MOVING
MOuntain Valorisation through INterconnectedness and Green growth

Transdanubian Mountains

Vulnerability matrixes and vulnerability map

2024

MOVING receives funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 862739. The content of this document does not reflect the official opinion of the European Union. Responsibility for the information and views expressed therein lies entirely with the author(s).

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 **Transdanubian Mountains 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 Transdanubian Mountains 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: Transdanubian Mountains

Mountain Reference Landscape: Transdanubian Mountains MRL

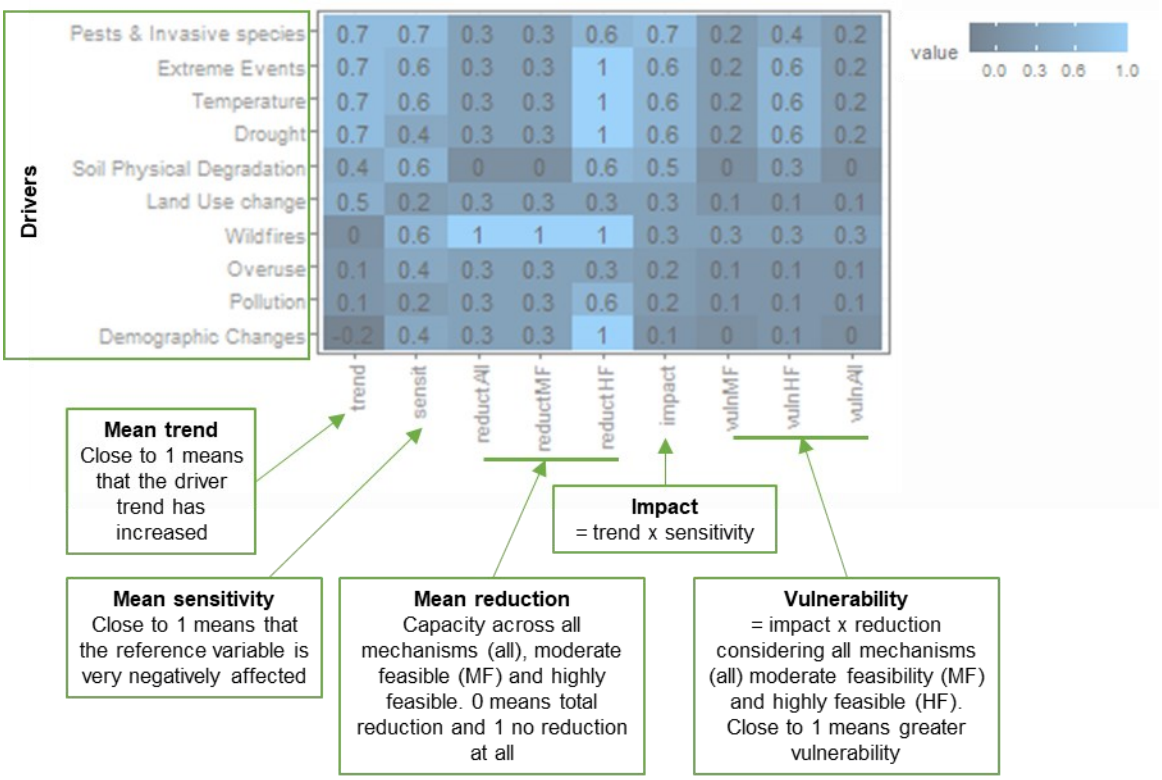
Value Chain: Agroecological knowledge – Cold Mountain Shelter knowledge economy

Land-use system: Mosaic of land uses

Reference variable: Quantity of healthy food produced through mosaic land use in agro-ecological farming

[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



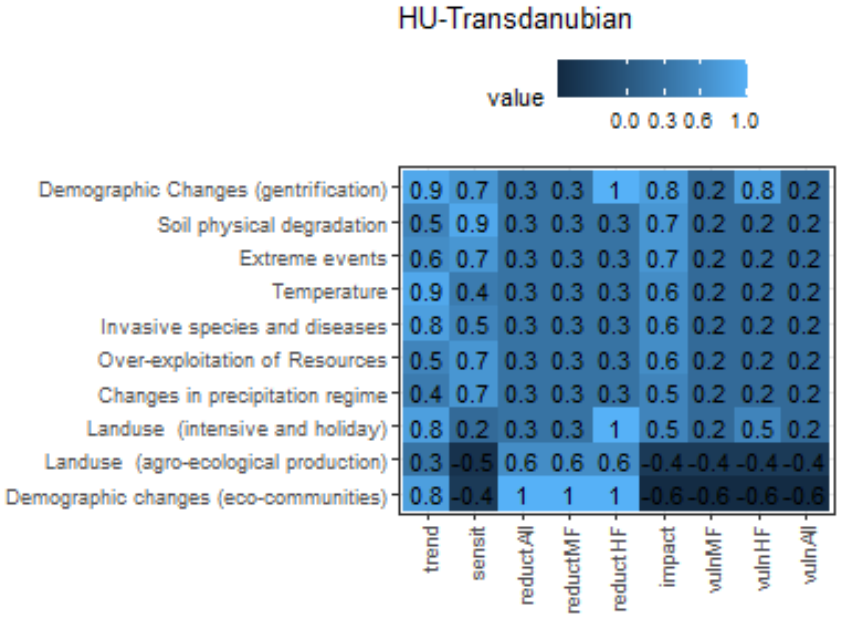


Figure 1. Vulnerability Matrix for Transdanubian Mountains MRL (below) and how to read it (above). Source: MOVING H2020

It is very interesting to see in this case how there are two drivers of change that have a positive impact on the reference variable, which allows a final value of system impact that is not as high as it could be if we only count the drivers that have a negative effect. Despite this, we cannot downplay the high impact values of the other drivers, especially those related to gentrification, land degradation, and climate drivers. Adaptation mechanisms have a high feasibility to be applied, although the overall adaptive capacity to these drivers is medium (not complete). Here again, it is important to have drivers of change that improve the situation, in order to compensate for the above.

1.1 List of adaptative mechanisms suggested by consulted stakeholders

- Resistant, drought and heat tolerant vine and fruit varieties
- Water retention through ditches, terraces
- Diversification, small scale
- Monitoring, conscious, adaptive planning, management, trial and error, experimentation
- Area appropriate farming
- Climate and social scientists to decine on 'local building codes' together with architects
- Water retention, collection and storage of rain water – creation of cisterns

2. Vulnerability Map

Vulnerability drivers:

- Soil physical degradation
- Land-use change
- Precipitation

Spatial explicit factors:

- Tree cover density
- Slope

Table 1. Spatial Vulnerability Index for the Mosaic of land uses in the Transdanubian Mountains MRL

Spatial Vulnerability Index			Spatial Explicit Factor 1		
			Tree cover density (%)		
			[0-10]	*]10-60]*	*]60-100]*
Spatial Explicit Factor 2	*Slope (%)*	*[0-10]*	**3**	**2**	**1**
		]10-20]	**4**	**3**	**2**
		]20-max]	**5**	**4**	**3**

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

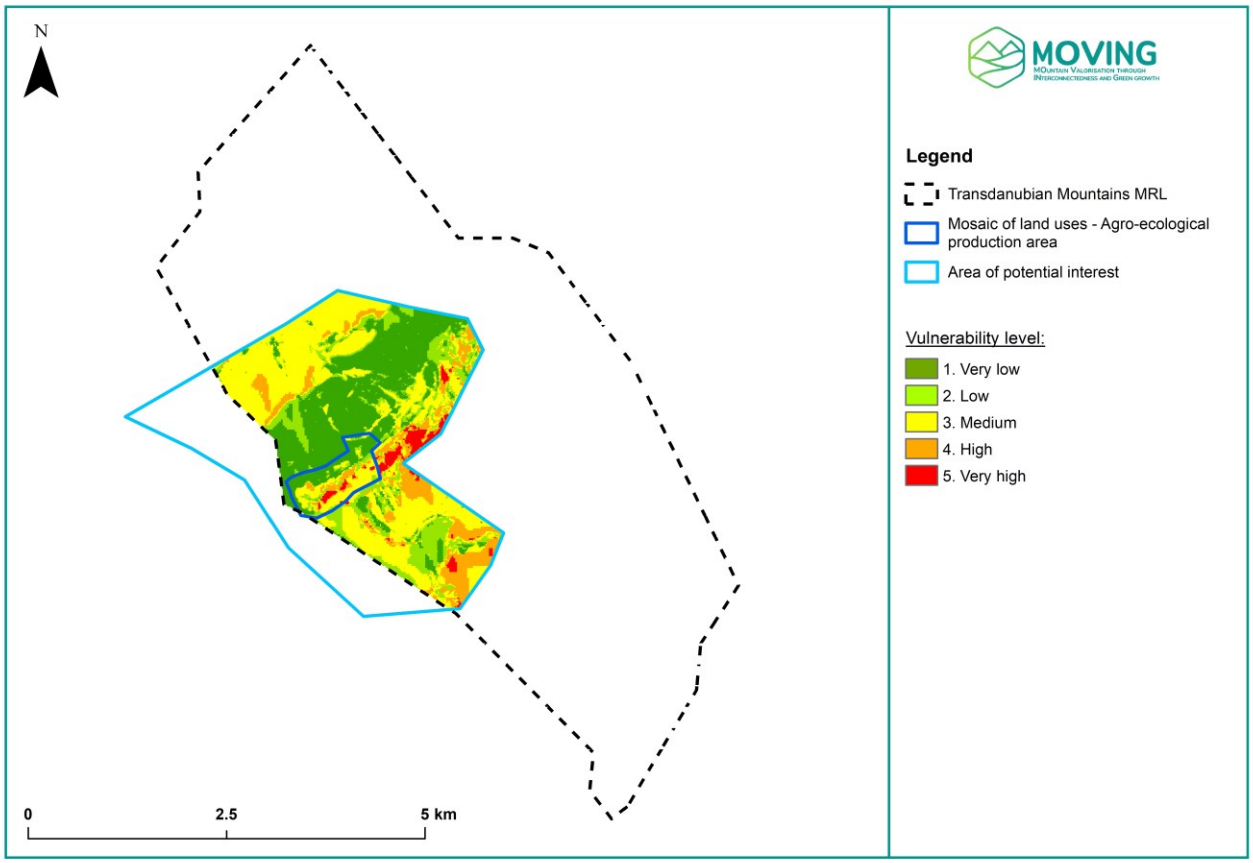


Figure 2. Vulnerability Map for the Mosaic of land uses in the Transdanubian Mountains MRL.
Source: MOVING H2020