



Enhancing preparedness against quick clay landslides

Alexandra Olson explores the work being done by the Trondheim Red Cross to strengthen local communities against quick clay landslide disasters as a part of the Engage project

Quick clay landslides, which involve quick clay flowing like liquid if overloaded or disturbed, have the potential to affect very large areas and therefore pose a risk to an estimated 140,000 people in Norway. This article will provide an overview of the work that the Trondheim Red Cross has carried out as a part of the Engage project with the aim of enhancing the preparedness of the local community to quick clay landslide disasters.

On April 9, 1978, a quick clay landslide with a volume of five to six million cubic metres occurred in the former Norwegian municipality of Rissa. The result of the disaster

was devastating, as over twenty homes and farms were destroyed and one person was killed. To this day, it is still considered the largest quick clay landslide to have occurred in Norway in the 20th century.

The municipality of Trondheim, in central Norway, is also no stranger to the risks that quick clay landslides pose. In 2012, a quick clay landslide hit Byneset, a former municipality located in the present-day municipality of Trondheim. It was several hundred metres long and spurred the evacuation of about 50 people. The Norwegian Directorate for Civil Protection designated

Øvre Baklandet in Trondheim as a ‘quick clay’ risk zone in 2013. Since it is among the mapped risk zones with the most inhabitants, the occurrence of a quick clay landslide has the potential to cause devastating consequences for the local population.

This is why, on November 12, 2022, a quick clay landslide scenario in the city centre formed the backdrop for an exercise implemented by the Trondheim Red Cross. In Norway, the Red Cross is the country’s largest volunteer disaster preparedness organisation, whose work involves providing assistance to local authorities and emergency services in the event of a crisis. As a branch of the Red Cross, the work of the Trondheim Red Cross is also volunteer-based and organised to ensure that people in need can be reached quickly and efficiently. Since the objective of the organisation is to improve the robustness and disaster preparedness of the local community, an exercise of this sort aligns well with this goal because it aims to foster learning and enhance awareness of a natural disaster that poses one of the most prominent risks within the Trondheim municipality.

The storyline of the exercise involved the evacuation of residents from the city centre who, after coming across the Trondheim Red Cross building along the way, approached in order to receive aid. Before the exercise began, participants playing the role of evacuated residents were given a profile that included background information such as where they lived, what language(s) they spoke, and what specific actions their character carried out after the landslide occurred. Such profiles indicated, for example, if you were a resident of Trondheim, whether or not you spoke Norwegian, and if you had sustained any injuries as a result of the landslide. In the cases where the profile indicated that an injury was sustained, makeup was administered in order to simulate specific injuries. In other cases, participants pretended to be distressed and in need of psychological support or simply sought aid in the form of shelter or food.

The Search and Rescue team of the Trondheim Red Cross, whose members are specialists in first aid, as present in order to train in a lifelike context that reflected a myriad of different situations that could arise after a landslide. Their main tasks included the triaging of evacuees based on their simulated injuries, which ranged from small cuts to broken arms to a full fatality. The responsibilities that assisting evacuees required were also shared with the Red Cross Preparedness Guards, who are volunteers who appear on a list to be alerted and mobilised in the case of an extraordinary incident. Although not as highly trained as the Search and Rescue team, the Preparedness Guards were able to administer basic first aid and provide psychological support to evacuees thanks to the training courses prior to appearing on the alert list. This exercise was the first time that the two teams had the opportunity to train together and opened the door for further collaboration in the future.

Marita Hoel Fossen, Executive Director of the Trondheim Red Cross, described how the collaborations between the two teams played out during the exercise: “We saw how important a good foundation of training was for our volunteers. They were able to divide the responsibilities between them quite quickly, and [after the exercise] we noticed that the Search and Rescue Team viewed the Preparedness Guards with a completely different perspective



– they seem to understand their capacities and the co-operation opportunities, which they hadn’t seen before.”

The Preparedness Guards also provided information to evacuees and sought to answer any questions that came their way. Matthieu Branlat, the coordinator of the Engage project, noted that: “Apart from the initial alert, which was sent to inform us that a ‘landslide’ had occurred, all other information was conveyed to us via the Preparedness Guards.” When asked about his experience of being assisted by the Preparedness Guards, he explained: “I participated in the exercise with my family, so the role I was playing involved arriving at the Red Cross building separately from them. Since we had the liberty of inventing new aspects [to our roles], we took the opportunity at some point to try and get some information about our son since we didn’t have any news and he was supposed to be in the city centre.”

This improvisation gave the Preparedness Guards a chance to practise how they would address such questions in a real-life scenario and gain a better understanding of the channels they would have to go through with the Trondheim municipality obtain this information. Matthieu further noted that: “They were making as much effort as they could to provide as much information as possible and telling us when they didn’t have an answer that they would try to find out through their own channels. You were assured by the fact that someone was aware you were trying to find information and wanted to find it for you. [In this case] it’s not about being able to answer all the time; it’s an incomplete situation, but it’s important that they were conveying that they were working on it.”

Communication was also an integral element in ensuring that evacuees who did not speak Norwegian were still able to obtain information and stay updated in regard to the situation. “There was a girl present who spoke German, and one of the volunteers had some knowledge of speaking German, so any time someone was providing information, it was translated into German for her,” according to Martina Ragosta, a researcher at SINTEF Digital. All updates were also given in both Norwegian and English, and information from the Board of the Red Cross was also provided in at least these two languages.”

Taking steps such as these to ensure that multilingual communication can be facilitated if a landslide were to occur in the future is vital, especially since the population of the Trondheim municipality is very diverse, with many



different languages spoken in addition to English. This is not the only way that the Trondheim Red Cross ensured that its emergency plan accounted for every possible situation that could arise during a landslide scenario, either. “There was also a simulation of a power outage,” Marita explained.

“There was an initial message that indicated that the power was out and that the WiFi was dead as well. We have a generator that provides us with electricity, and it only took seven minutes from when the power went out to when it was back on, so the training [that we underwent to ensure this process runs smoothly] clearly functions. We also have enough petrol to have the generator running for one to two days before more is needed,” she added.

In the event of a natural disaster like a quick clay landslide, the ability of an organisation to take stock of what resources, such as generators and gasoline, are available to them is incredibly important in order to ensure that citizens in need can receive the highest quality of care. For this reason, the Trondheim Red Cross tested a mock-up of an application called ‘Dopomoha’ within the context of the exercise. Originally implemented in Romania to aid and support Ukrainian refugees, the Dopomoha app allows organisations to match the needs of citizens with the resources that spontaneous volunteers (individuals who are not affiliated with an organisation but want to help when a crisis arises), who have registered on the app, provide.

“Within the Trondheim Red Cross, we don’t have a system that is easy to manage spontaneous volunteers, so the Dopomoha app was very helpful,” Marita explained. “Everything was listed on the app so we could filter out which resources we needed; for example, a psychologist offering their assistance in speaking with evacuees or an individual who could provide transportation to help others evacuate, then one of my colleagues could go through the app and easily communicate with the individuals who were offering the particular resources we needed.”

The Dopomoha app and the Preparedness Guard are two solutions identified as part of the Engage project’s work (strategies, tools, or initiatives that can be used to improve collaboration between citizens, first responders, and public authorities). They are featured on the project’s online Catalogue of Solutions, which is one of the main ways that the project works towards its objective of bridging the gap between the formal effort of public authorities to protect citizens from harm and the voluntary support provided by citizens during emergencies.

Within the context of the natural hazards that the municipality of Trondheim faces, Marita emphasised that: “What is important for us is to use the Catalogue of Solutions to see what type of solutions could be interesting to test in these circumstances. We know that managing spontaneous volunteers is important, for example.”

Marita also noted that: “It is exciting to take part in a project like this, as we have the possibility to have safer and better communities all over Europe. It helps us learn and gives us opportunities that we may not have had on our own.”

The educational aspect is something that was also stressed by Matthieu, as he noted that: “Participating in the exercise with my family was very interesting, particularly for my 11-year-old daughter, who was seeing what the Red Cross was doing and hearing about what the municipality would be doing in parallel. This made me realise that there is a huge education component to being an actor



in these exercises. This is something that we will try to take with us when we organise a [larger scale] exercise in Trondheim [in September of 2023] – the more people we can have participate, the bigger opportunity it is to let the population know how the system works, what the role of different organisations is, and how they can be prepared for a hazard event such as a landslide.” Martina also concurred with this point, noting that: “When you know that in the area where you live there is a certain risk, exercises like this are the best way to understand properly how you should react.”

The Engage project will carry out four exercises in 2023 in Spain (raising awareness about the risks that cybercrimes pose), Italy (heatwave scenario), Romania (awareness-raising for a scenario involving mass displacement), and Norway (quick clay landslide scenario). If you would like to stay updated on the results of these exercises, you can visit the Engage website. [C·R](https://www.project-engage.eu)

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■ For more information, visit: www.project-engage.eu

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