

# MSc Thesis: Effects of Irrigation on Grassland Communities in the Lower Engadin Valley

**Starting date:** February 2026 (flexible)  
**Duration:** according to your academic institution  
**Working Place:** Agroscope, Zürich, Switzerland  
**Language:** English, German  
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## About the project

Irrigation has shaped agricultural and semi-natural grasslands for centuries, especially in water-limited mountain regions. In the Swiss Alps, traditional systems such as the Suonen have long supported forage production while influencing local vegetation patterns. By altering soil moisture, nutrient dynamics, and microclimate, it can influence plant species richness and composition. While irrigation may buffer drought impacts, it can also favour competitive species, reducing diversity. Outcomes depend on intensity, timing, and interactions with other management practices. With climate change expected to increase summer drought in alpine areas, understanding irrigation's effects on plant diversity is critical for balancing forage production with biodiversity conservation.

Agroscope launched a long-term project over twenty years ago to quantify the effects of irrigation on mountain grassland biodiversity. Using a treatment-control design in the Lower Engadine valley—an area renowned for its rich flora—vegetation surveys have been conducted every five years. This MSc thesis will build on the data collected to date, carry out the final round of vegetation and grasshopper surveys, and integrate these results into a comprehensive analysis of how irrigation has influenced plant and grasshopper communities over two decades.

## Your key tasks

- Pre-analyse existing data (February to April)
- Prepare and organise the field season accordingly (May to July)
- Resurvey plant communities in the lower Engadin (600 Dryas botanical certificate highly advantageous, 400 Iris certificate required. Driving licence required.)
- Optional: resurvey grasshopper communities in the lower Engadin (no prior knowledge needed)
- Conduct interview with farmers about their management practices (German knowledge of advantage)
- Analyse the data and place it in the context of the environment and its change over time (using R)

## What we offer

- Exciting field season in the Swiss mountains
- An excellent opportunity to develop your species ID further
- Opportunity to contribute to meaningful research with positive impact on mountain ecosystems
- Possibility of co-authorship on a published scientific article
- Engaged support by a motivated research team

## Application

If you are passionate about plants, biodiversity, farm management, and are eager to contribute to the preservation of ecosystem services in mountainous areas, we encourage you to apply. Please email us a short dossier, including a half-page motivation letter and your CV.



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