



## WHAT NEXT FOR NEPAL?

### Evidence of What Matters for Building Resilience After the Gorkha Earthquake November 2015

#### RESEARCH PURPOSE

When a 7.8 magnitude earthquake struck Nepal in April 2015, the effects were devastating: over 9,000 people were killed and 800,000 homes destroyed or badly damaged, displacing approximately 2.8 million people.<sup>1</sup> Yet as in nearly any disaster, not all households were equally impacted. Some people managed to cope better, and begin recovering more quickly – even when they experienced the same magnitude of earthquake damage. Mercy Corps wanted to understand why, and to identify the sources of their resilience.

Mercy Corps' rapid response to the Gorkha earthquake enabled us to collect data from nearly 1,200 households in severely affected areas. Ten weeks after the earthquake, we found these households varied greatly in their levels of food security, shelter, and abilities to regain their livelihoods. Mercy Corps undertook this research to generate evidence into what types of interventions are most likely to support the resilience of disaster-

#### Key Findings and Recommendations

- **Traditional disaster risk reduction (DRR) is often not enough.** Existing approaches to community-based DRR may be insufficient to support disaster resilience in contexts of weak governance. Greater emphasis is needed on strengthening household DRR capacity and government responsiveness in DRR.
- **Who you are, and who you can count on, matter.** Caste, gender, and social relationships can determine household welfare after a crisis. Humanitarian actors must do more to support trusted and diverse community groups to maintain mutual support functions following disasters, while ensuring humanitarian responses do not reinforce structural inequalities.
- **Financial services are critical to resilience, but some help more than others.** Informal savings and formal credit appear to be vital in post-crisis contexts. More investment is required to ensure financial institutions can maintain their operations following disasters, when their services are needed most.
- **Enabling people to get back to work quickly post disaster is essential.** Restoring livelihoods and market functions as part of early response can make major contributions to household coping and recovery. Humanitarian actors should use rapid cash transfer approaches that can meet immediate social protection needs, kick start market functions, and increase economic opportunities.

prone communities. The research set out to understand: **What capacities, if reinforced, hold the greatest potential to enhance coping, promote recovery and strengthen the resilience of communities to future natural disasters in Nepal and similar contexts?**

## RESEARCH DESIGN

The design for this study is grounded in Mercy Corps' approach to measuring household resilience.<sup>2</sup> Mercy Corps defines resilience as the capacity to learn, cope, adapt, and transform in the face of shocks and stresses. *Capacities* can be absorptive, improving preparation for or recovery from shocks and stresses; adaptive, mitigating the very presence and impacts of shocks and stresses; or transformative, unlocking the wider system (including government support) to enhance coping and adaptation. *Resilience capacities* are the resources or strategies, used before or after a crisis, that help households mitigate crisis impacts.

Within the studied area in Sindhupalchok District, the earthquake had a dramatic effect. Nearly 30 percent of respondents reported having no official shelter at all ten weeks after the earthquake. Poverty likelihood rose drastically, from an average of 8.7 percent to 28 percent. While nearly all households were negatively affected by the earthquake, the research set out to identify key factors that appear to have mitigated the worst effects. Our study focused on the role of the following capacities in contributing to disaster resilience:

1. **Disaster preparedness and response**
2. **Social identity and networks**
3. **Access to and use of financial services**
4. **Access to and use of economic options.**

For each of these factors, the study examined to *what extent* these capacities supported households' abilities to cope with and begin recovery from the earthquake impacts, *what capacities pre-earthquake* enabled the most (or least) effective post-earthquake responses, and *which groups* were most (or least) likely to have them.

The study examined the contribution of these capacities to a range of household well-being outcomes after the earthquake, including to what extent households were (1) positively coping after the shock, (2) beginning recovery, and (3) showing promise of long-term development. This range of outcome measures is illustrated in Figure 1.

## Methodology

This research employed a sequential, mixed methods approach.

**Qualitative assessment:** Conducted in May 2015 in Sindhupalchok District to formulate hypothesis, identify outcome measures, and inform our sample selection.

**Quantitative survey:** Administered in June 2015 to a random sample of 1,200 households within 25 Wards of five affected Village Development Committee. These areas were selected based on their level of earthquake severity, distance from a market center, and elevation. This approach allowed the study to capture populations with a range of access to roads, goods, financial services, and other potential resilience capacities. The sample was stratified to allow sufficient representation of castes with lower populations in the area.

We used cross-sectional correlation analysis, taking advantage of pre-existing variation in key variables. A series of multivariate regression models analyzed which characteristics, pre-earthquake capacities, and post-earthquake responses were associated with better coping, recovery, and long-term well-being outcomes.

**Figure 1.** Range of outcome measures examined



## KEY FINDINGS

### Disaster Preparedness and Response

In areas with high disaster risk, such as Nepal, development cannot be achieved without disaster resilience. Disaster risk reduction (DRR) enables this by taking a two-fold approach: (1) taking steps to reduce the incidence of disaster or its effects, and (2) establishing systems that can quickly and efficiently respond to disasters.

Addressing the impacts of a disaster can include providing humanitarian assistance, rebuilding structures, restoring economic activity, and offering psychosocial support. The more quickly this aid can be provided, the better the impact on recovery.<sup>3</sup> In cross-national studies, higher income is a major predictor of effective disaster preparedness. But evidence shows that other factors such as effective governance institutions and social connections also have a significant impact in reducing deaths.<sup>4</sup>

Our research tested the hypothesis that households who were able to access disaster risk reduction and response mechanisms, both before and after the earthquake, would be more likely to productively cope with and recover from its effects than households without these capacities.

**KEY FINDING:** Existing approaches to community-based disaster risk reduction may be insufficient to support disaster resilience, unless they improve household DRR capacity and advocate for stronger governance.

The vast majority of sampled households (83 percent) reported their community did not have a disaster plan or committee. Yet even when such DRR systems were in place, they did not appear to contribute to better coping or recovery outcomes. As community DRR in Nepal is commonly conducted through local government structures, this finding may be explained by the limited governance capacity in Nepal.<sup>5</sup> Households who perceived local government mechanisms were in place may have been overly reliant on a weak system that was unable to meet their needs.

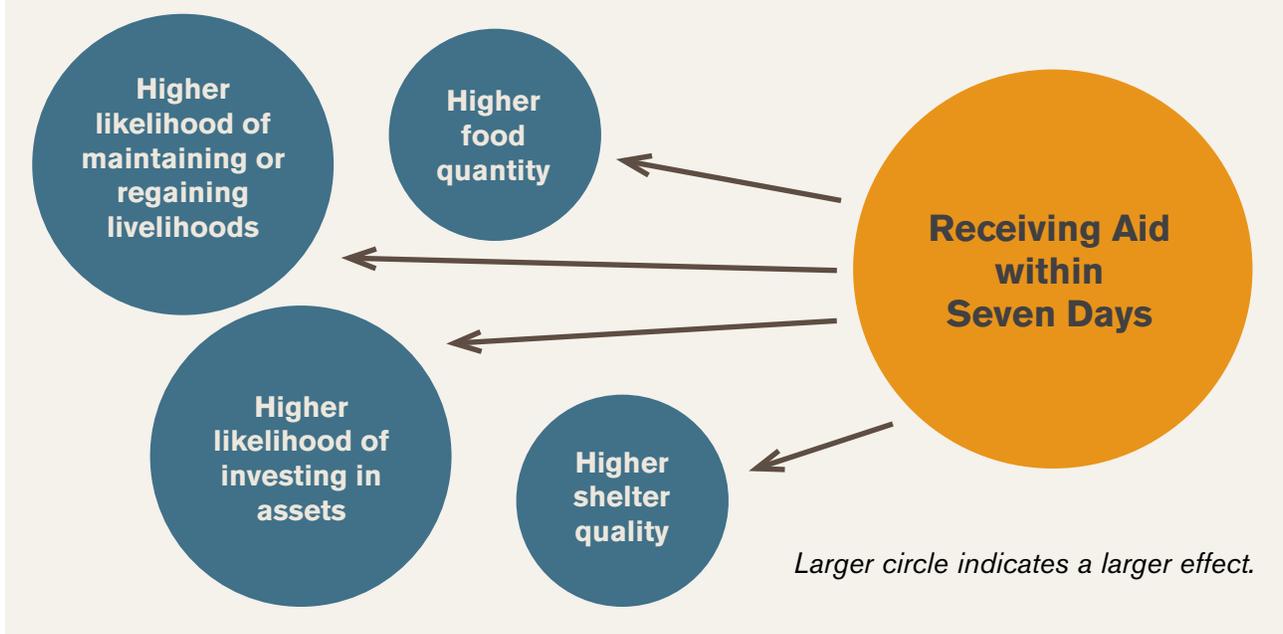
#### Disaster preparedness measures

- **Community disaster preparedness:** existence of DRR plans and committees; resources or training for DRR at the community level
- **Household disaster preparedness:** families' disaster risk and response awareness

#### Disaster response measures

- **Timeliness of aid:** receiving aid within seven days of the earthquake
- **Amount of aid:** number of aid sources received by a household

**Figure 2.** Effects of timeliness of aid on coping and recovery outcomes



In contrast, greater household-level disaster preparedness appeared to be a critical resilience capacity. Families that reported being aware of what to do following the disaster were 50 percent more likely to have maintained or regained their livelihoods, and had higher levels of food security than families without such DRR awareness. These findings suggest that community DRR measures must connect to and directly support household-level preparedness efforts to be effective. Research shows that this link is currently missing in Nepal.

**KEY FINDING: Receiving timely aid is a critical enabler of household coping and recovery after a shock.**

Receiving timely aid was among the strongest predictors of positive coping and quicker recovery for households, as shown in Figure 2. Households that received aid within seven days after the earthquake were twice as likely to have invested in productive assets and maintained or regained their livelihoods relative to households that received aid later or not at all. These early aid recipients also tended to have better shelter conditions and food consumption patterns. The very early response in Nepal consisted mainly of food and critical life-saving items, suggesting that very basic but immediate support can ensure families do not have to lose critical assets and savings to meet their immediate needs. Our findings support other research that has shown that the quicker aid can be provided, the better the impact on recovery.<sup>7</sup>

**RECOMMENDATIONS:**

**Address the limitations of current DRR approaches in contexts of weak governance, placing greater emphasis on household-level DRR and advocacy capacity for improved accountability and response.**

**Actively assist government and other aid providers to reach all disaster-affected households with critical assistance within the first week of a disaster to support rapid recovery and resilience.**

## SOCIAL IDENTITY AND NETWORKS

Evidence shows that social identity and networks make a major difference in households' ability to manage disasters.<sup>8</sup> In Nepal, caste is the primary determinant of income and social standing, and tracks to other development indicators such as education and maternal health.<sup>9</sup> Gender inequality also perpetuates marginalization, as women suffer from early marriage, poor spacing of pregnancies, high rates of domestic violence and discrimination in food consumption.<sup>10</sup> These disparities are apparent even during disasters, and have been shown to determine who receives aid.<sup>11</sup> Following the earthquake in Nepal, lower castes shared stories of negligence, blatant discrimination, and even violence in being denied equitable distribution of relief.<sup>12</sup>

The effects of caste and gender are evident when examining social capital, defined as the level of cohesion and mutual assistance among a group or groups of people. Research shows that social capital can play different roles in disaster recovery. First responders are often neighbors or other community members, emphasizing the importance of *bonding* social ties.<sup>13</sup> Yet if a disaster of a large magnitude affects multiple households negatively, *bridging* social capital can connect with peers outside the community, while *linking* capital can help households connect to government agencies, or even non-governmental organizations, for support.

In Nepal, our study assessed how both social identity (as defined by caste and gender) and social capital affected households' ability to cope with and recover from the earthquake.

**KEY FINDING: Who you are, and who you can count on, matter: caste, gender, and social relationships can determine welfare and well-being after crisis.**

Our results showed that caste, independent of poverty status, determined people's ability to access resources and apply strategies that could support disaster resilience. Members of the lower castes were more likely than higher-caste households to be consuming less and lower quality food post-earthquake, even among households with similar pre-shock wealth levels. Lower castes also experienced a relative delay in the receipt of aid, controlling for remoteness from markets.

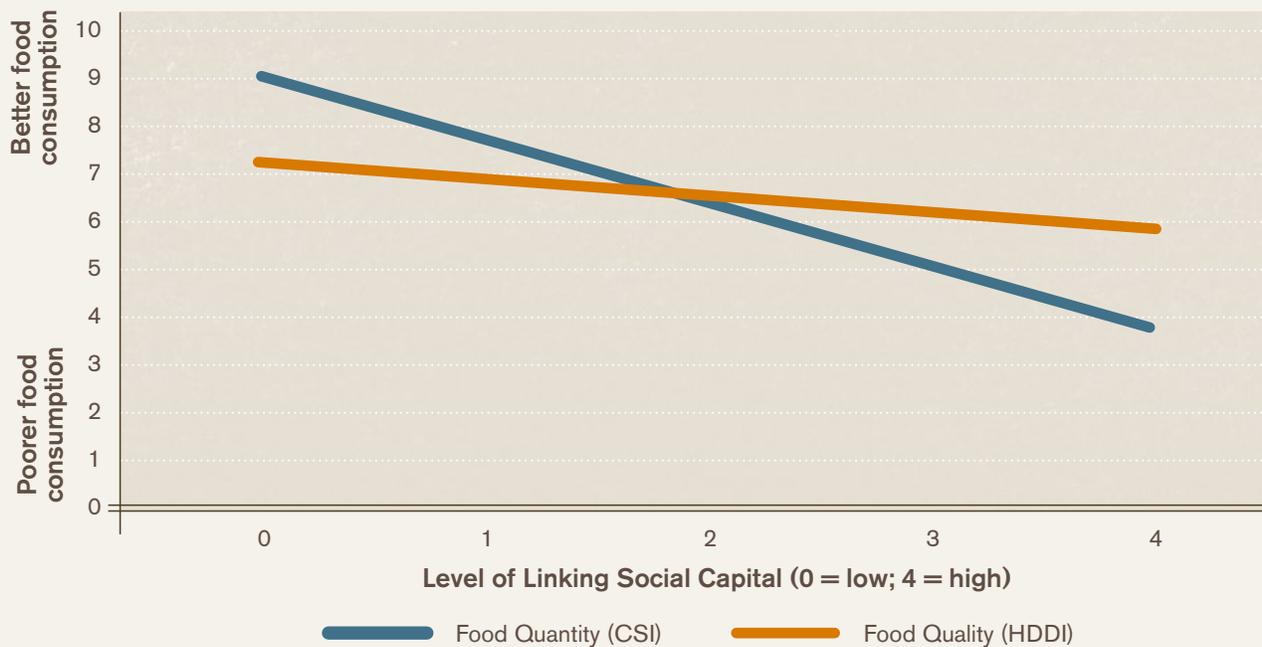
At the same time, relationships within castes supported recovery. Households reporting greater levels of *bonding* social capital relationships, or an ability to rely on members of their own caste for help, were more likely to be able to meet their food consumption needs. Involvement in community collective action – such as in traditional self-help work groups (called *perma*) – prior to the earthquake also appeared to contribute to better recovery of assets and shelter. Given that *perma* relies on mutual assistance through labor exchange, this suggests households who had invested in such social capital stocks could draw on them after the disaster.

Greater *linking* social capital, or perceptions of being able to rely on and influence local government officials, was linked to poorer coping and recovery outcomes, as illustrated in Figure 3. This finding points again to the

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- Social identity measures**
  - Caste affiliation
  - Sex of head of household
  - Women's involvement in household decisions
- Social capital measures**
  - **Bonding:** social ties within a caste
  - **Bridging:** social ties across castes
  - **Linking:** perceptions of being able to influence local officials and institutions for help
  - **Collective action:** engaging in joint community support activities

**Figure 3.** Effects of linking social capital on food consumption



risk of overreliance on government networks in contexts of weak governance capacity. As has been seen in other disasters in the region, people that perceived local government mechanisms to be supportive may have relied on them instead of other supports, leaving their families worse off when the government failed to meet their needs.<sup>14</sup>

**RECOMMENDATION:**

**Ensure humanitarian response efforts do not reinforce structural inequalities. This can be done by supporting trusted and diverse community groups to maintain mutual support functions in a crisis.**

## FINANCIAL SERVICES

The role of households' access to financial services, such as credit and saving mechanisms, in resilience is increasingly well-established.<sup>15</sup> Savings and credit can foster diversification of income, investments in improved shelter, and resilient livelihood strategies. Savings, credit, and cash transfers provide shock-affected households with secure sources of liquidity not only for purchasing essentials such as food, but also for restoring or branching out into new income sources, which in turn sustains markets.

**Financial service measures**

- **Use of formal savings:** From a bank, cooperative, or other formal financial institution
- **Use of informal savings:** In a local savings group, with family or friends, or at home
- **Use of formal credit:** From a bank, or government-registered MFI or cooperative
- **Use of informal credit:** From local credit shop, wealthy landlord, community welfare program, employer, family or friends

But whether the financial services are beneficial for disaster resilience depends on their source and how they are used. For example, while credit can be an important coping lifeline, borrowing that comes with predatory interest rates can also make households *more* vulnerable to future shocks, or undermine recovery.<sup>16</sup> And if financial service providers cannot function following a disaster, their clients may not be able to access funds when they need them most.

The research tested the hypothesis that households who were able to access and use financial services were more likely to productively cope with and recover from the earthquake's effects, compared to households without these capacities. We looked specifically at how households were using formal and informal savings and credit, before and after the earthquake.

**KEY FINDING: Financial services are vital, but some help more than others: savings are an important form of support in a post-crisis context, with informal savings being particularly critical for marginalized groups.**

Before the earthquake, over 57 percent of respondents held formal savings, and 25 percent held informal savings. Households who had informal savings prior to the disaster tended to fare better in its aftermath than those who did not, with improved shelter quality and a lower likelihood of poverty. This finding stands out considering that only 23 percent of households with informal savings reported actually using the money after the earthquake. The benefits of savings may have had more to do with the social support that comes from being part of a savings groups, where the vast majority of informal savings were held, rather than drawing directly on the cash. People from lower castes were more likely to hold informal savings, suggesting that informal savings groups may be a critical support for more marginalized groups after a disaster.

**KEY FINDING: Access to appropriate loan products post-crisis are important for recovery, but pre-crisis debt may make people worse off in the aftermath.**

Credit appeared to make a difference to households' resilience, though the effects were mixed based on the source and timing of the loans. Access to formal loan products after the crisis appeared to boost households' recovery. Though only 13 percent of households reported using formal credit, these families were better able to meet their family food needs, and were 80 percent more likely to be able to maintain or regain their livelihood source, compared to households who did not or could not access formal credit after the earthquake.

In contrast, the use of informal loans after the crisis seemed to undermine recovery; it was linked to a higher likelihood of household food insecurity. The results also showed that families with a debt burden – especially from informal sources – prior to the earthquake had to resort to more distressful coping mechanisms post-shock. These households were likely already relying on credit to meet their basic needs, and creditors needed to be repaid in a crisis. This additional pressure may have required new, expensive credit sources that further increased debt and limited coping options.

Taken together, these results point to the important protection role that emergency cash transfers can play for the most vulnerable groups in times of crisis. Cash transfers may prevent depletion of savings, which appeared to be a key resilience capacity. Unconditional emergency cash transfers have also been shown to effectively assist households that are not able to access their savings or appropriate credit following a disaster. Finally, the low rates of savings withdrawal, combined with low use of formal loans after the earthquake suggest it is critical to enhance the capacity of financial institutions to maintain their operations in times of crisis, so that more appropriate financial services can contribute to disaster resilience.

#### **RECOMMENDATIONS:**

**Support financial service providers to offer more appropriate products and maintain services in times of crisis, while enhancing household financial management capacity for disaster resilience.**

**Enhance informal savings for the most vulnerable pre-crisis and extend social protection mechanisms through cash transfers in the aftermath of disasters.**

## ECONOMIC OPTIONS

Livelihood strategies, or the ability to manage income streams to mitigate disaster risk, are critical to resilience. Previous studies have shown that households with livelihood streams that are truly independent of each other and not exposed to the same types of risk – e.g. farming and salaried work – may enable households to maintain at least part of their livelihoods after a disaster, and thereby rebuild or recover more quickly.<sup>17</sup> Livelihoods are also closely linked to the markets in which they operate; restoring market functions and reconnecting households with markets is critical to renewing growth and restoring livelihoods.<sup>18</sup>

### Economic options measures

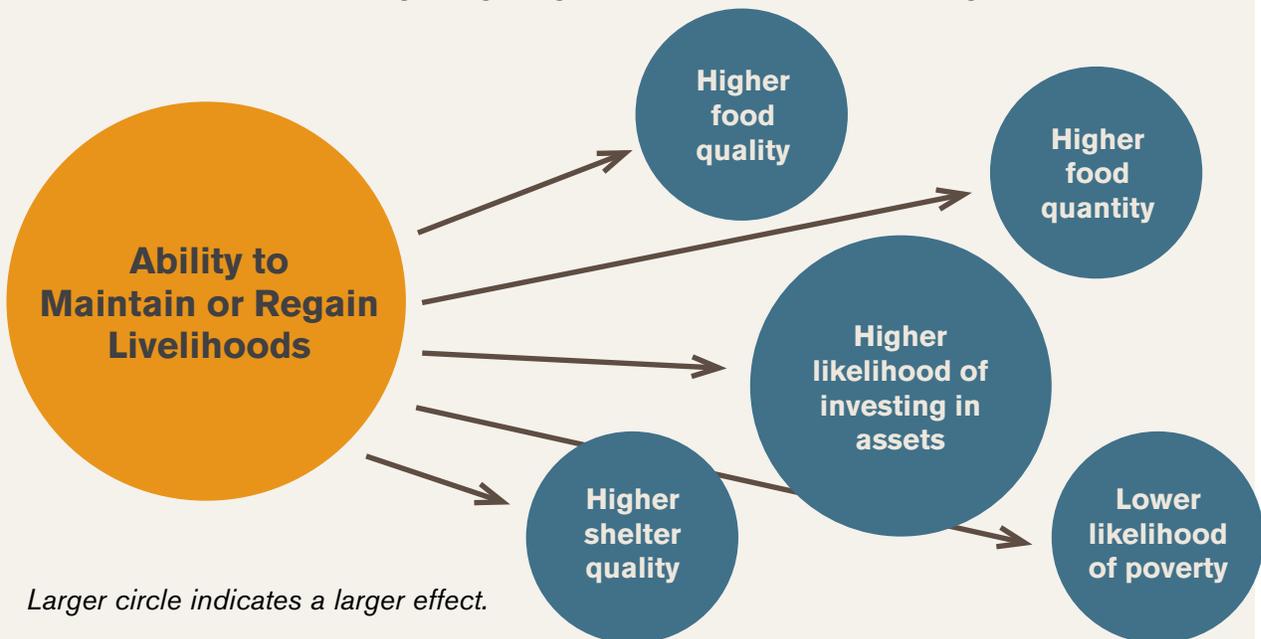
- **Livelihood diversity:** having multiple sources of income
- **Livelihood independence:** having multiple income sources not all exposed to the same types of risks
- **Access to functioning markets:** availability of transport to market centers; and availability of **food and non-food items in markets**
- **Remittances:** having received remittance income before and after the earthquake

This research tested the assumption that households who could access a range of economic options before and after the earthquake were better able to cope with and recover from earthquake impacts.

**KEY FINDING:** Maintaining or regaining livelihoods and restoring market functions as part of early response is critical for improved coping and recovery.

Households' ability to maintain or regain their livelihood and income sources within ten weeks after the earthquake was the single strongest predictor of resilience (see Figure 4). Such households were far more likely to maintain an adequate quantity and quality of food, were twice as likely to invest in productive assets, had better quality shelter, and were at lower risk of poverty. Several factors stood out as contributing

**Figure 4.** Effects of maintaining or regaining a livelihood source on well-being outcomes



to households' ability to hold on to their livelihood sources: being able to draw on formal credit after the earthquake, receiving timely aid, having higher levels of household-level disaster awareness and preparedness, and having a more diverse set of livelihood sources pre-earthquake. Livelihood independence was linked to an 80 percent greater likelihood of households investing in productive assets after the earthquake, but did not appear to contribute to households' ability to maintain or regain their livelihoods.

**KEY FINDING: Proximity to a marketplace on its own may be insufficient to support disaster resilience if not coupled with efforts to restore market functions.**

Ten weeks after the earthquake, market access and goods were still not restored. Nearly half of respondents stated that their closest market was completely unreachable, and that availability of seeds, agricultural inputs and housing material were all low. In fact, households that had better access to markets after the earthquake exhibited the poorest food consumption patterns; this is likely because these households naturally depend on markets in normal times, and thus are less able to cope when the markets stopped functioning.

These results point to the need for emergency assistance to more quickly and effectively support communities to restore livelihoods and markets early following a crisis. Literature on the role of emergency cash transfers in disaster response suggests that cash transfers may be the most effective mechanism to achieve this goal. Previous research and experience suggests that economic recovery can be most effectively stimulated through emergency cash transfers.<sup>19</sup> However, cash must be provided at levels that can support productive investments by households and businesses, and be distributed with awareness of the economic context. Specifically, research has shown that larger, lump sum emergency cash transfers can be more effective in enabling recipients to restore productive assets and livelihoods than multiple, smaller transfers of the same amount.<sup>20</sup> To act on these findings, humanitarian actors must find ways to deliver cash faster, as part of emergency response, and in ways that help restore livelihoods in the immediate aftermath of a shock – rather than waiting for later recovery interventions.

**RECOMMENDATION:**

**Restore markets and support livelihoods as part of early response, including through cash transfer approaches that can kick start market functions and increase economic options.**

## **CONCLUSION**

This study offers a snapshot of household welfare and recovery, and what contributed to it, ten weeks after the Gorkha earthquake. The results shed new light on people's resilience capacities and immediate responses. These have important implications on how the earthquake recovery investments can be designed and targeted.

Nepal's disaster-prone environment makes investing in resilience extremely important. Since the time of survey, the study area experienced floods and landslides associated with the monsoon rains. More recently, the whole country has suffered from an extensive fuel crisis, prompted by reactions to Nepal's new constitution. Mercy Corps plans to conduct follow up research to analyze how exposure to this latest series of shocks has affected households' ability to cope and recover from the earthquake. This will further our collective understanding of the most important leverage points for supporting resilience to multiple, recurrent crises. The results will enable humanitarian and development actors to be more deliberate in responding to future crises in ways that best strengthen household and community resilience over the long term.

## ENDNOTES

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- <sup>2</sup> Frankenberger, T., J. Kurtz, B. Sagara, *Approach to Measuring Resilience. Mercy Corps Resilience Discussion Paper, #02*, 2015.
- <sup>3</sup> Resosudarmo, B.P., Sugiyanto, C., & Kuncoro, A. *Livelihood Recovery After Natural Disasters and the Role of Aid: The Case of the 2006 Yogyakarta Earthquake*, May 2011
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- <sup>12</sup> Amnesty International. *Nepal: End Discrimination in Earthquake Relief Effort*, 1 June 2015. Retrieved from <https://www.amnesty.org/en/latest/news/2015/06/nepal-end-discrimination-in-earthquake-relief-effort/>
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- <sup>14</sup> Islam, R. & Walkerden, G. *How do links between households and NGOs promote disaster resilience and recovery?*, 2015
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- <sup>16</sup> Pitamber, S. *Factors Impeding the Poverty Reduction Capacity of Micro-credit: Some Field Observations from Malawi and Ethiopia*, 2003. Retrieved from <http://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/00157682-FR-ERP-74.PDF>.
- <sup>17</sup> Kurtz, J. *What Really Matters for Resilience? Exploratory Evidence on the Determinants of Resilience to Food Security Shocks in Southern Somalia*. Mercy Corps. 2013.

### For the full research report, see:

Petryniak, O., Kurtz, J., and Frischknecht, S. (2015). *What Next for Nepal? Evidence of What Matters for Building Resilience After the Gorkha Earthquake*. Washington, DC: Mercy Corps. Available at: <https://www.mercycorps.org/research-resources/what-next-for-nepal>

## CONTACT

### JEFFREY SHANNON

Director of Programs  
Mercy Corps Nepal  
[jshannon@np.mercycorps.org](mailto:jshannon@np.mercycorps.org)

### OLGA PETRYNIAK

Director, Regional Resilience Initiatives  
South and East Asia  
[opetryniak@field.mercycorps.org](mailto:opetryniak@field.mercycorps.org)

## ABOUT MERCY CORPS

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45 SW Ankeny Street  
Portland, Oregon 97204  
888.842.0842  
[mercycorps.org](http://mercycorps.org)