



Rubble clearance and demolition in West Sumatera

Learning from experience



Background

On 30th September 2009 an earthquake measuring 7.6 on the Richter scale struck West Sumatera at 17:16 local time, the epicentre being 45 km West-North-West of the port city of Padang. A second quake, measuring 6.2, struck 22 minutes later. This was followed by a third quake, measuring 6.8, early the following morning which struck an inland area, 225 km South-East of Padang. Padang Pariaman District was most severely affected by the earthquakes and the subsequent landslides. The international community estimated that around 1,200 people died and about 1.2 million were affected.

The UNDP country office supported the local government to manage the large scale recovery and reconstruction work. Sida funded the Rubble Clearance and Demolition (RCD) element of UNDP's wider Recovery Initiatives for Sumatra Earthquakes (RISE) project. This involved the following activities:

- Demolition of destroyed or severely damaged public or publicly accessible buildings.
- Recovery, recycling and disposal of waste and debris from damaged buildings and other infrastructure.
- Disposal of hazardous materials encountered during demolition (e.g. asbestos).
- Assistance to rural and semi-urban communities in the safe deconstruction/demolition of damaged houses.

At a Glance

Background: Following the West Sumatera earthquake, UNDP implemented a Rubble, Clearance and Demolition (RCD) project.

Challenge: Delays in obtaining government permission to demolish public buildings.

Project implementation delays meant some RCD activities no longer high priority.

Government lacks funding to complete RCD activities.

Government and community priorities not the same.

What went well: UNDP assessed 200 buildings (100% of those damaged) and demolished 157. Rubble safely cleared.

"Must share" ideas: Better preparedness, strengthening government capacity in disaster-prone areas and planning for recovery and reconstruction.

What challenges did the project encounter?

One of the key challenges that UNDP faced was that it had to obtain permission from the local government to demolish public buildings (though it also responded to public requests to demolish unsafe homes and offices). It took time to get this permission for each building and this delayed the implementation of the project. This has meant that some public buildings, which are in urban areas, had not been demolished by the time that UNDP closed the project even though they are unsafe. Even if government permission is finally granted, they are unlikely to be demolished because the public works department does not have the funds to complete the work (though it does have the required equipment and UNDP has trained it in safe rubble clearance and demolition).



A local school highlighted the risks of delays in demolishing unsafe buildings (which was exacerbated by a delay in procuring the heavy equipment required for demolition). The school constructed temporary classrooms adjacent to original building which was largely destroyed by the earthquake but remained undemolished while the government processed authorisation. This meant that children could easily play in and around the unsafe building though the teachers tried to supervise them during playtime.

Another challenge for UNDP is that it had to be guided by the priorities of the government, which did not always reflect the priorities of the community. One example of this is the former bus shelter on the outskirts of Padang. The government built a new bus terminal in 1998 but it was under-utilised because of its distance from town and was abandoned 3 years before the earthquake. When the earthquake struck, the middle section of the bus terminal was declared unsafe and UNDP demolished this, carefully leaving the end sections. The government then relocated some government offices to temporary buildings behind the old terminal. However, it need not have expended resources on this partial demolition of an unused building because the mayor intends to demolish the whole building to create a commercial centre. There was one side benefits of this activity, though. A couple of tea-shop owners next to the disused bus terminal reported a boost in sales since the earthquake because of demand from the demolition workers and the relocated government officials.



In addition to supporting local authorities, UNDP contracted KOGAMI, a local NGO, to work with local communities in Padang City, Pariaman City, Padang Pariaman and Pesisir Selatan Districts. KOGAMI provided training on safe rubble clearance and earthquake-proof buildings as well as toolkits to demolish unsafe houses or parts of damaged homes. It helped home owners to form groups and each group was given a set of tools as well as IDR 400,000 for 4 weeks as compensation for their labour. KOGAMI agreed the project with UNDP in January 2010 and identified 854 beneficiaries (using a form developed by the shelter Cluster). This was less than the 1,100 that UNDP had estimated because people had already cleared the rubble from their houses and begun to make repairs. However, there was a 2-month delay with starting the project and KOGAMI had to reduce beneficiary numbers to 715 because there was even less need for rubble clearance and demolition activities 5-6 months after the earthquake. The NGO considered changing the project to help people build earthquake-proof homes instead but it could not change the activities agreed with UNDP.

What went well

UNDP assessed 200 buildings (100% of those damaged) and demolished 157 of them. This meant that the project was able to ensure that many areas were made safe and people avoided further casualties from damaged buildings. UNDP also disposed of rubble from the demolished buildings safely.

Due to UNDP's training for the public works department, it now possesses the technical skills and the necessary equipment for future RCD activities. However, it lacks funding to implement a RCD project and would require the allocation of provincial government money or external assistance with this.

“Must share” ideas

The RCD component of the RISE project highlights the following lessons:

- The Indonesian government needs to address the issue of processing authorisation for the demolition of earthquake-damaged building, particularly in disaster prone areas, to ensure that similar delays do not occur in future.
- This highlights the wider issue of preparedness (including processes for acquiring heavy machinery and other equipment in disaster-prone areas of Indonesia). While it is commendable for the international community to strengthen government capacity, it is difficult to do so during a response. International efforts to strengthen government capacity before an event would ensure smoother implementation of projects and enable the government to continue activities after international organisations, such as UNDP, withdraw.
- The RCD project operated as a discrete activity which led to gaps that could have been avoided with longer-term planning for recovery and reconstruction and links to related projects. For example, when UNDP demolished unsafe school buildings, the schools often expected it to provide support for reconstruction (given the lack of other sources of funding for re-building permanent classrooms). In one school, the children had to use tents (provided by the government) initially and then moved to some temporary classrooms which were erected next to the original school building. There was a delay after the demolition of the old classrooms before new permanent classrooms could be built (eventually funded by a grant from the Lebanese Embassy which selected only one school for support). However, even when the school had built these classrooms, the children could not use them because they had no furniture so they remained in temporary classrooms. Adequate planning and sequenced funding would have helped with a smooth and timely transition to the construction of permanent, properly-equipped classrooms. Sida can also support recovery from disasters by checking that project proposals have thought beyond the proposed activities to link with related projects, both interim and longer-term.
- It is important to remain flexible and adapt to the changing situation. Since many people had cleared the rubble from their homes, KOGAMI could have provided more effective help with building earthquake-proof housing rather than continuing the planned RCD activities.



Development Initiatives wrote this "Learning from Experience" as part of the evaluation of Sida's humanitarian assistance (2010:4)

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