The contribution of the LIFE programme to soil

Flagship projects, project results and impacts

Michel Quicheron – Soil Platform Meeting 10 April 2024

Outline

- Soil topics
- Flagship projects
- Main outcomes of Ex-Post Study
- KPIs on projects related to soil
- LIFE publications on soil
- 2024 LIFE calls

Topics of LIFE projects

- **Soil and agriculture**: examples of sustainable agricultural practices to prevent soil erosion and loss of fertility, new bio-products replacing fertilisers and pesticides.
- **Soil contamination**: methodologies and technologies (prototypes) for land reclamation; innovative bio-remediation systems; tools and methods to monitor the soil health.
- **Soil and climate change**: best practices to improve CO_2 emissions and carbon storage in soils through the increase of organic carbon in soils; methodologies and tools to monitor soil-related indicators, including soil biodiversity; initiatives to mitigate climate change risks, i.e fires, floods and droughts.
- **Land uptake** (very few projects): demo interventions to reduce soil sealing in urban context; urban planning methodologies to prevent or reduce land uptake.

LIFE17 GIE/IT/000477

soil4life
What is essential is invisible to the eye

- Successful governance project focusing on land use: promote sustainable use of the soil as a strategic, limited and non-renewable resource
- Some results:
  - Drafted a **White Paper for Soil**, addressed to relevant government and ministry actors to promote more sustainable management of urban soils
  - Set up **15 regional observatories on land uptake**, drafted and promoted the adoption of a Charter of Principles for sustainable soil use
  - Drafted and launched the international "Soil Manifesto" in collaboration with volunteers' associations.
  - Established a **special office for the prevention of land uptake** in the Municipality of **Rome**, designed operative guidelines to improve soil permeability and counteract the soil sealing, and adopted the municipal plan for the permeability of urban areas.

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LIFE ReSoil: A new life to toxic soil

- Due to centuries of mining, soil pollution is a severe issue in Slovenia’s Upper Mežica Valley. The LIFE ReSoil project showcased an innovative and environmentally friendly technology for soil remediation that can potentially mitigate the impacts of soil pollution on public health and the environment.
- Results
  - Their soil washing method removed toxic metals from the soil.
  - The remediated soil was reused as a plant substrate.
  - The project team scaled up the technology in a pilot plant that treated up to six tonnes of contaminated soil daily.
  - They demonstrated that the remediated soil could be safely used for growing vegetables.
  - The project also created new permanent jobs for the local population and contributed to the region’s socio-economic development.

LIFE HelpSoil: Giving soil a helping hand

- Giving soil a helping hand Improving soil organic content can enhance fertility, nutrient absorption, and resilience to environmental stress, erosion, and pollution. Better soil management can increase the resilience of terrestrial ecosystems to climate change. The LIFE HelpSoil project conducted a threeyear experiment on 20 farms in northern Italy to test soil conservation practices.
- Results
- Various techniques were implemented to encourage soil biodiversity, including no-till sowing, sub-surface irrigation, and natural fertilisers.
- This led to more efficient use of irrigation water, fertilisers, and pesticides.
- Their work supported climate change mitigation through CO_2 sequestration, reduced fossil fuel consumption, and decreased greenhouse gases and ammonia emissions.
- The primary sustainable agricultural practices are still used in 19 of the original 20 demo farms.
- The project's soil conservation practices were included in the region's rural development plan.

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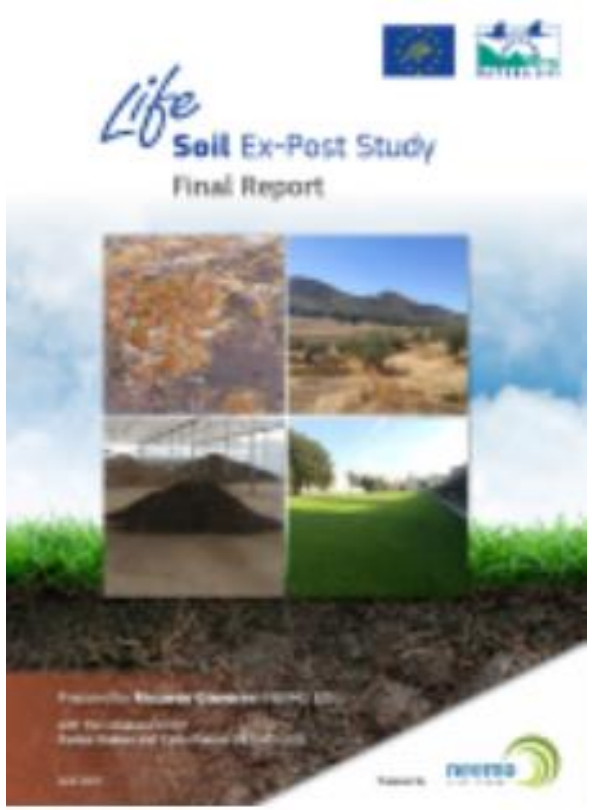
EUTROMED: Stopping pollution in its tracks

- Excess nitrogen in water causes eutrophication, which chokes water bodies, cuts off the oxygen supply to fish, and blocks light from reaching aquatic plants, depleting biodiversity. In Granada, Spain, the EUTROMED project team created an affordable solution to the problem, which has many benefits for the environment, economy, and society.

Results

- The team developed an inexpensive technology that uses vegetable filters to intercept and retain pollutants before they reach surface water. The filters are made from local materials, are easy to install, and do not harm the soil.
- 29 local farmers used the filters and found them to be effective, retaining 60% of nitrates, 50% of phosphates, and 20% of dissolved organic carbon.
- The filters also increased biomass, reduced soil loss, and did not harm the soil's microbial communities.
- The vegetative cover of land is now extensive among olive farmers in the area, and its solutions have been replicated successfully by two other local projects.

Results from the LIFE Ex-Post Study (2023)



Purpose of the study: assess how the LIFE programme contributes to soil issues through:

- Sustainability of the projects results
- Impacts of the proposed systems/methods on various soil themes and on the relevant sectors

Methodology

Selection of **20 projects** (eighteen LIFE+ and two 2014-2020) from 9 EU countries.

Specifically designed to address soil issues and closed by at lest 2 years, but on average by 6 years.

Sorted out in 5 main **sectors**: agriculture, land management, remediation, urban planning and monitoring.

Project	Acronym	Sector	Soil issues
LIFE10 ENV/BE/000699	DEMETER	Agriculture	Organic matter, fertility
LIFE10 ENV/ES/000471	Crops for better soil	Agriculture	Organic matter, compaction, fertility
LIFE10 ENV/ES/000511	EUTROMED	Agriculture	Diffuse contamination, erosion
LIFE10 ENV/PL/000661	Biorewit	Agriculture	Organic matter, diffuse contamination
LIFE12 ENV/ES/000647	LIFE+Farms for the future	Agriculture	Organic matter
LIFE12 ENV/IT/000578	Help SOIL	Agriculture	Organic matter, fertility
LIFE12 ENV/IT/000719	CarbOnFarm	Agriculture	Organic matter, fertility
LIFE07 ENV/GR/000278	Soil Sustainability (So.S)	Land management	Erosion, fertility, local contamination
LIFE10 NAT/ES/000579	SOIL-Montana	Land management	Monitoring, organic matter, fertility, biodiversity
LIFE11 ENV/IT/000113	BIOREM	Land management	Degradation, erosion, fertility
LIFE13 BIO/IT/000282	SelPiBioLife	Land management	Biodiversity
LIFE14 CCM/LV/001103	LIFE REstore	Land management	Peatland conservation
LIFE08 ENV/H/000292	MEDAPHON	Monitoring	Biodiversity
LIFE09 ENV/DK/000368	NorthPestClean	Remediation	Local contamination
LIFE10 ENV/IT/000400	New LIFE	Remediation	Compaction, degradation
LIFE11 ENV/ES/000505	BIOXISOIL	Remediation	Local contamination
LIFE12 ENV/ES/000761	DISCOVERED LIFE	Remediation	Local contamination
LIFE12 ENV/SI/000969	LIFE ReSoil	Remediation	Local contamination
LIFE13 ENV/IT/001218	LIFE SAM4CP	Urban planning	Sealing, land uptake
LIFE15 ENV/IT/000225	SOS4LIFE	Urban planning	Sealing, land uptake

Successful findings (1)

Sustainability of project results in the agricultural sector is ensured by networks of various local stakeholders that play a key role in the value chain.

Related case study **LIFE12 ENV/IT/000578 HELPSOIL**

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Successful findings (2)

Policy impacts at large-scale can be fully accomplished when the soil-related interventions are enforced by regional or national regulations.

Related case study **LIFE15 ENV/IT/000225 S.O.S.4 LIFE**

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Successful findings (3)

Various projects developed **technologies** or systems for soil remediation that reached the Technically proven" or "Established" stage of development.

Related case study **LIFE10 ENV/IT/000400 NEW LIFE**

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Common constraints

- **Environmental impacts** in after-LIFE period are rather mild.
- Not all the projects are fully aware of the contribution of soil to mitigate **climate changes** issues.
- Continuation of soil **monitoring** activities only in small areas.
- On the **economic** side, very few projects generated additional revenues and jobs through project activities.

Recommendations for LIFE Programme

- More **LIFE projects** specifically devoted to soils

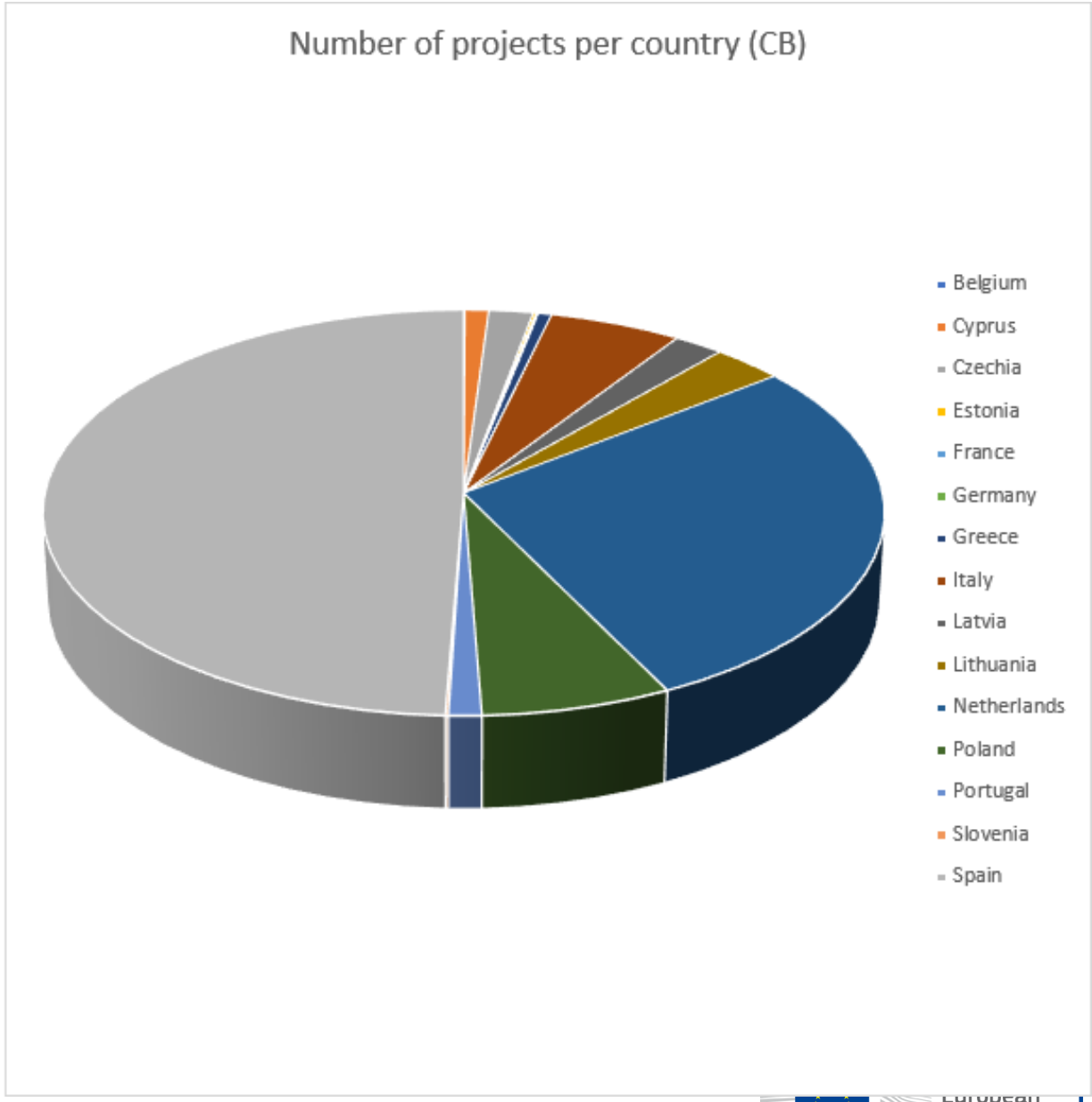
- More initiatives and actions devoted to **raise the awareness** on soil issues.

- Often **soil aspects** are not adequately covered in the activities developed by the LIFE projects dealing primarily with other environmental aspects.

- The next soil-related initiatives of the LIFE programme should be more focused on **specific sectors and/or topics.**

KPIs

- The LIFE programme uses impact indicators and here are some results from them, for projects from 2014.



KPIs

Row Labels	Sum of Estimated Impact (Baseline)	Sum of Project EU Contribution	Count of Project Reference
Belgium	-0.30	8,930,235.00	5
Cyprus	-6.00	1,962,504.00	2
Czechia	-11.16	8,182,085.00	4
Estonia	-0.76	22,100,633.00	3
France	-0.43	12,013,259.00	2
Germany	-0.08	839,447.00	1
Greece	-3.37	8,286,191.00	5
Italy	-33.50	43,207,219.52	31
Latvia	-12.60	5,635,674.00	1
Lithuania	-18.05	4,611,850.00	2
Netherlands	-169.21	69,461,962.00	15
Poland	-40.00	21,566,152.17	1
Portugal	-6.92	14,898,720.93	11
Slovenia	-0.63	2,111,890.00	2
Spain	-295.45	84,791,583.51	60
Grand Total	-598.46	308,599,406.13	145

KPIs

Row Labels	Sum of Estimated Impact (Baseline)
Key Performance Indicators Hierarchy (MAWP 2021-2024) - beta	-92.23
Desertification	-5.00
Local contamination	-0.78
Other or multiple types - please explain in the comment box.	-7.47
Soil biodiversity	-19.20
Soil erosion	-11.08
Soil organic matter	-48.70
Key Performance Indicators Hierarchy 2016-2017	-506.23
Desertification	-1.10
Diffuse contamination	-76.98
Local contamination	-7.91
Soil biodiversity	-124.93
Soil compaction	-0.80
Soil erosion	-15.59
Soil organic matter	-276.91
Soil salination	-1.00
Soil sealing	-1.02
Grand Total	-598.46

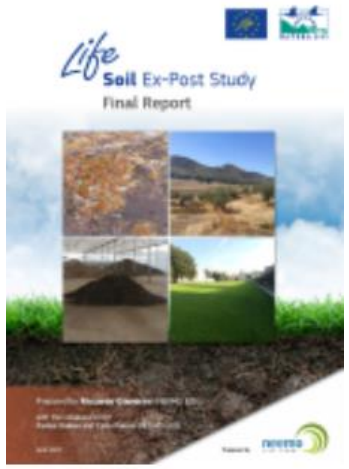
Publications

[Supersoil: How LIFE protects what lies beneath our feet Factsheet](#)

(2023)

[LIFE Ex-post study](#)

(2023)



[LIFE and soil protection](#)

(2014)

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2024 LIFE Calls

- Opening of 2024 call 18 April 2024
- Info Days from 23 to 26 April
- Deadline for most calls: 19 September 2024.
- Info on
- https://cinea.ec.europa.eu/programmes/life/2024-life-calls-proposals_en

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Thank you

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