INTEGRATING QUALITATIVE AND QUANTITATIVE DATA FROM STAKEHOLDERS AND MODELLING: THE INTEGRATED RISK ASSESSMENT METHODOLOGY USED FOR THE PROJECT "GREENRISK4ALPS"

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THE PROJECT «GREENRISK4ALPS»

GreenRisk4Alps (GR4A) is an Interreg Alpine Space project aimed at **integrating ecosystem-based solutions into risk reduction strategies** in the Alpine region. It focuses on:

- Gravitational natural hazards: landslides, avalanches, rockfalls and debris-flows
- Six study areas located in France, Italy, Germany, Austria and Slovenia

THE RISK ASSESSMENT METHODOLOGY

Why? The current and future risks need to be assessed
to evaluate the benefits in terms of risk reduction associated with ecosystem-based solutions

How? The risk assessment follows a stepwise approach which combines **two different approaches**:

- the "**Rapid Risk Appraisal**", a participatory tool, which provides a quick overview of the main perceived risks and of their management practices
- a **spatially explicit assessment** which uses the natural hazard and forest protective function modelling results and allows for different depth of analysis

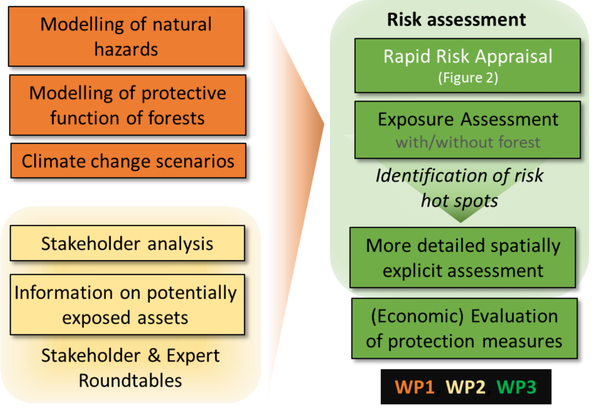

Figure 1. Different project activities of different work packages (WP) are integrated into the risk assessment process.
The assessment aims to **select risk hot spots**: areas where forests have a major role in protecting assets from natural hazards.

THE RAPID RISK APPRAISAL

The Rapid Risk Appraisal (RRA) aims to **identify and rank the risks related to natural hazards** and to **assess the risk management practices** by involving local experts in a workshop. The approach follows a series of **steps** based on the **ISO standard 31000 on risk management** (see Figure 2):

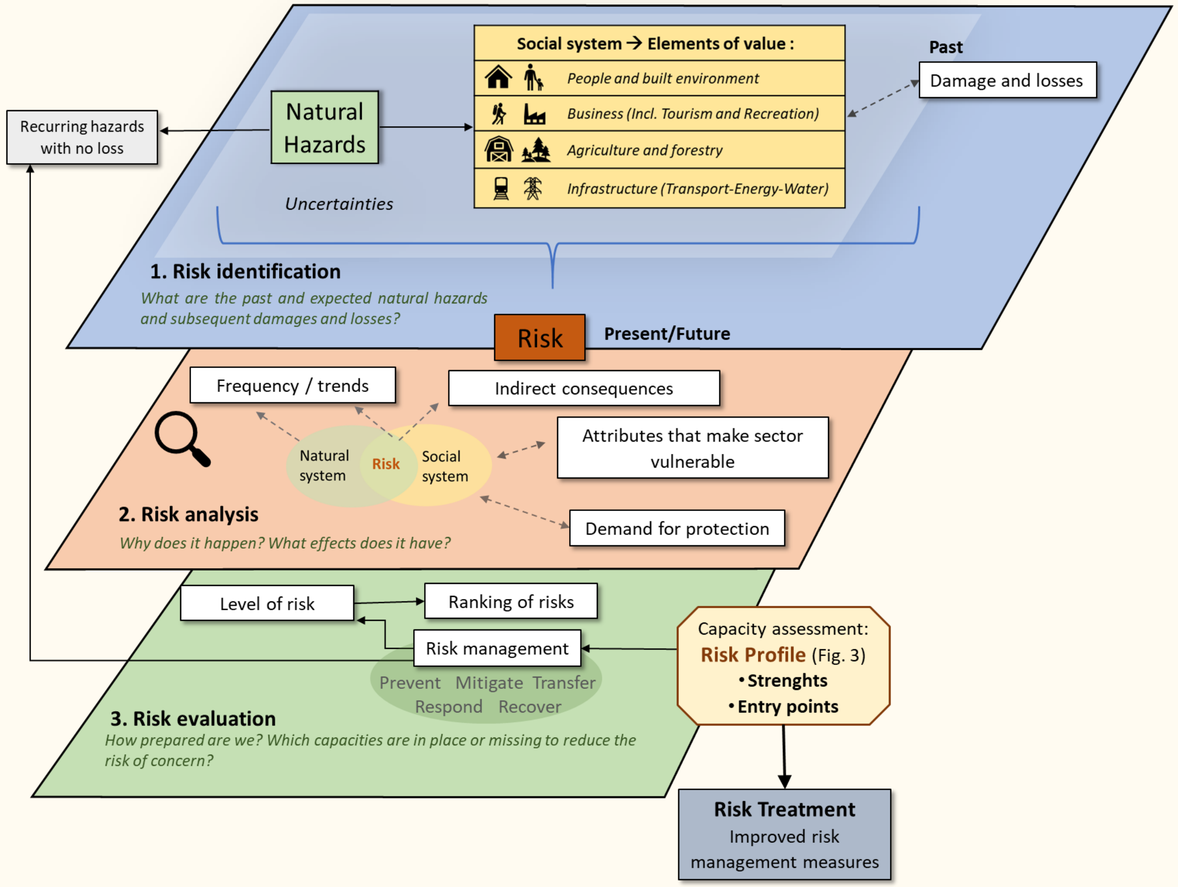

Figure 2. The Rapid Risk Appraisal methodology focuses on acquiring information on both the **natural** and the **social components** which constitute different risks (**steps 1** and **2**). Moreover, risk management capacities and practices are assessed (**step 3**) and visualised in a graph (**risk profile**, fig. 3). This allows to pinpoint the main risks on which to focus further spatial analysis and to identify the entry points for improved risk management measures (**risk treatment**).

Link to project website

THE RISK PROFILE

The risk profile provides an overview of the **available capacities**, **measures and resources related to risk management**. The profile is generated by asking questions to experts and assigning a point system for evaluating the answers. The questions are grouped to form **indicators**, following the risk management cycle steps. The indicators are represented on a **spider chart** (see Figure 3) to have a schematic representation which allows to:

- Determine whether the risk levels derived by the risk analysis can be accepted or require **additional or modified measures**, which can be discussed in a final phase (**risk treatment**)
- Compare various natural hazards and study areas

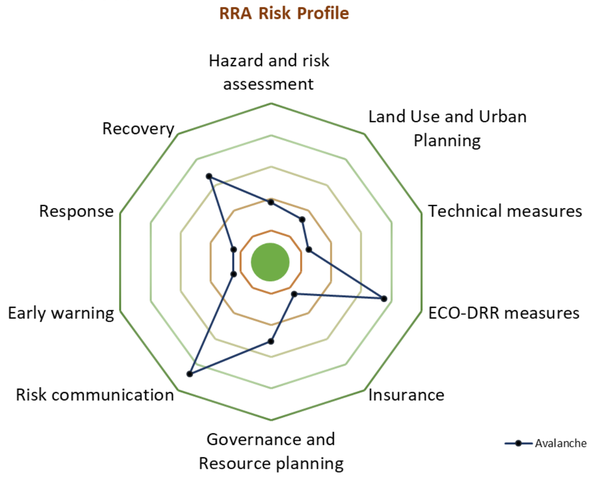

Figure 3 . The Rapid Risk Appraisal Risk Profile summarises the **strengths** and **entry points** in **risk management practices** through indicators, arranged radially in the graph. If the available capacities are high, the indicator will score high (dot located in green area). The circle in the centre shows the level of advancements in climate change adaptation (green: high, red: low).

OUTLOOK

The next steps consist in applying the methodology to obtain the necessary results for the project. This will also allow to review the methodology and to adjust it to obtain an improved version for future use.

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