Quantifying displacement in urban disaster contexts

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Disaster risk reduction and humanitarian programming activities to assist displaced populations are more effective when informed by timely, accurate data. There is, however, a significant data gap in the context of urban displacement.

Even the most stringent data collection exercises, such as national censuses, are subject to error. In humanitarian data collection exercises certain locations, types of location or population categories tend to be prioritised for assessment, reflecting government and stakeholder data needs and their ability to provide assistance, their financial and logistical constraints, and operational[1] definitions of locations and populations. These factors can impact what data are collected in urban disaster contexts and the potential implications for affected populations.

The main aspects involved in collecting data on the numbers, demographics and needs of displaced populations include geofencing (deciding where to conduct an assessment); definitions (of locations and population categories); tools (such as questionnaires); people (enumerators, key informants, operational partners); and logistics. Data collection is often done in partnership with governments and focuses on addressing the information needs of stakeholders responding to the crises.

Interviews with data collection practitioners in four disaster contexts across three countries provide insights into the differences in outcomes introduced by how displacement data are collected in urban areas.[2] The interviews were conducted with International Organization for Migration (IOM) Displacement Tracking Matrix (DTM) staff who worked on data collection for the 2020 hurricanes Eta and Iota in Honduras, the 2018 earthquake in West Nusa Tenggara and the 2018 earthquake and tsunami in Central Sulawesi, Indonesia, and the 2019 earthquake in Mindanao, the Philippines.[3]

Interviews with DTM staff from the three case-study countries revealed that a) operational decisions related to geofencing and b) definitions of displacement sites had the most substantial impact on the findings of data collection. In urban disaster contexts, interviewees highlighted five main types of displacement location: 1) large formal sites/evacuation centres; 2) large informal sites; 3) smaller informal sites on public land or a host family's property; 4) staying inside the home of a host family; and 5) leaving the affected area entirely. Operational constraints and decisions influence which of these types of displacement locations are targeted most for further humanitarian assessment. The urban context itself influences which of these types of locations hold the most displaced persons. For example, interview responses from Indonesia and the Philippines suggested that where there is a limited number of open areas available for establishing larger formal and informal sites for displaced people, this results in the creation of many smaller sites. In this context, an operational decision to prioritise locations for assessment based on size or location type may result in substantial data gaps.

Impact of operational decisions

In Honduras and Indonesia, baseline data on displacement locations were only available for the larger sites. In Honduras, attempts to overcome the limited availability of baseline data included combining it with information on the severity of destruction in each municipality and the feasibility of visiting it to help determine where to target data collection activities. This resulted in a focus on larger sites only. In Indonesia, it was decided that a road-by-road sweep of the entire affected area would be the most effective option for identifying displacement locations. In one area, West Nusa Tenggara, many people had set up tents in their

neighbours', friends' or family's back yards. The data collection team decided to define a location as a site if at least four families were present, and over 3000 such sites were identified. However, this information was too granular for most responders, who filtered out the smaller sites due to the logistical challenges of providing assistance to such a high volume of small sites. As a result, the type of locations that received assistance in both Honduras and Indonesia was very similar, despite differences in data collection approaches. In Indonesia, the limited use made of the granular data in West Nusa Tenggara led to the definition of a site being increased to ten families for the Central Sulawesi response. The situation in the Philippines was very different; here, government partners had information on locations including both large sites and host families and were able to provide assistance to both types of location.

Resource limitations and priorities for delivering assistance to populations in the affected areas meant data on populations who had left the affected area were not collected. Urban migrant populations often live in informal settlements and have insecure employment. When an already mobile population faces a slow- or rapid-onset hazard event, returning to their area of origin or family home may represent a more appealing prospect than moving to a large displacement site. Although it is possible to establish estimates for population flows to locations outside a disaster-affected area, as was done by DTM during the volcanic eruption in the Democratic Republic of the Congo in May 2021, many data collection activities fail to include these locations.

Potential implications

Even in the Philippines, where information was available for both large sites and displaced persons staying with host families, interviewees reported that assistance was first provided to large sites, and then to other displaced persons, and that this was a widespread practice across different contexts. The prioritisation of larger sites over smaller and host community sites creates both a data

and response gap that can have substantial detrimental impacts on affected populations.

Even though the needs of displaced persons staying with host families/communities are less understood than those of persons staying in large sites, existing evidence suggests that their presence creates financial and other burdens on host families, indicating that targeted assistance is vital not just for those who are displaced but also for their hosts.[4] Data on the needs of both host families and the displaced persons staying with them are needed in order to better understand the impacts involved.

The benefits of improving data collection

The most tangible benefit of increasing coverage by collecting data on smaller sites in Indonesia related to the transition phase from emergency to recovery. In Central Sulawesi, the displacement data were used to support government decision-makers in determining the need for transitional shelters during the recovery process. In the Philippines, IOM is complementing the assistance provided by the government to displacement sites by supporting activities to improve the detail of collected data. This combination of greater coverage and detail has encouraged proactive engagement between government and humanitarian organisations to develop a post-disaster recovery framework which recognises the need for programming on the transition stage between emergency and recovery.

Beyond these immediate benefits there are several longer-term benefits of improving the coverage and detail of urban displacement data in disaster contexts. One such benefit is the utility of the data for innovative response mechanisms aiming to pre-empt disasters and their impacts. The UN Office for the Coordination of Humanitarian Affairs has facilitated the piloting of anticipatory action response systems which mobilise existing data for target areas in order to develop predictive models that trigger humanitarian action (including anticipatory financing) prior to the onset of a disaster. A key element of this modelling is the availability of accurate and comprehensive historical data. Data

gaps and biases affect the efficacy of these models and systems, impairing efforts to develop solutions which could reduce the impact of disasters and improve stakeholders' ability to assist affected populations.

This is also evident in the increasing interest in the responsible application of other advanced data analysis methods including machine learning and artificial intelligence. A detailed understanding of the data gaps and biases in existing urban displacement data is fundamental for the ethical use of these techniques in ways that can have useful outcomes for displaced persons or the resilience of populations at risk from natural hazard events. If displacement data in urban disaster contexts continue to focus predominantly on certain sites or groups of affected persons, the introduction of advanced data analysis techniques could reinforce or even perpetuate the limitations in current data collection practices.[5] The impacts of these issues in humanitarian contexts are, as ever, borne by the affected populations themselves.

Conclusion

In urban disaster displacement contexts, the operational decisions based on logistical, financial and other constraints influence which displaced populations are counted versus which are not. Operational decisions tend to focus on populations displaced in large sites rather than those in small sites or staying with host families or who leave the affected area entirely. The implications of this include potentially substantial under-estimations of the displaced population, as well as pushing the burden of assisting displaced populations onto host communities, and thereby reducing their own resilience to future natural hazard events. Data collection practitioners, governments and humanitarian and development responders would benefit from further research into how the needs of displaced persons staying in different types of location differ, and a more evidence-based understanding of whether current assumptions underpinning the prioritisation of assessments and assistance are accurate.

Twenty-four years after the adoption of the Guiding Principles on Internal Displacement in 1998, barriers faced in their implementation still prohibit stakeholders' full adherence to the standards. Principle 18, outlining the right to an adequate standard of living and safe access to essential services for all IDPs, cannot truly be enacted unless all displaced persons and their needs are identified in data collection exercises and responders are properly equipped to deliver assistance in all locations. Global commitments to data-driven action, such as the UN Secretary-General's Data Strategy 2020–22 where Priority 2 is climate action, also require actors to overcome operational barriers if commitments are to achieve their full expected impact on the ground. Stakeholders engaged in responding in urban contexts require institutional and financial support in order to prioritise identifying and addressing the needs of displaced populations in less visible and less accessible locations. In contrast to conflict contexts where relationships with authorities and increased security concerns can prohibit effective data collection or response provision regardless of the resources available, in urban disaster contexts the limitations to effective intervention can be overcome by assistance providers themselves, if given adequate support.

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1. In this context, 'operational' means for the purpose of executing humanitarian activities.

2. Anzellini V and Leduc C (2020) 'Urban internal displacement: data and evidence', *Forced Migration Review* issue 63 www.fmreview.org/cities/anzellini-leduc ; JIPS (2019) 'Displacement profiling in urban areas' bit.ly/JIPS-profiling-urban-2019

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4. Davies A (2012) *IDPs in host families and host communities, UNHCR* www.refworld.org/docid/4fe8732c2.html

5. Humanitarian Data Science and Ethics Group www.hum-dseg.org/ai-applied-ethics-toolkit