



NewLife4Drylands: Earth Observation for the assessment of NBS effectiveness to combat land degradation

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NewLife4Drylands
LIFE20 PRE/IT/000007





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NEWLIFE4DRYLANDS

*Remote sensing-oriented nature-based solutions
towards a new life for drylands*

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Remote sensing-oriented nature-based solutions towards a NEW LIFE FOR DRYLANDS

Project Information



NEWLIFE4DRYLANDS

Grant Agreement: LIFE20 PRE/IT/000007

<https://www.newlife4drylands.eu>

Start date

1 January 2021

End date

30 June 2024

Funded under

LIFE Programme

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EU contribution

€ 490 073,00

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CONSIGLIO NAZIONALE DELLE RICERCHE
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ISPRA
Istituto Superiore per la Protezione
e la Ricerca Ambientale



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OBJECTIVES



Improve vegetation cover and productivity through Nature Based Solutions in degraded or vulnerable areas where desertification processes are undergoing



Establish an approach for mid and long-term monitoring of restoration through remote sensing techniques



Provide clear, specific and costless assessment of the restoration process useful for decision-making

CASE STUDIES



Tifaracás

El Bruc

Palo Laziale

Alta Murgia

Nestos

Asterousia

METHODOLOGY

①

Characterization with Driver-Pressure-State-Impact-Response (DPSIher) Framework



②

Definition of a set of remote sensing indicators for degradation estimation



③

Design of a monitoring procedure for the assessment of NBS effectiveness



④

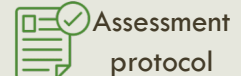
Design of a good practice protocol for remote sensing based assessment of NBS effectiveness



OUTCOMES



Monitoring model



Assessment protocol

Plan for long term monitoring for Nestos, Palo L., El Bruc, Tifaracás



Restoration plan with NBS for Alta Murgia and Asterousia



REMOTE SENSING INDICATORS FOR DEGRADATION ESTIMATION

Main challenges addressed

- Working at a local scale: Analysis of pressures and threats causing land degradation in each site (supported by the expert-knowledge; context-based approach)

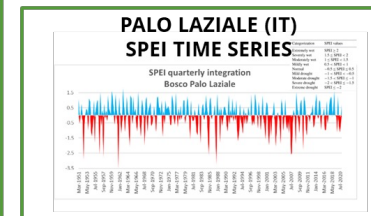
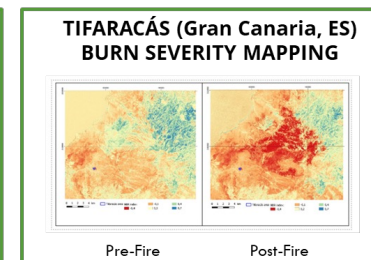
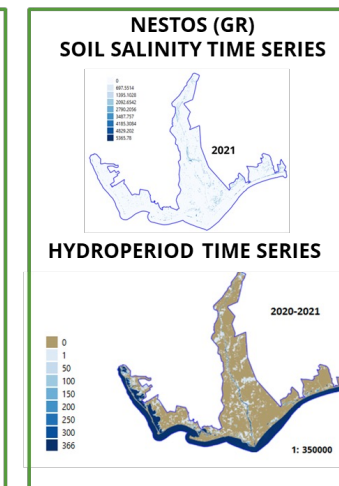
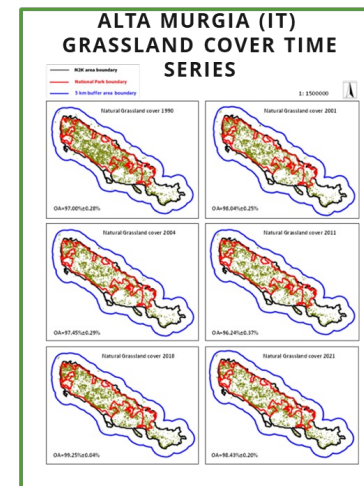
(free available products, e.g., Copernicus services at a pan-European scale results poorly reliable)

→ to meet the needs of local decision-makers

- No new research: well-known remote sensing indicators and spectral indices

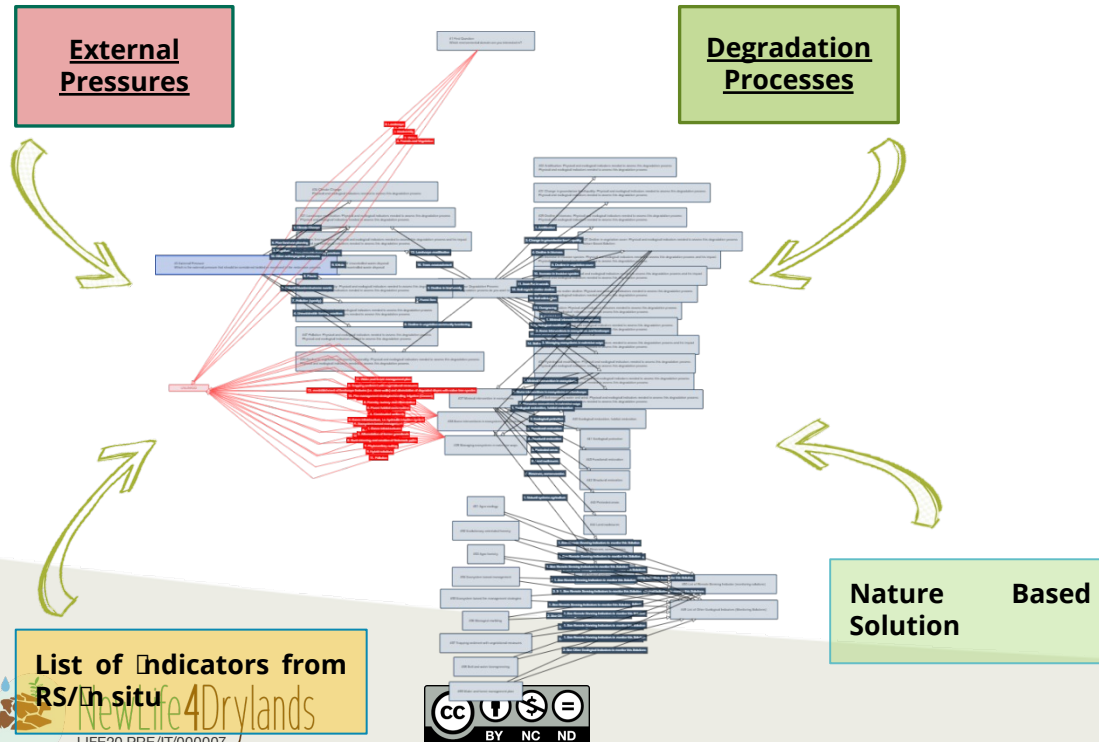
→ declined on a local scale for SDG 15.3.1 (UNCCD)

- Free-available open satellite data: as much as possible.

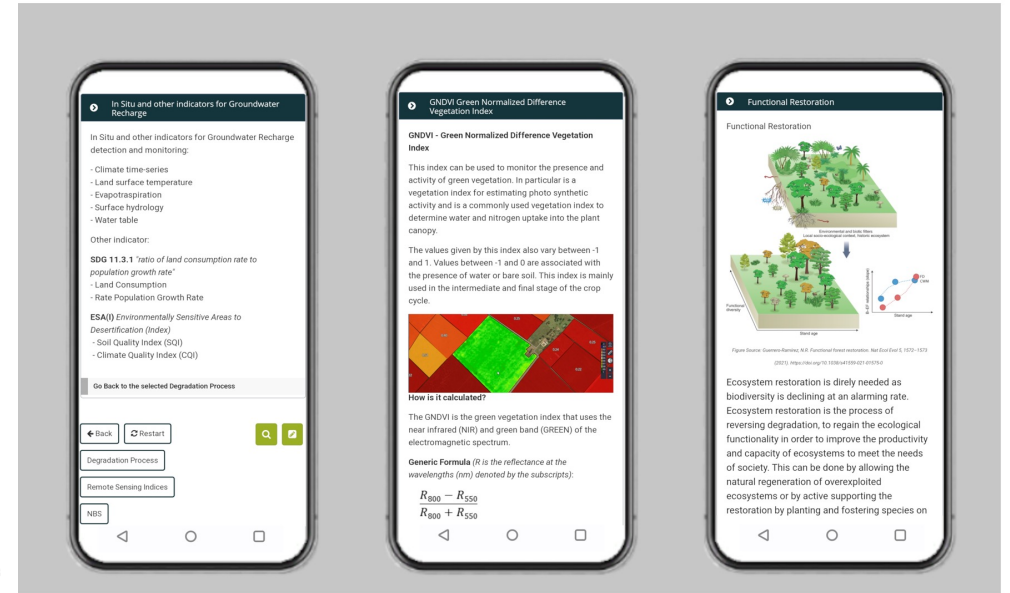


THE NEWLIFE4DRYLANDS MODEL

DECISION SUPPORT MODEL



END-USER SIDE Visual scheme connecting items involved in the decision making processes



Path Summary and Final Report

Node + Question/Answer	Button Clicked	Time Spent (min:sec)
#3: Which is the external pressure that should be considered tackled or monitored in the restoration process	Climate Change	0:05
#34: Physical and ecological indicators needed to assess this degradation process	Try another process	0:02
#2: which degradation process do you want to tackle?	Soil erosion by water and wind	0:03
#19: Physical and ecological indicators needed to assess this degradation process	Some interventions in ecosystems and landscape	0:03

Nature Based Solution fit for the end-user case

Managing ecosystems in extensive ways

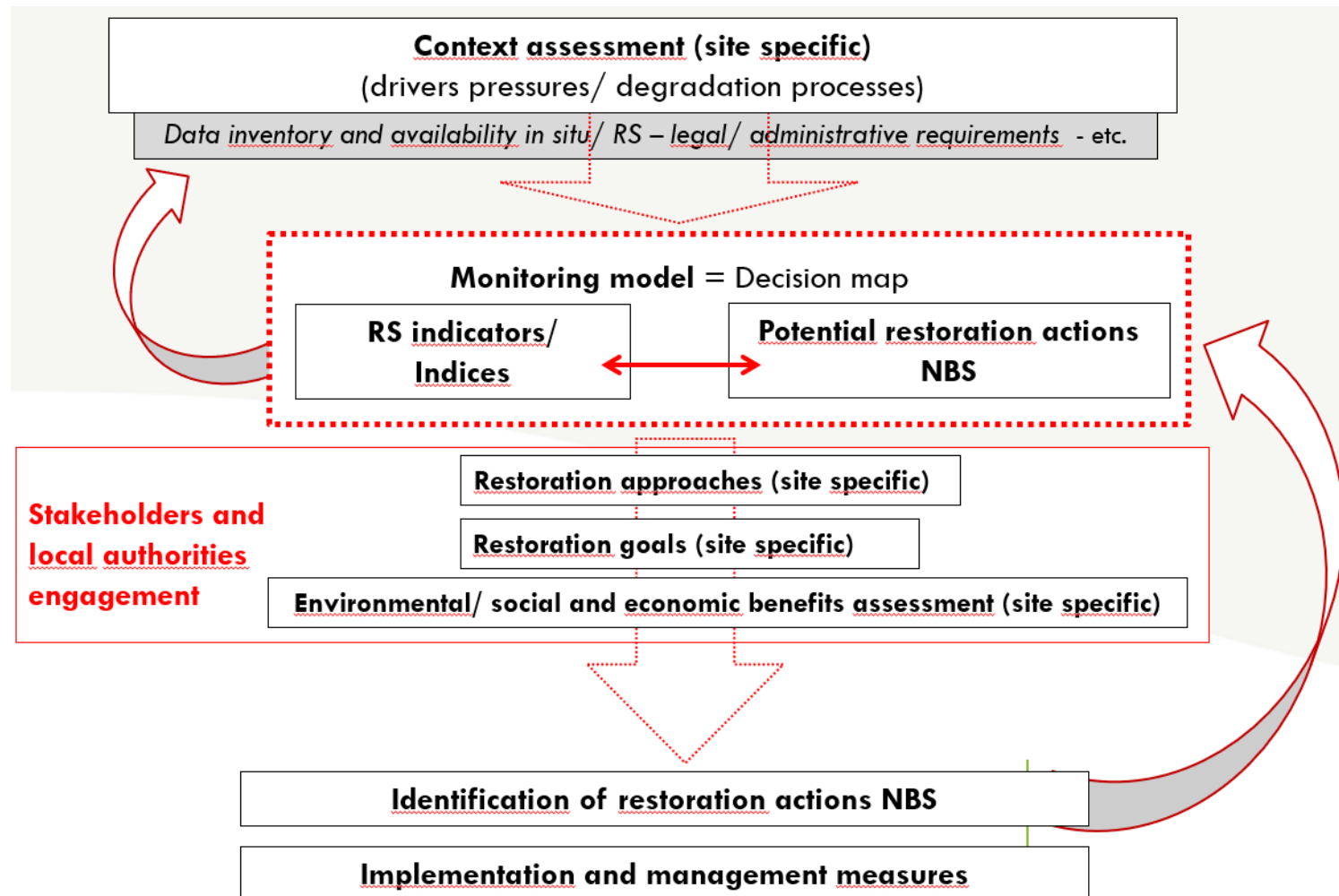
- Green infrastructures
- Afforestation of former grasslands
- Constructed wetlands
- Bush trimming and creation of firebreak paths
- Forest habitat conservation
- Phytosanitary cutting
- Forestry nursery and afforestation
- Hybrid solutions
- Fire management strategies/seeding irrigation (Cocoon)
- Land enclosures/seeding irrigation (Cocoon)
- reestablishment of landscape features (i.e. stone walls) and afforestation of degraded slopes with native tree species

Bush trimming and creation
Forest habitat conservation
Phytosanitary cutting
Forestry nursery and afforestation

THE NEWLIFE4DRYLANDS PROTOCOL

The protocol will set operational standards for preparing drylands restoration plan, supporting application of NBS through adaptive management.

The identification of specific measures for drylands ecological restoration and the information for monitor the effectiveness of these measures will be achieved using A3 indicator-based monitoring model built on RS data.



NEXT ACTIONS AND FUTURE WORK

To bring the NewLife4Drylands experience and outcomes to GEO

- Addressing multiscale issues in LDN (local to national to regional to global)
- Through the EuroGEO LC/LU Action Group at the European level
- Through GEO LDN, GEO EO4EA,... at the global level

THANK YOU!

MORE INFO



NEWLIFE4DRYLANDS

[HTTPS://WWW.NEWLIFE4DRYLANDS.EU/](https://www.newlife4drylands.eu/)



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