

Betic Systems

Vulnerability matrixes and vulnerability map

2024





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 audience¹.

This document synthesises crucial information for the [Betic Systems 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 Betic Systems 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: Betic Systems

Mountain Reference Landscape: Subbetica Cordobesa

Value Chain: Organic mountain olive oil

Land-use system: Organic olive groves

Reference variable: The productivity of organic olives (in terms of quantity and quality)

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

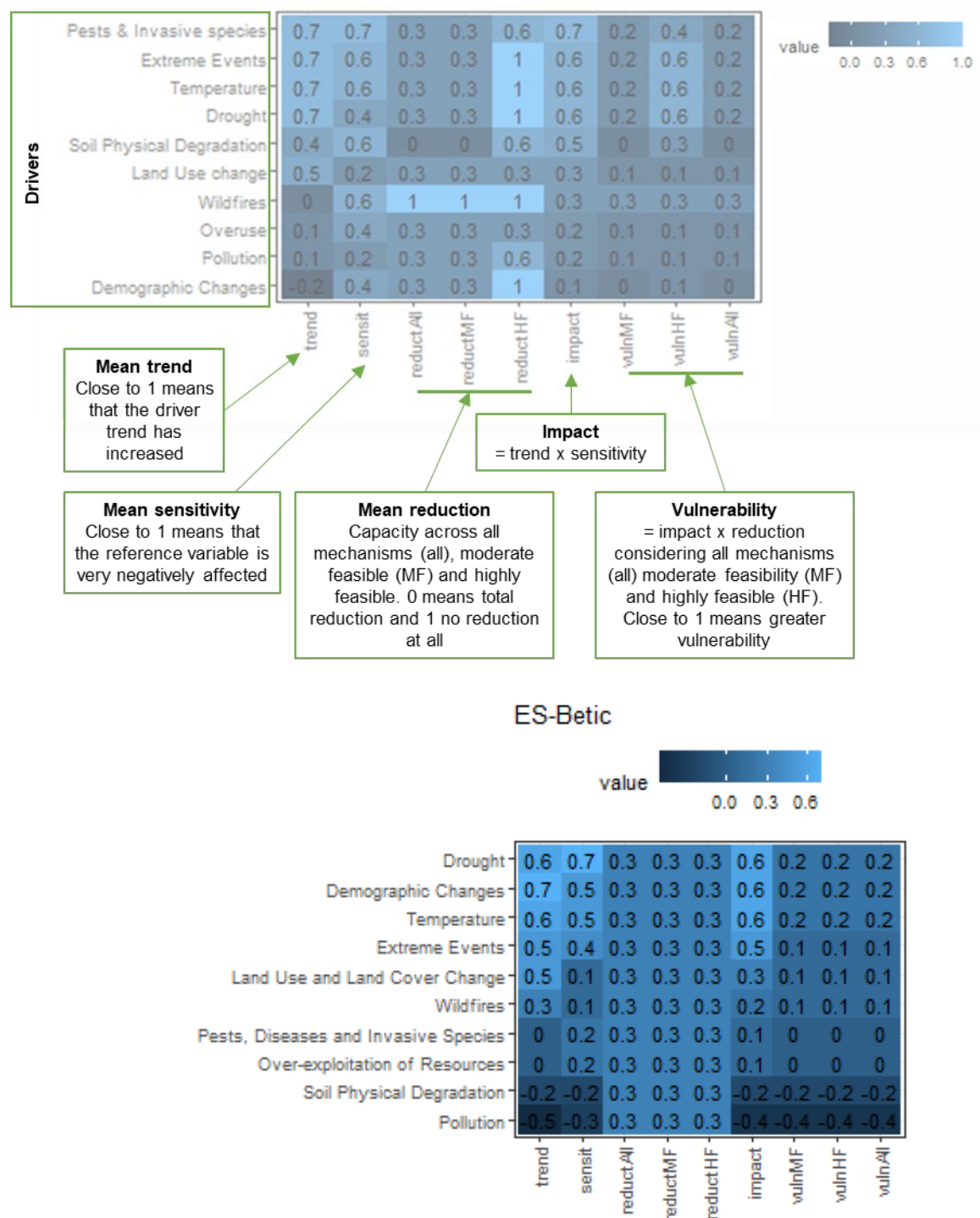


Figure 1. Vulnerability Matrix for the Betic Systems MRL (below) and how to read it (above). Source: MOVING H2020

Climate drivers (drought, temperature and extreme events) and demographic changes (depopulation) are the drivers with the greatest potential impact on olive productivity. It should be noted that the average potential impact reduction capacity and high viability of the adaptation mechanisms could be high. The negative values in sensitivity and trend for the drivers of physical soil degradation and contamination are due to the improvement of the soil and the absence of contamination due to the change from conventional to organic production.

1.1. List of adaptative mechanisms suggested by consulted stakeholders

- Awareness-raising campaigns on good practices
- Increase in CAP aid for organic mountain olive groves,
- Actions to raise awareness and disseminate Good Practices
- Specific informative actions to foment transition to organic production
- Construction of new composting plants using organic waste from olive groves and olive oil mills
- Practices adapted to Climate Change
- Adapted soil management and erosion control practices
- Dissemination of the benefits associated with the eco-systemic services

2. Spatial Vulnerability Index and Map

Vulnerability drivers:

- Reduction and change of precipitation regimes
- Socio-demographic changes

Spatial explicit factors:

- Slope
- Elevation

Table 1. Spatial Vulnerability Index for organic olive groves in the Betic Systems MRL.

Spatial Vulnerability Index			Spatial Explicit Factor 1		
			Slope (%)		
			[0-10]	[10-20]	[20-max]
Spatial Explicit Factor 2	Elevation (m)	[0-600]	1	3	4
		[600-max]	2	4	5

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

Source: MOVING H2020

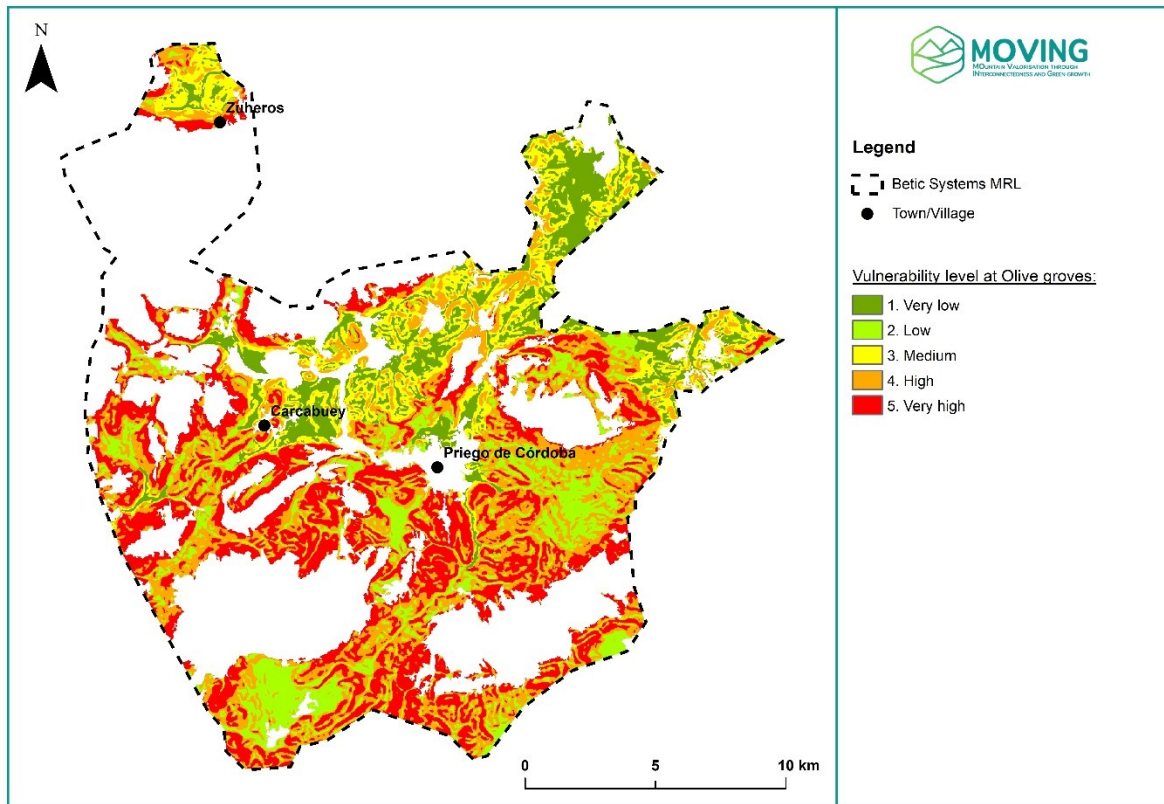


Figure 2. Vulnerability Map for the Organic Olive Groves in the Spanish Betic System MRL.
Source: MOVING H2020