

Introduction

Mass movements such as snow avalanches and landslides are common in Iceland. Landslides have caused fatalities and extensive damage in many areas of the country, including the Eastfjords. The town of Seyðisfjörður in the Eastfjords is the main project site within DEM 6.



- Fig 1: Landslides in Seyðisfjörður in December 2020. Photographs taken by the National Commissioner of Police.
- In December 2020, severe landslides caused substantial economic damage in the town of Seyðisfjörður, destroying several houses and buildings. Thankfully, there was no loss of life.
 - Catastrophic snow avalanches are also known in Seyðisfjörður, the most severe one caused 24 fatalities in 1885.

The Icelandic partners in The HuT project:

- The Icelandic Meteorological Office (IMO)
- The Department of Civil Protection and Emergency Management (DCPEM)
- Austurbú research centre representing the municipalities in the Eastfjords

Together these partners make a strong team responsible for warnings and dissemination of information on hazards in DEM 6.

Data analyses and representation

In aftermath of the Seyðisfjörður landslides in 2020, a network of monitoring instruments was installed.

Instruments for monitoring surface and soil movements:

- Automatic total station and a network of prisms
- Ground based InSAR radar
- Inclinometers in boreholes
- Extensimeters in cracks

Instruments for monitoring inflow of water and groundwater level

- Automatic weather station in the source area
- Automatic water level gauges in boreholes

Fig 2: Map of the monitoring network on the slope above the settlement, including outlines of the 2020 landslides.

The instrument network produces important data for forecasting and warning against landslide risk. In The HuT project, precipitation and groundwater level data have been analysed in cooperation with NGI from Norway with the aim of defining threshold values. Data representation is being developed for the landslide forecasting team at the IMO.

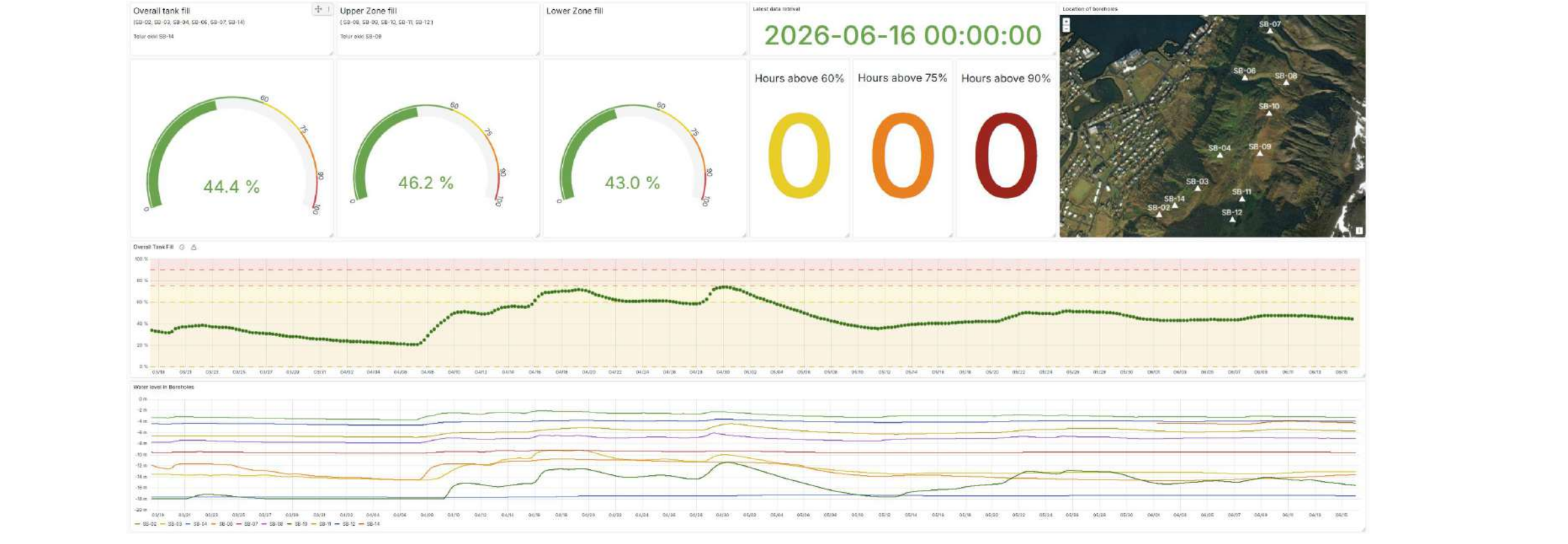


Fig 3: Data representation of groundwater level for landslide forecasters at IMO

Educational material

At the beginning of The HuT project, a need for educational material on landslides and avalanches was identified by focus groups. Specifically, educational material aimed towards residents living in areas prone to landslides and avalanches was not readily available.

Different types of educational material have been developed:

Online handbook on different aspects of avalanche and landslide matters:

- About avalanches and landslides as a phenomenon
- The history of avalanches and landslides in Seyðisfjörður
- Hazard assessment for avalanches and landslides in Iceland
- Existing hazard maps of Seyðisfjörður
- Warning and monitoring system for avalanches and landslides in Iceland
- The monitoring system in Seyðisfjörður
- The construction of permanent defence structures

Fig 4: Screenshot from the digital handbook

Seyðisfjörður is a beautiful town nestled in a narrow fjord in the Eastfjords of Iceland.

Fig 5: Screenshot from an educational video

Videos of different lengths: The aim is to reach different groups, and most videos are made in both Icelandic and English.

Watch a video:

Scan me!

Stories: The Climate Story, was a deliverable in The HuT project (Deliverable 1.9 – The Hut for Me and You). The story was crafted with new inhabitants in mind, especially immigrants. A local artist was brought in to illustrate the story.

Seyðisfjörður East Iceland: A Story of Awareness

A family's journey from city life to a mountain-side village—and what they learn about living with natural hazards.

The HuT - DEM 6 Eastfjords March 24, 2023

Fig 6: Screenshot from a story of awareness. Drawing by Elin Elísabet Einarssdóttir.

Read the whole story here:

Scan me!

One-stop-shop website

Various types of data and information on weather and natural hazards exist for Seyðisfjörður and DEM 6. These are found in different places, e.g., in several reports and different parts of the websites of the IMO and the Civil protection. The same applies to real-time information and warnings.

One of the goals for DEM 6 in The HuT project was to develop a website that would serve as a one-stop-shop for inhabitants of Seyðisfjörður.

The website for Seyðisfjörður was designed by the Civil Protection with input from other Icelandic HuT partners and based on discussions with focus groups. It will be a part of the official website of the Civil Protection and serve as a prototype for other local web pages.

Through the Seyðisfjörður website you can for example reach:

- **Warnings** on weather, natural hazards as well as other hazards
- **Live feed** with announcements and news from the Icelandic Meteorological Office, the Civil Protection, local police, road authorities and the municipality
- **Educational material** on natural hazards such as avalanches, landslides and ashfall
- **Information package** on local hazards for new inhabitants
- **Hazard assessment** and hazard maps for Seyðisfjörður
- **Evacuation plans** for Seyðisfjörður during periods of landslide/slushflow/avalanche danger
- **Information on preparedness** for households
- **Information on aids** during and after an event or a period of high danger, such as aid stations, the natural disaster insurance fund etc.



Fig 7: Screenshot from Seyðisfjörður website

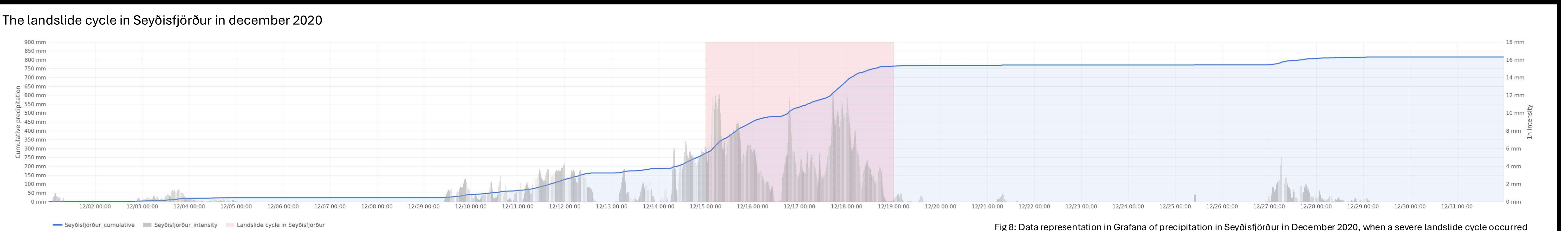


Fig 8: Data representation in Grafana of precipitation in Seyðisfjörður in December 2020, when a severe landslide cycle occurred