Master thesis on the governance of forests for disaster risk reduction in mountain regions

In mountain areas, forests on steep slopes can prevent or reduce the risk of natural hazards, such as rockfall, landslides, avalanches, or torrential floods. By protecting people and infrastructure from natural hazards, these *protective forests* provide an ecosystem service that is essential for mountain communities. The importance of forests for a nature-based solution for disaster risk reduction is increasingly recognized as natural hazards become more frequent and extreme under global change. In some regions, these forests have a special status and are protected, or are managed in specific ways to maintain their protective effect. However, the governance and management of protective forests differs between different countries and mountain regions. In this project, we aim to develop a global overview of how protective forests are recognized, governed, and managed, which can help identify good practices and support international exchange and learning. In this context, we suggest the following master thesis topics for students looking to start their thesis in **summer or autumn 2025:**

1. **Social-ecological archetypes of mountain forests**

Globally, mountain regions differ in terms of biophysical conditions, their exposure to different types of natural hazards, and their social and economic context. In this data-driven research, you will combine existing global datasets to identify archetypes of mountain regions that share similar conditions. This will provide a basis for understanding the potential to upscale local findings and exchange good practices between regions, and help identify knowledge gaps and develop further research priorities.

2. **Governance of protective forests: an international review**

The ways in which protective forests are recognized, regulated, and managed differs between countries. By conducting a survey with experts in forestry and natural hazards, you will develop an overview of the institutions (formal and informal) that regulate the management of protective

forests worldwide. The results will provide valuable insights into diverse governance approaches and contribute to identifying effective institutional arrangements for forest-based disaster risk reduction.

3. Adaptation of institutions after extreme events

Extreme events, such as the major floods in Norway and Slovenia in 2023, can trigger shifts in how societies recognize and manage forests that reduce natural hazard risks. This study investigates cases where new policies, regulations, or incentives emerged in response to such events. Through interviews with local experts, you will explore how institutional frameworks evolved, aiming to understand the drivers and barriers to adaptive forest governance in the face of increasing climate-related disturbances.

By conducting one of these studies, you will learn to develop research questions, apply theoretical frameworks to an applied question, review relevant literature, and conduct empirical research. You will be working in our new research group with supportive supervision, and will have the opportunity to participate in an international network of collaborators.

If you are interested in one of these topics or would like to develop your own research idea on a related topic, please contact JProf. Dr. Ana Stritih, **ana.stritih@mses.uni-freiburg.de**