MOVING
MOuntain Valorisation through INterconnectedness and Green growth

Swiss Jura

Vulnerability matrixes and vulnerability map

2024

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What will you find?

The MOVING (MOuntain Valorisation through INterconnectedness and Green growth) project stands at the forefront of climate resilience, aiming to fortify the sustainability of mountain areas against climate change. A key outcome of the project is the creation of tools that show susceptibility and vulnerability, ready to be used by both experts and the general audience[1].

This document synthesises crucial information for the **Swiss Jura Region**, particularly focusing on the Participatory Vulnerability Matrix and the Spatial Vulnerability Map.

Using a participatory approach, the Vulnerability Matrix allows to downscale relevant information to the local level, offering a detailed view of how drivers of change impact this territory. Understanding that areas within the Swiss Jura Region are not equally vulnerable to identical threats, the Spatial Vulnerability Map emerges as a critical tool. It showcases the varied susceptibility across the region, paving the way for more effective, targeted adaptation strategies.

Mountain Reference Region: Swiss Jura

Mountain Reference Landscape: Swiss Jura MRL

Value Chain: Tête de Moine PDO

Land-use system: Permanent pastures

Reference variable: Annual production of grass and fodder expressed in terms of quantity and species diversity

[1] Extended outputs are accessible through the following documents: 'Land Use Systems and Land Cover Map in 23 Reference Regions' and 'Land use system vulnerability matrixes and vulnerability maps for the 23 reference regions'

1. Participatory Vulnerability Matrix

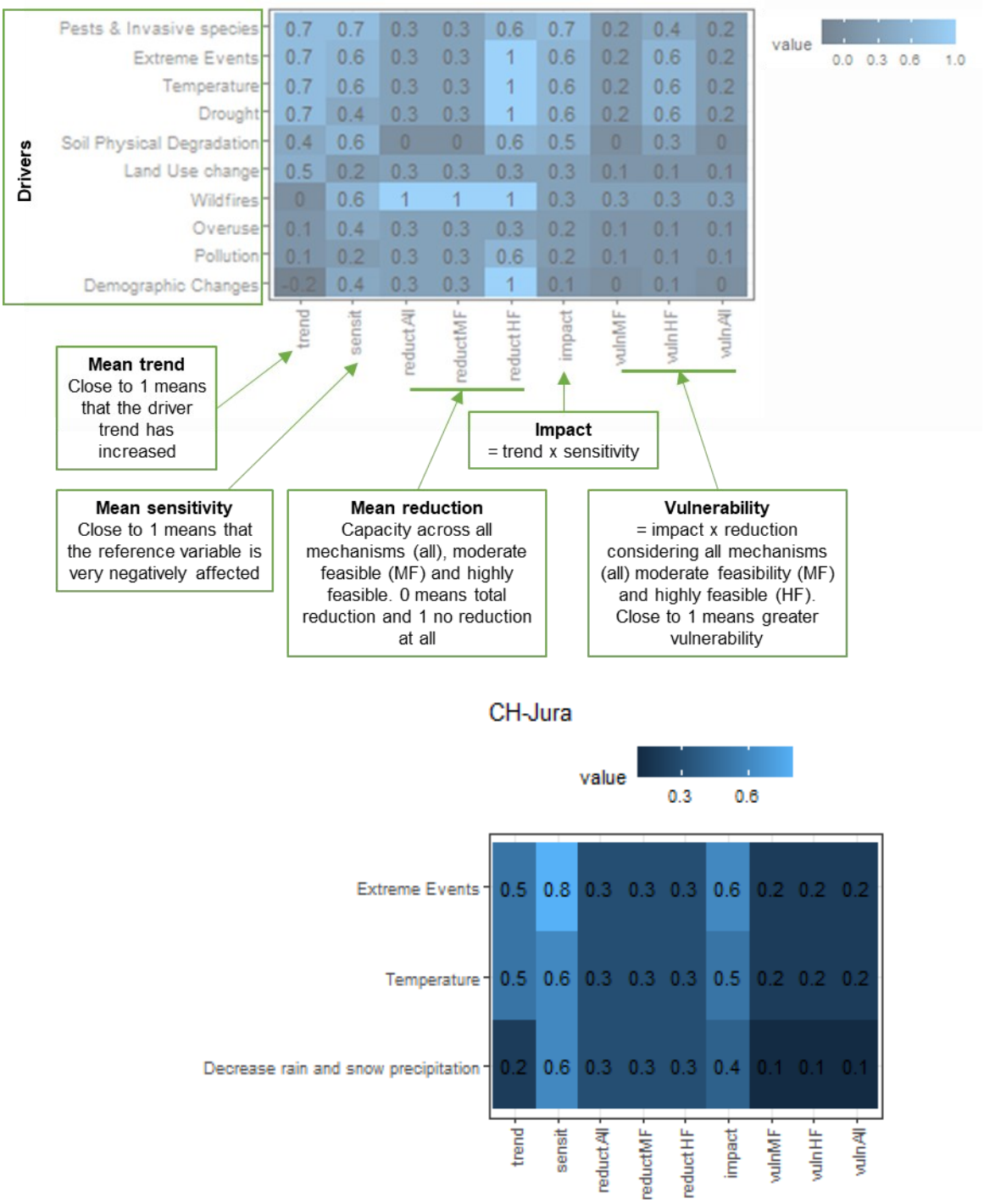

Figure 1. Vulnerability Matrix for the Swiss Jura MRL (below) and how to read it (above). Source: MOVING H2020

In this case study, to calculate vulnerability, the three most relevant drivers were selected according to the driver ranking. Those drivers were extreme events, temperature and decrease rain and snow precipitation. The impact of the three selected drivers is medium-high (0.4-0.6), but there are mechanisms with high feasibility and moderate impact reduction capacity, which if applied would reduce the vulnerability of the system.

1.1. List of adaptative mechanisms suggested by consulted stakeholders

- Better use of the milk potential when the seasons are favourable
- Continue to position Tête de Moine AOP in the premium quality segment in order to ensure an income and quality of life for producers.
- Improve the link between the value chain and the specific resources (such as wooded pastures).
- Maintain an attractive price, to attract industrial milk producers to the Tête de Moine value chain
- Strengthen the division of labour between the enterprises in the area (management of mother cows, heifers, cheese dairies, etc.).

2. Spatial Vulnerability Index and Map

Vulnerability drivers:

- Precipitation
- Extreme weather events
- Temperature

Spatial explicit factors:

- Elevation
- Tree cover density

Table 1. Spatial Vulnerability Index for Permanent Pastures in the Swiss Jura MRL.

Spatial Vulnerability Index			Spatial Explicit Factor 1		
			Elevation (m)		
			[0-600]	*]600-950]*	*]950-max]*
Spatial Explicit Factor 2	*Tree cover density (%)*	*]70-100]*	**2**	**2**	**1**
		]20-70]	**3**	**2**	**2**
		]1-20]	**4**	**3**	**2**
		[0-1]	**5**	**4**	**3**

Vulnerability levels: 1 – very low, 2 – low, 3 – medium, 4- high, 5 – very high.
Source: MOVING H2020

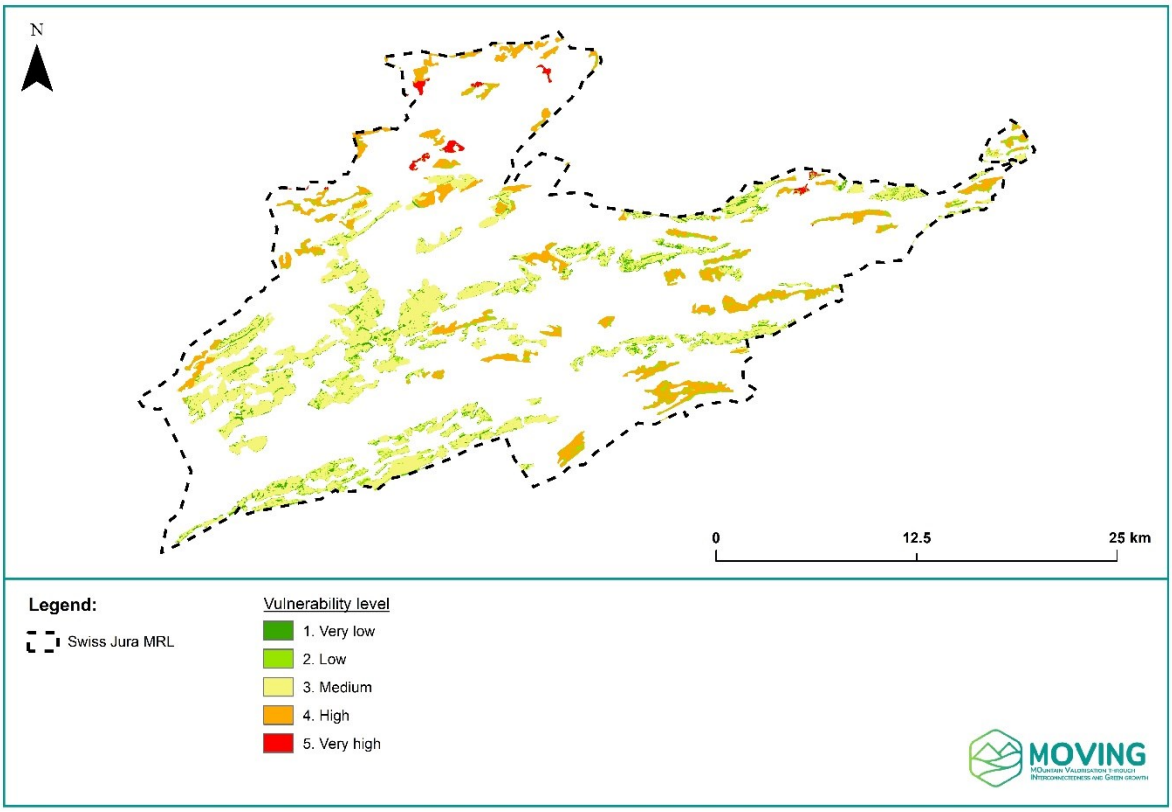

Figure 2. Vulnerability Map for the Permanent Pastures in the Swiss Jura MRL. Source: MOVING H2020