



Dry grassland restoration in Mediterranean degraded lands: the NewLife4Drylands pilot case in Alta Murgia



Rocco Labadessa¹, Luigi Forte², Serena D'Ambrogi³, Paolo Mazzetti¹, Laura Tomassetti¹, Cristina Tarantino¹

¹National Research Council of Italy, Institute of Atmospheric Pollution Research, Rome, Italy (rocco.labadessa@cnr.it)

²Department of Biosciences, Biotechnologies and Environment and Botanical Garden Museum, University of Bari, Bari, Italy (Luigi.forte@uniba.it)

³Italian Institute for Environmental Protection and Research, Rome, Italy (serena.dambrogi@isprambiente.it)



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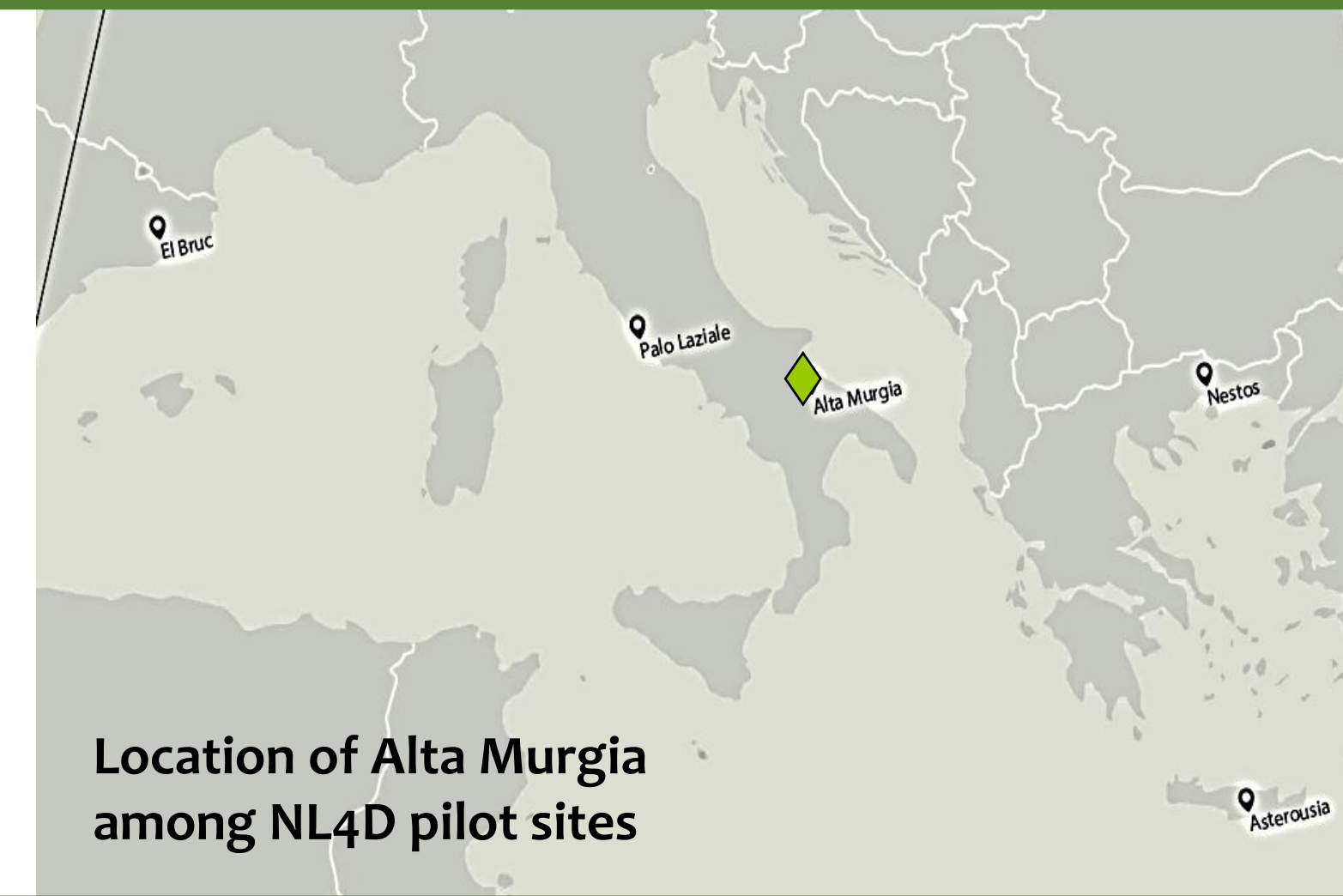


1. Overview

The need of adopting practices to restore degraded land has been stressed by the new Soil Strategy, with regard to dry ecosystems showing greater risk of desertification. Knowledge about the effectiveness, feasibility and replicability of restoration techniques is especially required in Mediterranean dry ecosystems.

2. Study site

Alta Murgia National Park (Southern Italy) is particularly subjected to land degradation processes as a result of recent and widespread activities of rock shattering for the conversion of calcareous pastures to croplands, which had caused an extensive loss of semi-natural grassland vegetation and associated ecosystem functions.



3. NewLife4Drylands project

The project aims to provide a framework for identifying sustainable solutions and monitoring of interventions in degraded lands. Within NL4D, we test a set of restoration methods applied to semi-natural dry grasslands to improve sustainable soil and biodiversity management.



4. Restoration experiment



Combinations of soil processing techniques:
A. harrowing
B. sod cutting
C. soil compression
D. no tillage



Seeds and biomass from nearby sources:
E. dry hay
F. seed-enriched hay
G. shrub seeds
H. no sowing



Soil cover:
I. jute bionet
J. no cover

14 treatment combinations x 3 replicates = 42 plots (20 x 10m) = 8,400 m²



Treatment combinations

	B+C		B+E+C+I		D+H+J
	A+C		A+F+C		B+G
	B+F+C		A+E+C+I		A+H

5. Assessing restoration effects

Monitoring changes by coupling ground-based and remote sensing approaches.

Field data:

Multi-scale vegetation relevés and soil analyses

Earth observation:

Spectral indices from High Resolution satellite imagery

The experimented approaches will provide useful information to guide the users to the identification of the most suitable nature-based solutions for the restoration of degraded lands.

