

# NEPAL

## Technical Assistance for Recovery and Resilience



**PROJECT DESCRIPTION**

**Country:** Nepal  
**Project location:** Gorkha  
**Disaster:** Earthquakes  
**Disaster date:** April 25, 2015  
**Project timescale:** July 2016 to June 2019  
**Target Population:** 90,000 people  
**Project Budget (USD):** US\$ 11,076,020  
**Donors:** CAFOD- DEC, Caritas Austria, Caritas Spain, Caritas Canada, LDSC and CRS private fund  
**Partners:** Caritas Nepal, Shree Swanra Integrated Community Development Center (SSICDC), System Development Service Center (SDSC)



 **1,605** men and women received mason training

**What did CRS and Partners do?**

The Gorkha Recovery and Resilience Program (GRRP) aimed to rebuild lives and livelihoods of families affected by Nepal’s devastating 2015 earthquake. The program focused on communities in 13 Village Development Committees (VDCs) and one Municipality of Gorkha District by providing technical assistance to support the reconstruction of their homes, restoration of livelihood assets, and improvement of livelihood practices in areas. Construction technical assistance activities included:

- Mason Training (7 days) for 1,605 skilled masons, both men and women, on the government compliance checklist.
- Vocational training (50 days) on masonry for 1,012 laborers, both men and women.
- Construction of 82 demonstration houses spread throughout 13 VDCs.
- Door-to-door technical assistance to families and on-the-job mason training.
- Infrastructure rehabilitation through cash for work to improve pathways to access local markets and restore community water supplies.

- Staff training on Participatory Rapid Appraisal, SAP2000 structural analysis software and community appraisal techniques, and train the Trainer on earthquake resistant construction techniques and government compliance checklist.
- Training of local officials on QSAND tool for assessing sustainability of reconstruction.

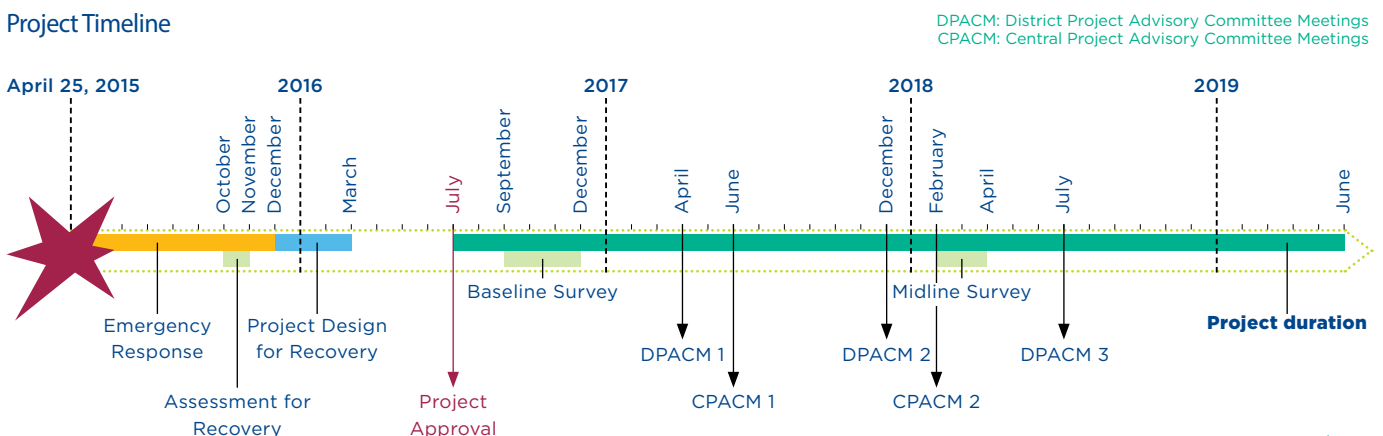
**Background**

On Saturday, 25 April 2015 at 11:56 local time, a 7.6 magnitude earthquake as recorded by Nepal’s National Seismological Centre (NSC), struck VDC Barpak in the district of Gorkha, about 76 km northwest of Kathmandu. Nepal had not faced a disaster of comparable magnitude for over 80 years.

The catastrophic earthquake was followed by more than 300 aftershocks greater than magnitude 4.0. Four aftershocks were greater than magnitude 6.0, including one measuring 6.8 which struck 17 days after the first quake with the epicenter near Mount Everest. There were over 8,790 fatalities and 22,300 injuries and nearly one-third of Nepal’s population, or 8 million people, were affected <sup>1</sup>.

<sup>1</sup> Source: Gov. of Nepal, Post Disaster Needs Assessment

**Project Timeline**



Credit: Livia Mikulec / CRS

## Problem Statement

In the northern zone of Gorkha, 93% of homes were damaged or fully destroyed. Houses had been predominantly made from dry stone masonry with slate roofs that were constructed without the use of earthquake-resilient techniques. The remoteness of the communities had fueled traditions of self-sufficiency. With little awareness of the government's upcoming reconstruction support program, communities rapidly unified after the earthquake to begin salvaging material and rebuilding each others' homes, one by one. However, families that started reconstruction as a self-recovery effort failed to use earthquake-resilient techniques – which posed a significant risk for the families in the event of another earthquake. It also excluded these families from receiving government grants, due to non-compliance with building codes and resilient techniques.

In the Central and Southern zones of Gorkha, poor families had stone and mud homes with slate or corrugated iron roofing. Without reinforced concrete, families suffered significant damage and impact. Wealthier families living closer to the markets had homes of properly reinforced concrete. In the seven project-targeted VDCs in the Central zone of the district, approximately 95% of houses were destroyed or damaged, while in the Southern zone 88% were destroyed. Many affected families in the south and center of Gorkha had yet to begin to repair or rebuild, and continued to occupy temporary or makeshift shelters.

For the most vulnerable families, lack of cash to pay for labor and materials was one of the greatest constraints. Most relied on informal financial services and had delayed debt repayments due to lost livelihoods. Possibilities for new loans were restricted to money lenders charging exorbitant rates. Additionally, a lack of skilled masons familiar with earthquake resilient building techniques—exacerbated by the out-migration of male workers for overseas labor—required a gender-inclusive mason training approach.

## Project Process

### Design

The Gorkha Recovery and Resilience Program (GRRP) intended to enhance local knowledge and skills on earthquake-safe construction techniques, and increase income opportunities for affected families. The intended result is that the program participants use their government-issued reconstruction grant of up to USD 3,000 to complete compliant construction of their homes within the government deadlines while, at the same time, recovering their livelihoods.

CRS promoted design options that used indigenous materials so that replication could be ensured. For the traditional designs, CRS addressed the fact that less attention had been given to earthquake resistant construction elements (including horizontal and vertical reinforcing bands), depth of foundation, correctly constructed stone masonry (including corner- and through-stones). CRS supported communities by providing information, training (skilled and semi-skilled builders), constructed demonstration buildings, and direct technical support to families.

## Monitoring

CRS staff used baseline survey data to adapt interventions to suit communities' needs as far as possible. During the project intervention, CRS continually collected data using the Commcare digital platform to allow real-time analysis of quantitative data, process monitoring lesson learning, along with a midline survey to assess progress against the baseline conditions.

## Communication

CRS used a comprehensive Beneficiary Feedback Mechanism (BFM) to provide an appropriate, accessible communication channel for targeted beneficiaries—especially marginalized groups—to share both sensitive and non-sensitive feedback on program activities. Communities identified their preferred communication channels, including toll-free numbers, community/face-to-face meetings and comment boxes in communities. Through these mechanisms, marginalized groups including women, elderly and children were able to provide feedback and complaints as needed. The toll-free number was the most popular method: not only was it used for feedback and complaints, but also for technical assistance. For example, respondents inquired about the government's tranche payment eligibility criteria.

In addition, CRS used WhatsApp groups for technical communication, where field staff were able to request and discuss technical information and guidance from designated CRS engineers. Such communication helped disseminate the techniques to the wider group, and maintained uniformity of messages all around.

## Participant Selection

Total population in the target area was approximately 90,000, with almost 25% meeting specific vulnerability criteria such as People with Disability (PWD) headed families, Dalit and Janajati (e.g. Maaji Communities from Central Region of Gorkha), Landless families or Families headed by elderly (>65years). For shelter activities, door-to-door technical assistance was given to all families reconstructing, regardless of status, but those families meeting some of the criteria above received additional support through livelihoods and Cash for Work programs.



Female participants of 50 days vocational mason training with their male counterparts in Manbu-2 of Gorkha district organized by CRS. Females are highly encouraged and prioritized in the mason training events so that they can equally contribute in the housing reconstruction post 2015 Nepal earthquake. This 50 days unskilled mason training is tied up with demo-house construction.

Photo credit: CRS



Participants of 50-days unskilled training busy in roof constructions of demo-houses at Aruarbang-4 in Gorkha district. CRS is making more than 90 demo-houses incorporating and highlighting all earthquake safe building elements so that the community can replicate to construct their homes making compliance to government norms and access the housing grant.

Photo credit: CRS

All the shelter related activities were aimed at contributing toward reconstruction and wellbeing of affected communities. To achieve this, Community Reconstruction Committees (CRCs) were supported where they pre-existed, or were formed where there were none. The committees were formed according to the government model with diverse membership representing all castes and vulnerable groups, such as the elderly, women and PWDs. Some key responsibilities of CRCs include:

- Supporting village profiling.
- Carrying out needs prioritization.
- Developing community action plans for different activities.
- Acting as a communication bridge between community and CRS/Partners.
- Ensuring effective participation of the communities in different activities, especially training events.
- Disseminating feedback mechanism information widely.
- Developing selection criteria for different activities, and to encourage women to participate.

## Challenges

Ensuring the quality of materials delivered by local vendors was challenging, and families would often choose cheaper, substandard materials for their reconstruction. CRS and partners carefully monitored activities to maintain quality, and reinforced the importance of selecting quality materials for sustainable construction during household orientations and Door to Door Technical Assistance.

Many families started construction of their homes before the government issued guidelines, so their houses were ineligible for receiving tranche payments. Following advocacy from NGOs through the Housing Recovery and Reconstruction Platform (HRRP), the Government of Nepal later issued guidelines for these families, the correction for which CRS included in its technical assistance in door-to-door visits. These guidelines were prepared through technical working groups with members from NGOs and the government.

New government structures meant that the focus of authority and decision making was mainly with local

leaders, so the effectiveness of established CRCs was in question. CRS and partners conducted a CRC effectiveness study through qualitative data collection from both CRC and non-CRC members. As a result, CRS developed linkages between CRCs and local leaders to ensure improved decision-making mechanisms and sustainability.

## Learnings & Recommendations

- Communities usually trust and value advice from the skilled masons and local builders. In behavior change interventions related to housing construction, local masons should be considered as an important trigger.
- Midterm evaluation results and general field observation indicated that door to door technical assistance was the most effective and efficient of the activities at disseminating and reinforcing the technical messages.
- For a cost-effective and environmentally-friendly option, CRS researched the use of bamboo as a substitute for timber, however local skepticism around use of bamboo in house construction was high. Bamboo is usually considered a temporary construction option only by the local population.

## Family Story

Mangali Kami, a resident of Gorkha municipality ward no.9, lives in a makeshift shelter made from salvaged and damaged materials, 3 years after the catastrophic April 2015 earthquake. She is 70, and lives on communal land. Her seven decades of life have seen incredible hardship. She recalls that she used to have a happy family with a proper house and enough land for farming, but her husband's gambling problem became so severe that they lost all of their land and property. But, her greatest pain comes from her two sons - the eldest, who has been lost for 15 years and is nowhere to be found. Her younger son died by suicide. Mangali now she lives with her daughter Sanju BK. At present, her only source of income is the small stipend she receives from the government of Nepal.

Sanju BK participated in a 50-day training for unskilled masons. Funded by CRS, the training is meant to help people like Sanju BK be able to support their families by engaging in masonry work. Despite her age, partial blindness and the loss of her sons, Mangali is hopeful that they will build and live in a better home soon to make life a little more comfortable.

## Where can I find out more?

[Shear load testing of mortar samples](#) - Oxford Brookes University and CRS

Stone masonry wall with fiber reinforced mud mortar - Global Engineering Program

Assessing Knowledge in Reconstruction - Avans University of Applied Science

Post Disaster Need Assessment - Government of Nepal Baseline Report, GRRP - CRS

Midline Report, GRRP - CRS

HRRP Case Study, Nepal - CRS