Swiss NGO DRR Platform

“Sharpen your Eye"
Natural Hazard Assessment Using Silent Witnesses

Training for DRR Practitioners

Georg Heim

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1. Thematic introduction

Disaster Risk Management according to the risk cycle includes a variety of elements (e.g. early warning, emergency plans, functional committees, structural and organizational measures, etc.). For these DRM elements to be effective, the hazard must first be known. This requires a hazard assessment, with the following questions:

- Where do natural hazards occur (spatial delimitation)?
- How often do these processes occur?
- How strong do they occur (energy)

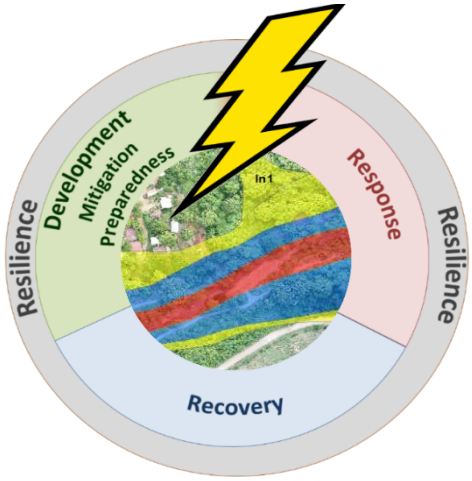

Figure 1: Risk cycle showing the hazard map in the centre as the basis for DRM activities.

A robust hazard analysis is based on three methodological pillars, which are developed chronologically:

The analysis starts with the compilation of a historical profile, where the spatial extent, frequency of occurrence and intensity of the hazard processes are recorded by interviewing those affected by previous events. This work can be carried out as part of a Vulnerability and Capacity Assessment (VCA).

Subsequently, terrain forms that reveal typical hazard processes (silent witnesses) are mapped and analysed; this is conducted in the field and by using remote sensing methods (e.g. aerial photo analyses).

In a third step, technical analyses are carried out, with the previous two steps being used to check the plausibility of the calculations. Reliable results of the analysis can be expected if consistent results emerge from the three steps.

Figure 1: Methodological elements of a robust hazard analysis

In the past two years, the Swiss NGO DRR Platform has conducted training courses on technical hazard and risk analysis. This course will focus on the assessment pillar "Silent witnesses" for landslides, debris flows and floods, thereby completing the learning journey thematic cycle.

2. Course objectives

General objective:

Enhance the capacity of practitioners on how to identify and interpret evidence of past events in the field, e.g. deposits from landslides or debris flows, as an important additional element to the community-based assessments.

Specific objectives

1) Participants know the process characteristics of permanent landslides, debris flows and floods.
2) During field work, participants recognize process-typical terrain forms and can interpret them (statements about the type of process, the frequency of occurrence, or the intensity of the processes).

3. Target groups

The training course is aimed at staff working in the field of DRR in programme countries as well as in head offices (in Switzerland and elsewhere). It is primarily geared towards staff of member organisations of the Swiss NGO DRR Platform but open to interested persons from non-member organisations.

No special previous knowledge is required.

4. Application methodology

The proposed methodology for hazard analysis is based on the SRC Guidelines for Hazard and Risk Assessment. It comprises the following three methodological elements:

- Historical profile: corresponds to community-based approach as part of a vulnerability and capacity assessment.
- Silent witnesses: fieldwork to identify and interpret evidence of past events, e.g. deposits from landslides or debris flows. These characteristics provide information about the event intensity and possibly the frequency of events.
- Technical assessment: supplementary simplified calculations of the hazard.

The training course will focus on the silent witnesses' elements of the guidelines and thereby using virtual and practical exercises.

5. Course structure, timing and content

The course includes a virtual training module of 1.5 - 2 hours in form of a webinar, followed by a field day.

Webinar: Silent Witnesses (May 2025)

- Process understanding and characteristics of landslides and debris flows. The process of (flash) floods will be treated peripherally.
- "Sharpen your eye" - recognizing process-typical terrain features
- Practical group exercises
- The webinar will be held in English with either simultaneous translation into Spanish and French or held as two events in different languages, En and Esp, and with simultaneous to French, depending on the registration
- Dates, see Events | Swiss NGO DRR Platform

Field-Day: Silent Witnesses (June or July 2025)

- Preparation for the field day the evening before with overnight stay at the Hotel Emmental or Hirschen in Langnau
- Shuttle to Alp Imbrig (https://s.geo.admin.ch/3sa7f3t94l0a)
- Hike along the Sädelgraben catchment area (3 km)
  - event history 2014
  - Identification of process relationships between debris flow and landslide
  - Recognizing silent witnesses in the entire area
- Topic landslide Alp Grauenstein (https://s.geo.admin.ch/b2b6drxrher1):
  - Recognizing, mapping and interpreting silent witnesses
  - Suitability assessment of new Alp Grauenstein building regarding natural hazards
  - Use of a simple landslide monitoring system
- Topic debris flow (https://s.geo.admin.ch/35kz9r143vvz)
  - Recognizing, mapping and interpreting silent witnesses

    - Identification of process relationships between landslides and debris flows
    - Assessment of property protection of the Schützenhaus Sädel
- Lunch from the backpack.
- Only carried out in dry weather, tentative date: 19/20 June, with 3/4 July as backup.

6. Organisation

The learning journey is organised and facilitated by Georg Heim. He is a geomorphologist by background with a MSc in Geography. He has extensive experience in hazard and risk assessments, planning and realisation of mitigation measures. Georg has been responsible for the learning journey on hazard and risk assessment that was conducted in 2023 and 2024.

The Swiss Red Cross supports the facilitator and is in charge of logistics, administration and financial issues.