



S O G R A P E

# HIGH-RESOLUTION GEOMATICS TOOLS

## - Sustainably managing commercial vineyards to address the UN SDGs -

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# High-resolution geomatics tools

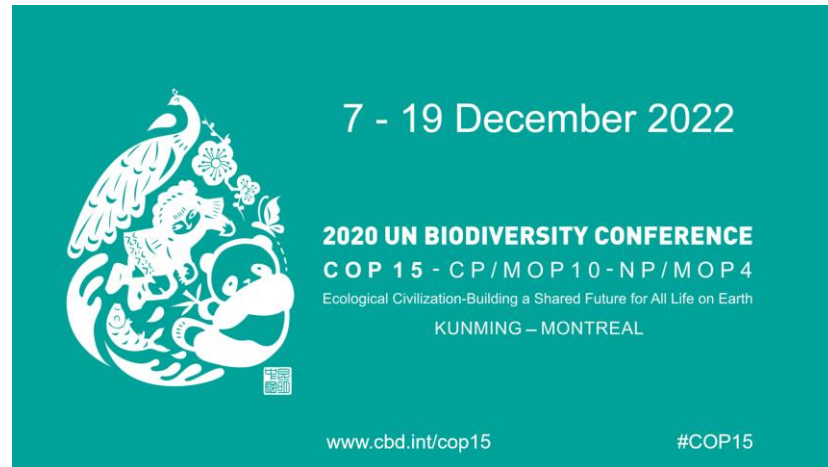
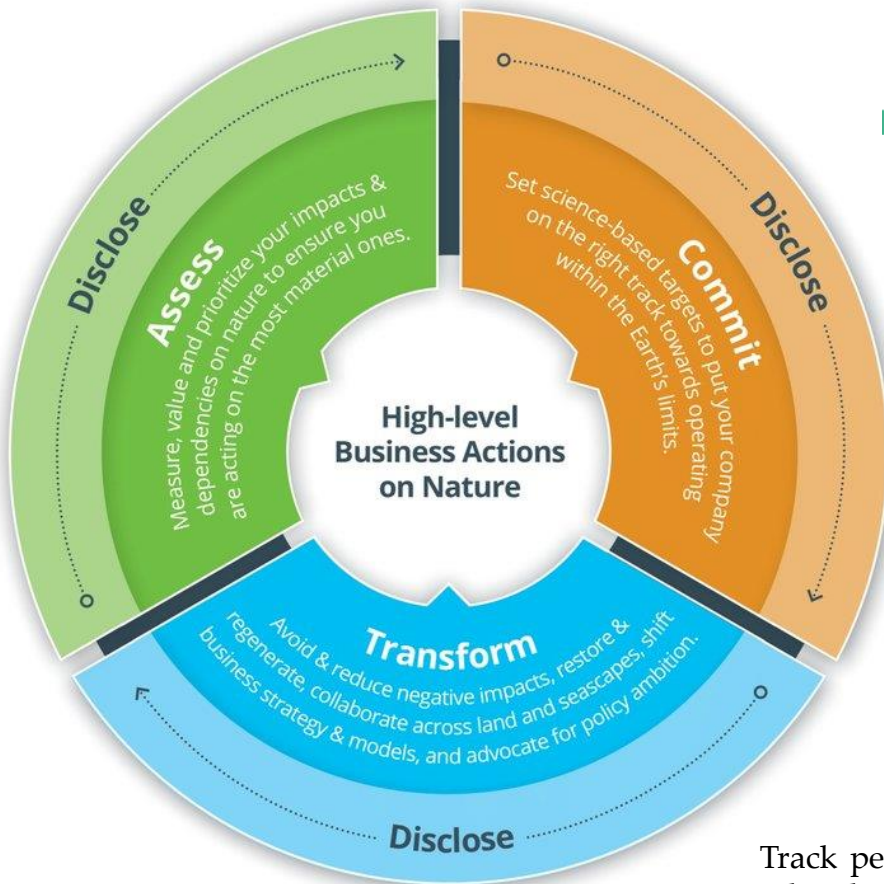
## THE UN 17 SUSTAINABLE DEVELOPMENT GOALS



**SUSTAINABLE  
DEVELOPMENT** **GOALS**

**17 GOALS TO TRANSFORM OUR WORLD**

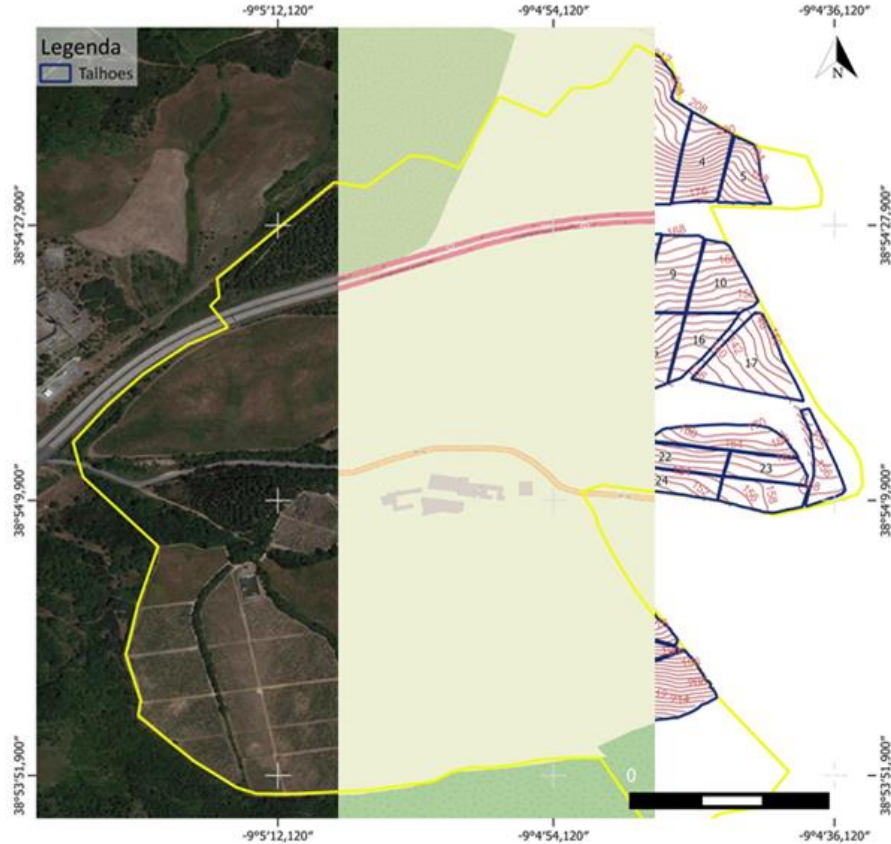




Track performance and prepare to publicly report material nature-related information throughout your journey – *Business for Nature*

# High-resolution geomatics tools

## FREELY ACCESSIBLE GEOMATIC SOFTWARE



Leading open-source GIS software, fully volunteer-driven and usable on Windows, Mac, Linux, BSD and mobile devices.

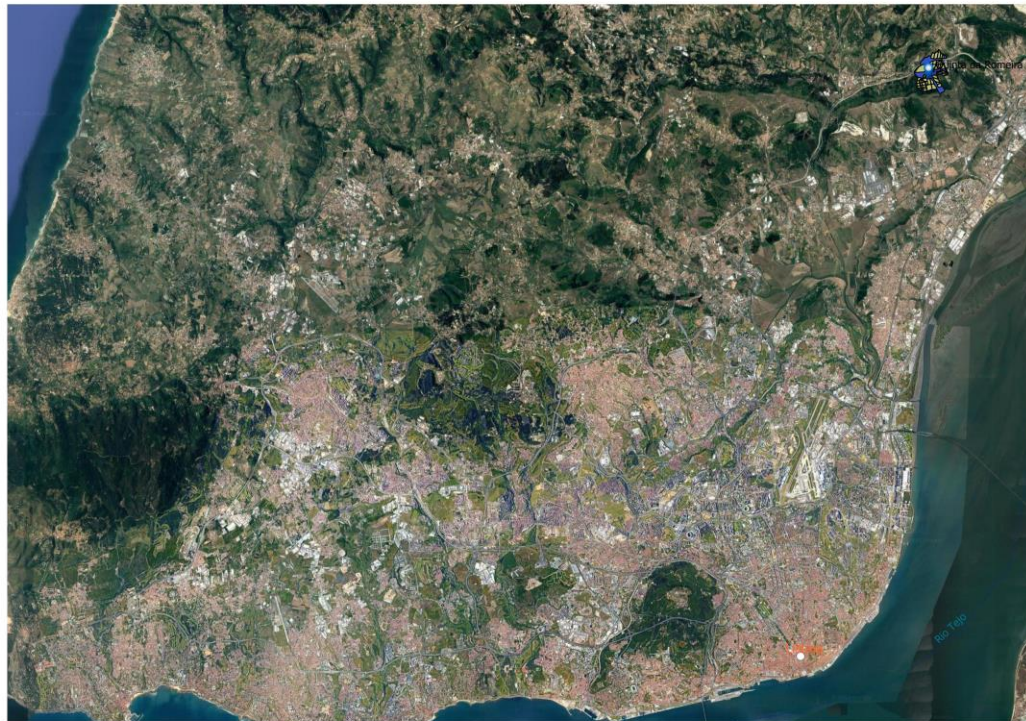
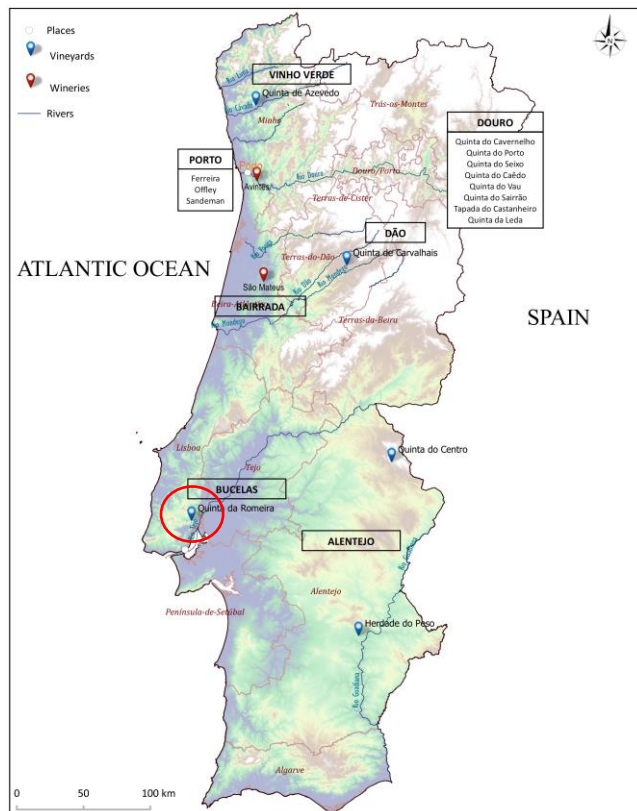
1 394 076 lines of code  
54 093 165 US\$ development cost

2 000 developers (20-50 core)  
200 000 weekly users  
2 million+ irregular users

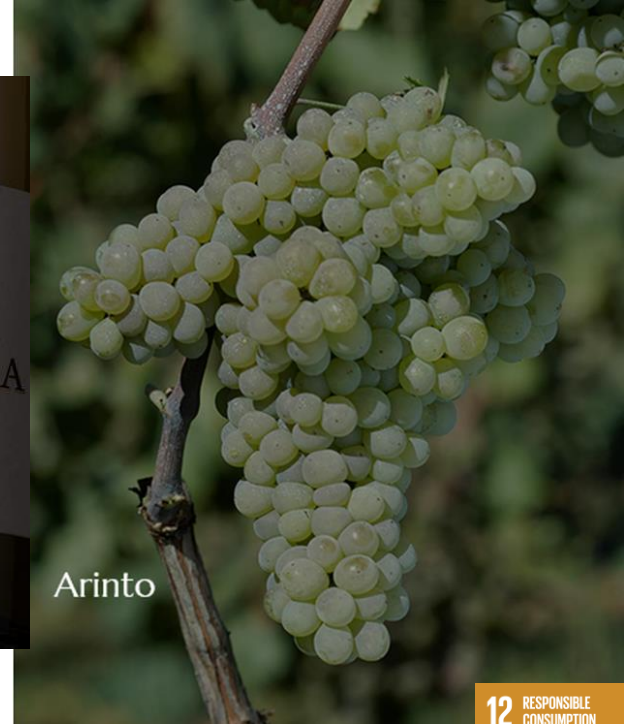
Sources: qgis.org, David A. Wheeler's SLOCCOUNT, GISPO

# High-resolution geomatics tools

## THE VINEYARD CASE STUDY



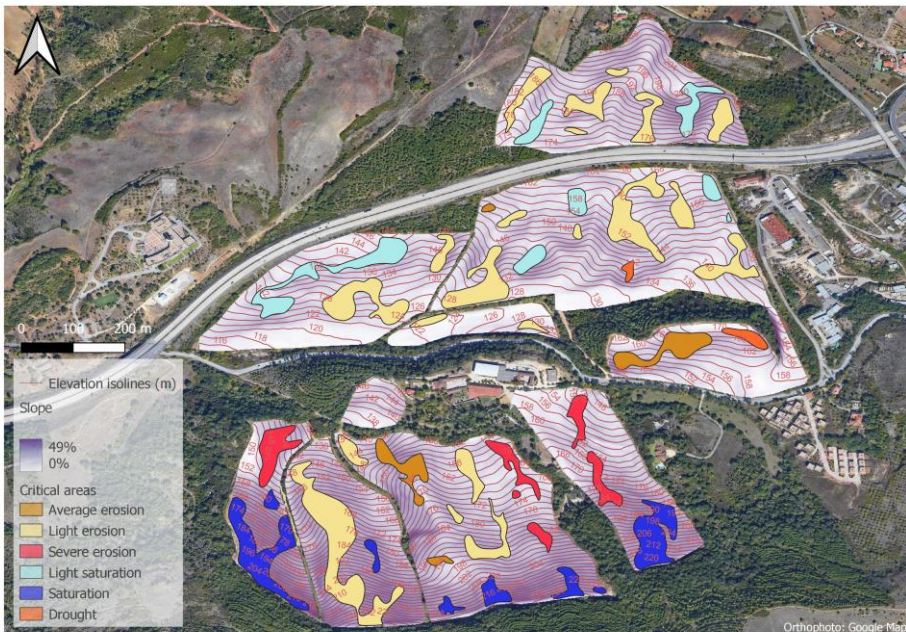
75-ha peri-urban vineyard, 50% of PDO Bucelas  
Testbed for ~2 500 hectares owned by SOGRAPE in 5 countries

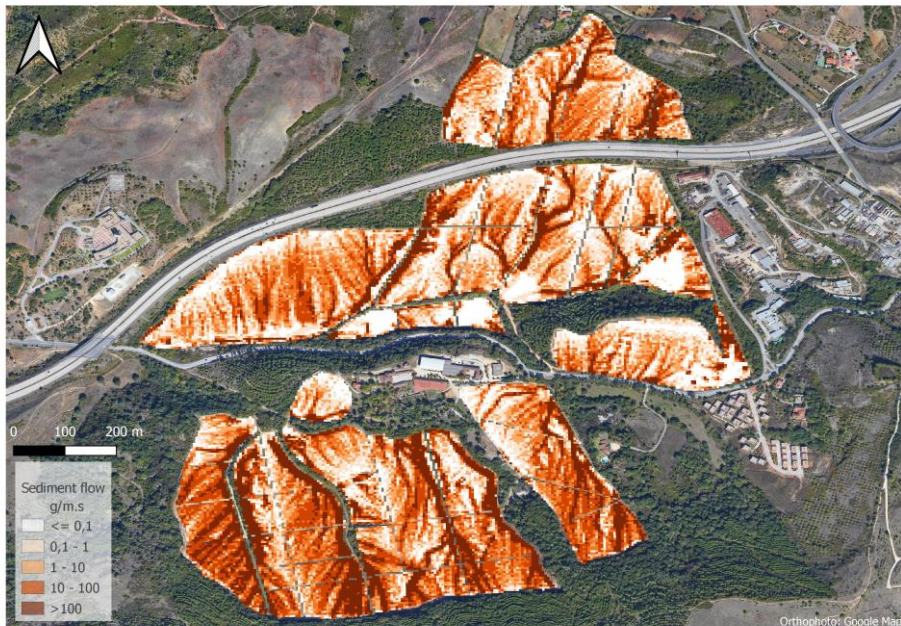


CHOOSE | SHARE | CARE

# High-resolution geomatics tools

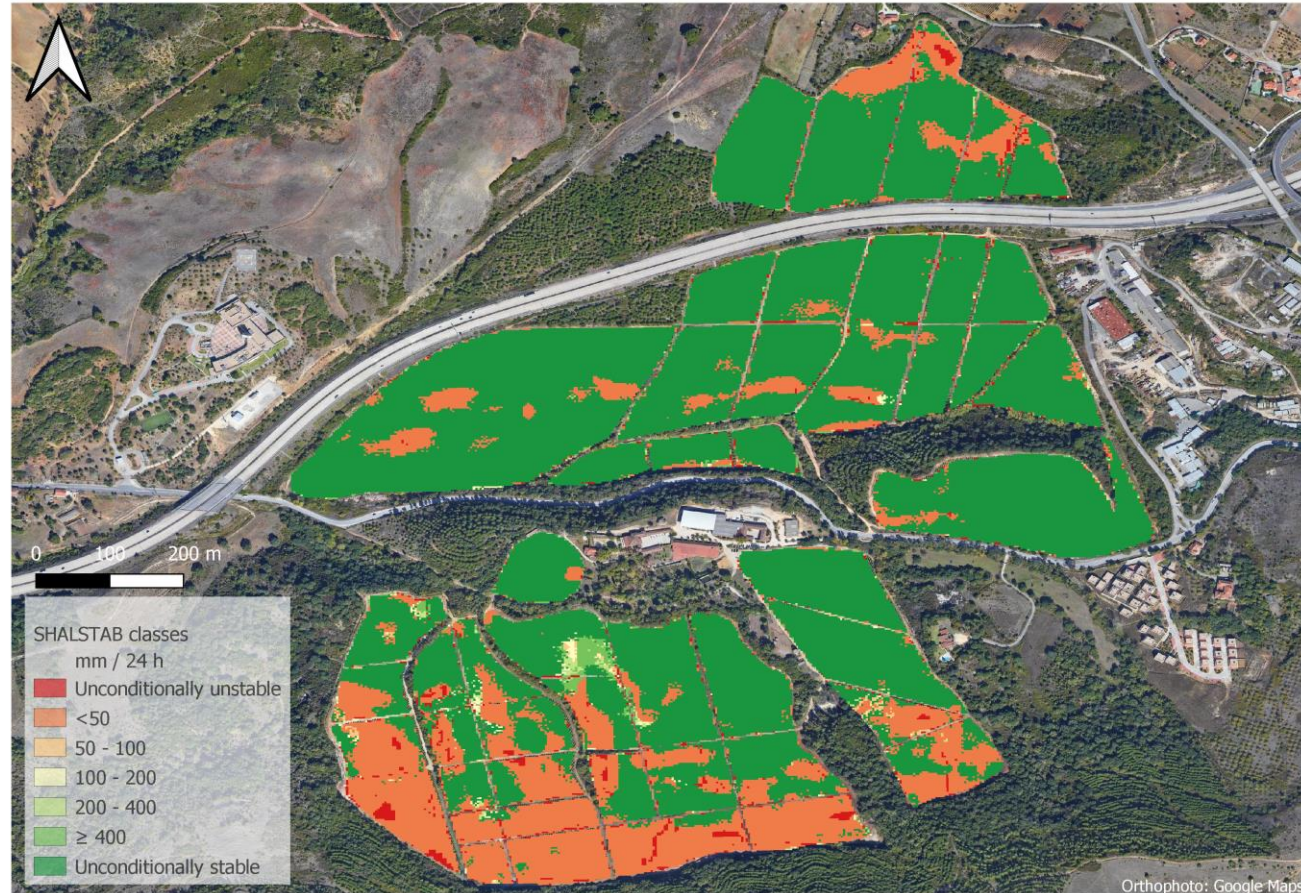
## LONG-TERM ANALYSIS OF CRITICAL AREAS



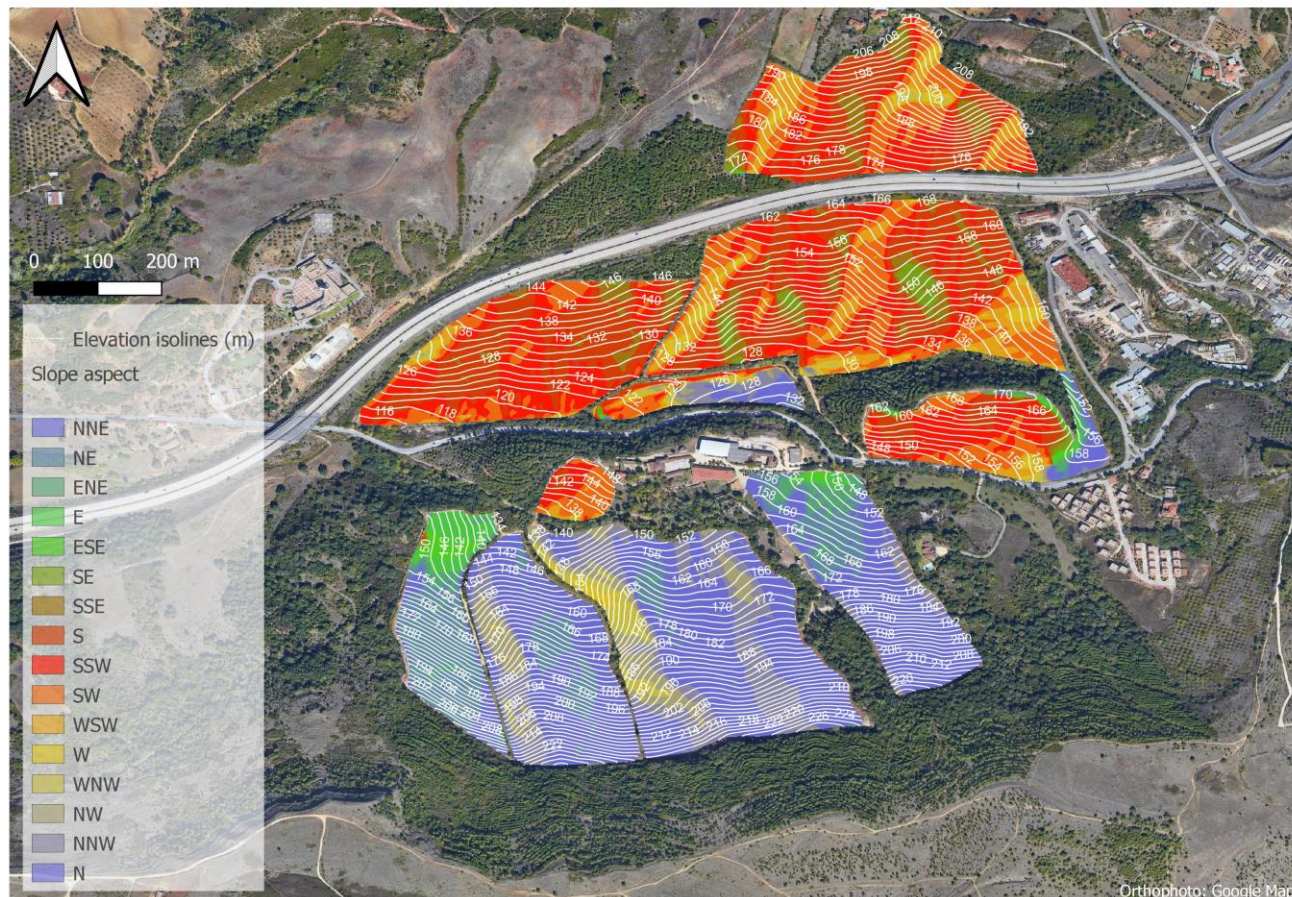


**SIMWE (SIMulate Water Erosion) model – Mitas & Mitasova, 1998**

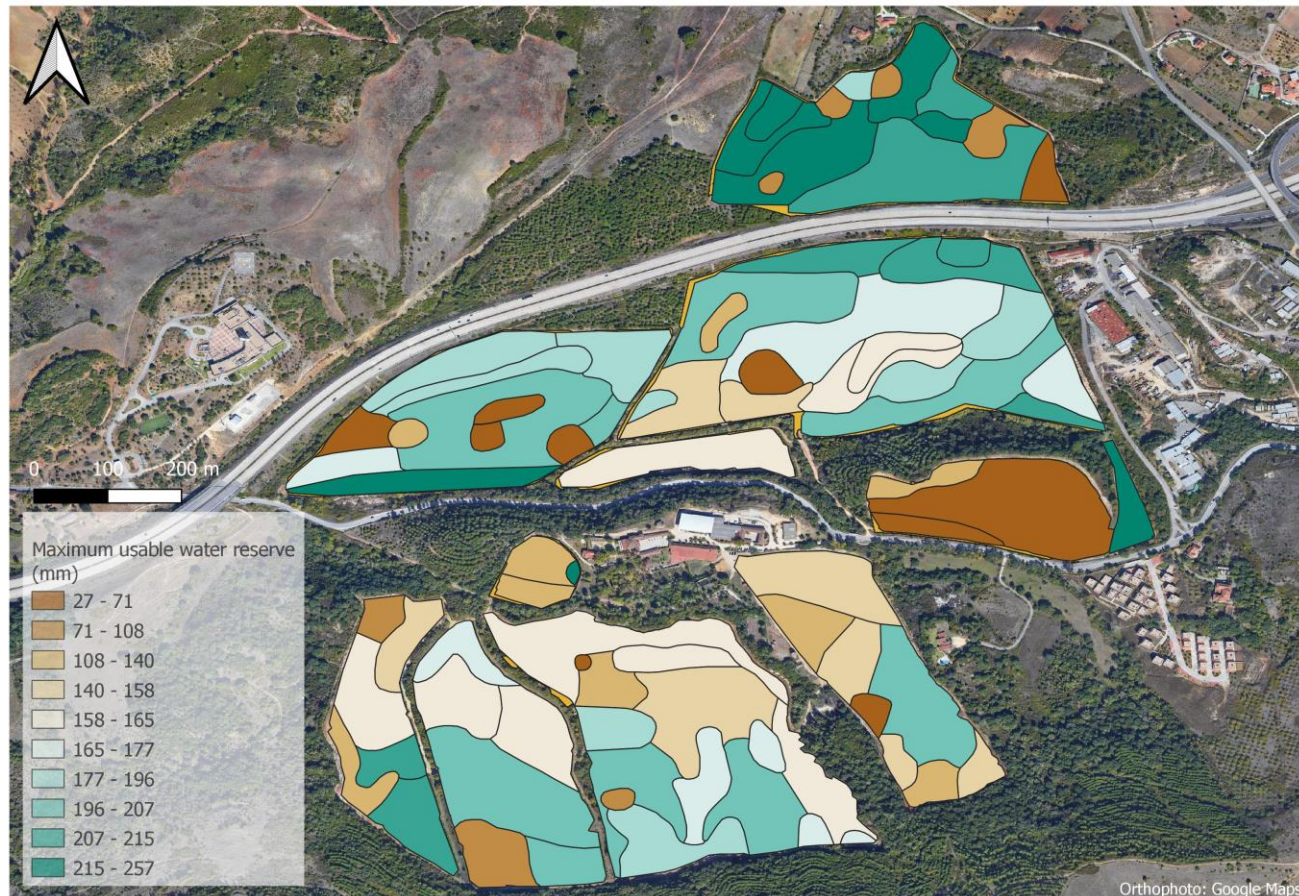
TPIw – Topographical wetness index weighted by lithological resistivity. Spatial tendency of soil water distribution as affected by topography and soil materials' compaction



**41 hectares**  
(56% of total area)  
with increased  
heat risk



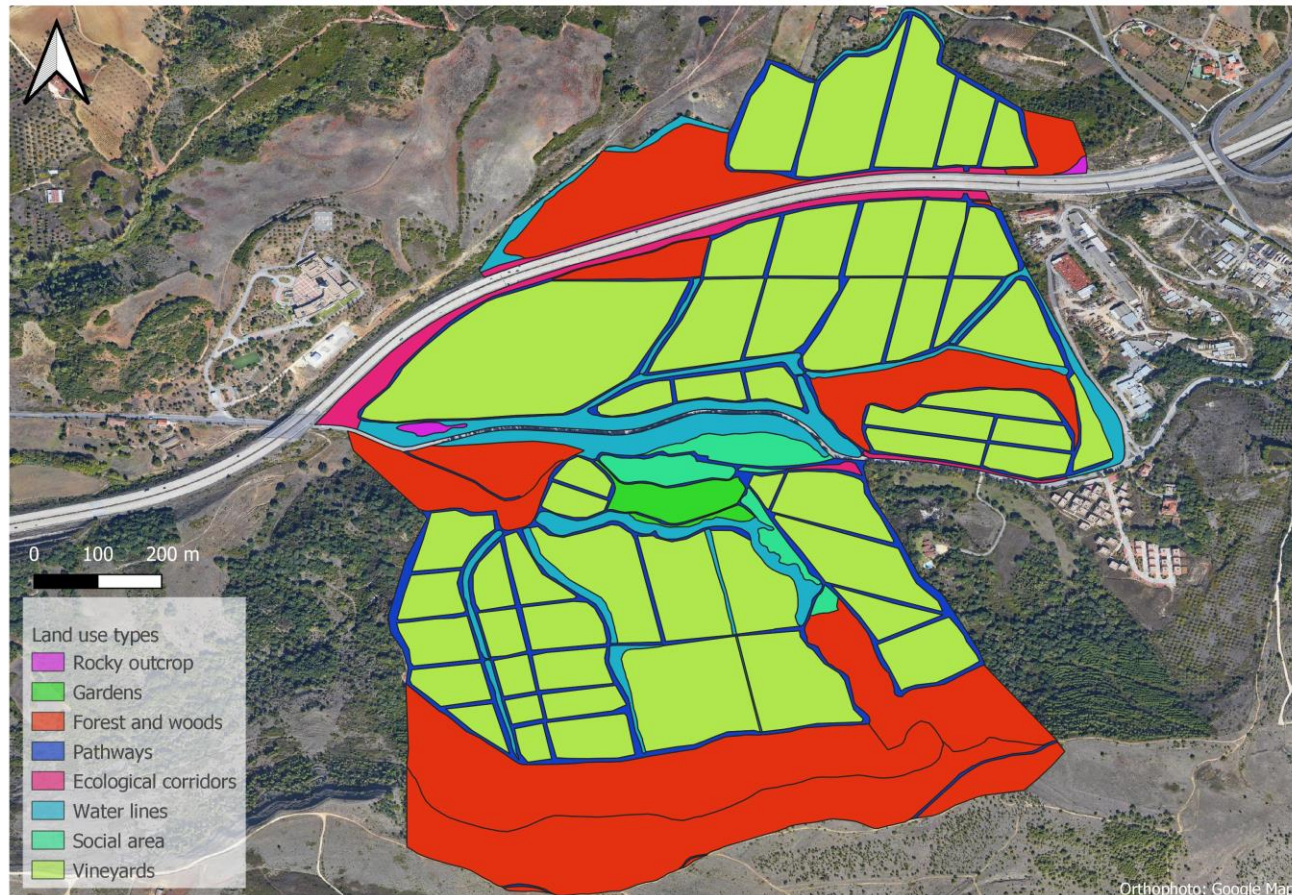
**16 hectares**  
(21% of total area)  
with MUWR above  
200 mm



**34 hectares**  
(41% of total area)  
high carbon  
sequestration  
potential

**15 hectares**  
(20% of total area)  
with high  
biodiversity value  
(last remaining patch  
of original Lisboa  
area native forest)

**11 habitats**



13 CLIMATE ACTION



15 LIFE ON LAND



## MAPPING BIODIVERSITY DEPENDENCIES AND IMPACTS



Mediterranean figwort (*Scrophularia peregrina*) – very rare status in Portugal  
P. Alves, et al. Sociedade Portuguesa de Botânica. Flora-On: Flora de Portugal Interactiva. (2022)



Geniez's wall lizard (*Podarcis virescens*) – Iberian endemism  
 Photograph by Akhil Kesarain distributed under a CC-BY 4.0 license

| TYPE<br>(DIURNAL) | SPECIES |
|-------------------|---------|
| PLANTS            | 147     |
| BUTTERFLIES       | 25      |
| DRAGONFLIES       | 8       |
| BIRDS             | 31      |
| AMPHIBIANS        | 4       |
| REPTILES          | 6       |
| MAMMALS           | 8       |

[illegible]

## WINE IS A MAJOR ROLE-MODEL IN BECOMING NATURE-POSITIVE



### THE WINE SECTOR

Global footprint

High-profile cultural product

Nature and landscape assets

Expert in consumer communication

### OPEN-SOURCE GEOMATICS

Manage sustainably and measure results

Create communication content on GMP

A toolkit to report and disclose contribution for SDGs and related policies

*Thank you*



SOGRAPE