MOVING
MOuntain Valorisation through INterconnectedness and Green growth

Beydaglari

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 **Beydaglari 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 Beydaglari 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: Beydaglari

Mountain Reference Landscape: Beydaglari MRL

Value Chain: Greenhouse Tomato

Land-use system: Intensive and irrigated annual crop

Reference variable: Greenhouse Tomato production

[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

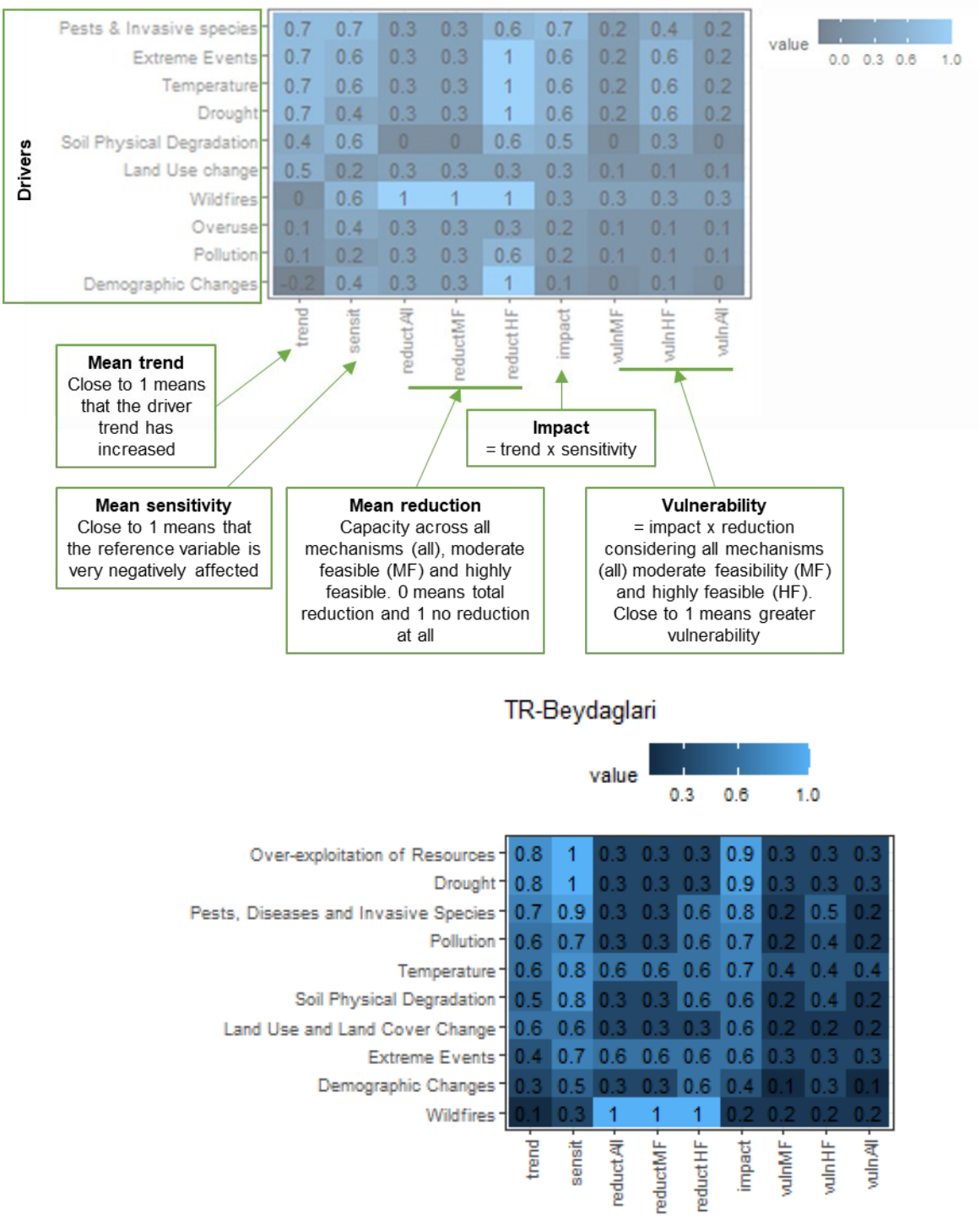

Figure 1. Vulnerability Matrix for the Beydaglari MRL (below) and how to read it (above). Source: MOVING H2020

There is a high impact risk for the coming years for many drivers, warning of the need for urgent action. Fortunately, there appear to be mechanisms with high feasibility that could be applied to reduce vulnerability. Although it will require very strong support, to be able to implement mechanisms with medium and low feasibility in some cases, as well as creativity to be able to develop new ones. Issues related to water scarcity, temperature rise, disease, pollution, and soil degradation seem to need special attention.

1.1. List of adaptative mechanisms suggested by consulted stakeholders

- Agricultural insurance
- Planning of greenhouse investments:
- Encourage youth for agriculture
- Development of drought resistant varieties / using virus-free varieties:
- Smart agriculture systems
- Regulations to reduce water over-consumption
- Good agricultural practices
- Water transfer

2. Spatial Vulnerability Matrix and Map

Vulnerability drivers:

- Over exploitation of resources
- Precipitation

Spatial explicit factors:

- Slope
- Precipitation

Table 1. Spatial Vulnerability Index for Intensive/ Irrigated Annual crop in the Beydaglari MRL.

Spatial Vulnerability Index			Spatial Explicit Factor 1		
			Slope (%)		
			[0-10]	*]10-20]*	*]20-max]*
Spatial Explicit Factor 2	*Precipitation (mm)*	*[0-500]*	**3**	**4**	**5**
		]500-max]	**1**	**2**	**3**

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

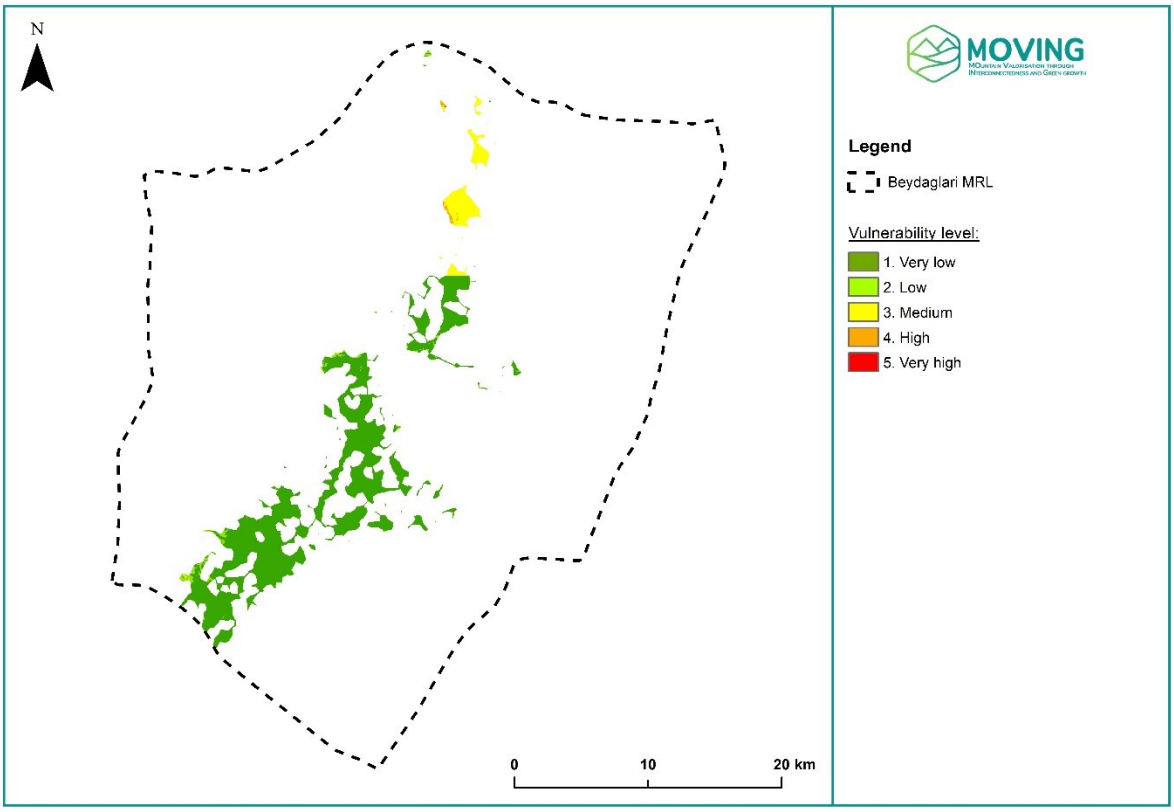

Figure 2. Vulnerability Map for the Intensive/ Irrigated Annual crop in the Beydaglari MRL. Source: MOVING H2020