitative and quantitative baseline and end line data; (e) a well-defined set of beneficiaries; (f) outcome variables—methods that use the data to quantify changes in outcomes that may have occurred due to the intervention; and (g) the ability to use the evidence in other situations and contexts.⁹

The first weeks of the humanitarian response in Nepal were criticized for the ineffective use of resources and poor coordination by the Nepalese Government.¹⁰ But in the first six months following the earthquake, there have been relatively few rigorous evaluations of the impact of the humanitarian response.¹¹ Humanitarian agencies such as Oxfam, Save the Children, the Disasters Emergency Committee and the Humanitarian Coalition, as well as local and international consultants, have evaluated parts of the response, such as the provision of cash transfers, shelter and housing, health, education and other sectors.¹² Although these evaluations provide insights on the effectiveness of the interventions, in many cases the methodology is weak. For example, it is often unclear as to whether the evaluation was based on a representative sample, while the absence of a control group makes it impossible to identify what would have happened if there were no intervention. Finally, the absence of a quantitative component in the evaluations to date,

⁷ Ramachandran, V. and Walz, J., 'Haiti's earthquake generated a \$9bn response: where did the money go?', *The Guardian*, 14 Jan. 2013; Haver, K., *Haiti Earthquake Response: Mapping and Analysis of Gaps and Duplications in Evaluations* (ALNAP, UN Evaluation Group, OECD DAC, 2011); and Bajoria, J., 'Improving UN responses to humanitarian crises', *UN Chronicle*, vol. 68, no. 4 (Dec. 2011).

⁸ Featherstone, A., *Tsunami Ten Years On: Stories of Change 2004–2014, Community Perceptions of The Indian Ocean Tsunami Response and Recovery* (Save the Children: London, 2015).

⁹ Gertler, P. J. et al., *Impact Evaluation in Practice* (World Bank Publications, Washington, DC, 2011); and White, H., 'Theory-based impact evaluation: principles and practice', 3ie Working Paper 3 (May 2009).

¹⁰ 'Frustration grows in Nepal over earthquake response: Government acknowledges "some weaknesses in managing the relief operation" as many people leave capital for countryside', Al Jazeera, 30 Apr. 2015; and 'Nepal earthquake: growing anger over government response', BBC News, 29 Apr. 2015.

¹¹ This search was based on the International Initiative for Impact Evaluation's (3ie) repository, as well as on sources such as ReliefWeb, ALNAP, Oxfam and other leading humanitarian agencies.

¹² Sanderson, D. et al., *Nepal Earthquake Appeal: Response Review* (Disasters Emergency Committee and Humanitarian Coalition, Sep. 2015).

means that it has not been possible to transform the data into useable statistics that might help to identify patterns and add to understanding of how and why a particular intervention had certain impacts.

Conducting impact evaluations in an emergency setting is challenging but possible. Certain evaluation methods do not require baseline data and can be implemented after the intervention has been initiated.¹³ A control group can be identified as one of the treatment groups. For instance, multiple interventions could be randomly allocated to certain affected areas or households, or an intervention could be delivered to a certain group at a later stage, which is often the case when there are budget constraints or there is uncertainty about the outcome of an intervention.¹⁴

Increased availability of better quality national census data in developing countries, and the development of mobile, geographical information systems and big data technologies can also significantly assist humanitarian response evaluations—for example, by tracking the migration of affected populations or examining the pre- and post-emergency situation.

Furthermore, different methodologies can be used during the different phases of an emergency: relief, up to three months after the emergency; recovery, three to six months after the emergency; and resilience, from six months up to three years after the emergency. For example, randomized control trials, which are widely used in development research, should not be used during the relief phase when any delays in response are critical but might be more appropriate during the resilience phase.

Examples of evaluations of humanitarian response

The limited number of examples of rigorous impact evaluations that have been conducted in an emergency setting have proved important in informing policy. In one case, for example, it was possible to identify limitations in a cash transfer programme in a Syrian refugee camp in Lebanon.¹⁵ While the programme resulted in increased school attendance and a reduction in child

¹³ Such methods include regression discontinuity design and propensity score matching. In both cases, there are groups that did not receive an intervention due to certain criteria, for instance, poverty threshold, or operational or budget constraints. S. Khandker, G. Koolwal and H. Samad, *Handbook on Impact Evaluation: Quantitative Methods and Practices*, World Bank, Oct. 2009.

¹⁴ Some researchers make use of natural experiments, when being in a control or intervention group is determined by nature or by external factors, e.g. a 2012 World Food Programme study evaluated the effectiveness of food assistance for refugees in refugee camps in Bangladesh. The impact evaluation used a natural experiment to evaluate the effects of assistance on registered and unregistered refugees, and on the host communities. The unregistered refugees served as the counterfactual for the evaluation. Nielsen, N. S. et al., *The Contribution of Food Assistance to Durable Solutions in Protracted Refugee Situations: its Impact and Role in Bangladesh, a Mixed Method Impact Evaluation* (World Food Programme: Rome, 2012).

¹⁵ Lehman, C. and Masterson, D., 'Emergency economies: the impact of cash assistance in Lebanon', *Field Exchange*, Aug. 2014.

labour, it was insufficient to cover spending on heating supplies, which was the main objective of the programme.

Another evaluation demonstrated how different kinds of assistance delivered in the refugee areas of northern Ecuador—cash, vouchers and food—had different positive impacts depending on the goals of the policymakers or programme implementers. The evaluation concluded that: (a) cash is a cheap means of a transfer, but it requires a well-functioning market and price controls; (b) vouchers are most cost-effective and lead to improvements in dietary diversity, and are therefore likely to be most suitable if the aim is to change particular consumption patterns of the population; and (c) food transfers are costly, but are suitable when market inadequacies lead to food shortages.¹⁶

A third study showed how in Chad, ready-to-use supplemental foods—which are usually delivered to households together with general food supplies during the relief phase—reached the youngest children in the household through fair intra-household allocation and had a positive impact on their nutritional health.¹⁷

It is important to emphasize, however, that methodological choices in an evaluation largely depend on the characteristics of the population, given the circumstances and other constraints associated with emergency situations. Even allowing for the extremely challenging conditions, conducting evaluation studies of humanitarian aid is important in describing the magnitude of the impact, improving evidence and identifying the best ways of providing assistance.

Conclusions

This section provided a short analysis of the humanitarian response in Nepal following the 2015 earthquake and an overview of the methodological challenges linked to its evaluation. The limited evidence in existing evaluations of humanitarian assistance in Nepal raises potential risks of humanitarian actors adopting inefficient and ineffective ways of aid spending and delivery, and thereby undermining their life-saving missions. A set of methodological techniques were identified that can be applied in an emergency situation to evaluate various humanitarian programmes.

¹⁶ Hidrobo, M. et al., 'Cash, food or vouchers? Evidence from a randomized experiment in northern Ecuador', *Journal of Development Economics*, vol. 107 (Mar. 2014), pp. 144–56.

¹⁷ Huybregts, L. et al., 'The effect of adding ready-to-use supplementary food to a general food distribution on child nutritional status and morbidity: a cluster-randomized controlled trial', *PLoS Medicine* 9(9): e1001313 (2012). For a more complete literature review see Puri, J., Aladysheva, A., Iversen, V., Ghorpade, Y. and Brück, T., 'What methods may be used in impact evaluations of humanitarian assistance?', IZA Discussion Papers, no. 8755, Institute for the Study of Labor, Jan. 2015.

Just a few decades ago, it was a novel approach to seek to evaluate development interventions. The research community and policymakers have become more open to new practices and more informed about what works and what does not work in development assistance. Although emergencies constitute extremely challenging environments, there is scope to improve practice in this sector as a result of learning based on impact evaluations. The growing number of disaster-related casualties makes this an ethical responsibility rather than a practical question.