EU4GREEN

COST ESTIMATION AND SUPPORT TO IDENTIFICATION OF FUNDING OPPORTUNITIES FOR PARTICIPATION IN LUCAS SOIL SURVEY

Deliverable 3 of WP1-11 Depollution Soil: Monitoring of diffuse soil pollution

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ABBREVIATIONS

ALB	Albania
BIH	Bosnia and Herzegovina
CINEA	European Climate, Infrastructure and Environment Executive Agency
EC	European Commission
EIB	European Investment Bank
EPA	Environmental Protection Agency
EFSD+	European Fund for Sustainable Development Plus
GCF	Green Climate Fund
GEF	Global Environment Facility
IPA III	Instrument for Pre-accession Assistance
JRC	Joint Research Centre of the European Commission
LUCAS	Land Use and Coverage Area frame Survey
MKD	North Macedonia
MNE	Montenegro
NIPAC	National IPA Coordinator
SML	EU Soil Monitoring and Resilience Law
SRB	Serbia
UNDP	United Nations Development Programme
WB	Western Balkans
WB6	Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia, Serbia
WBIF	Western Balkans Investment Framework
WP	Work package
XXK	Kosovo

1. EXECUTIVE SUMMARY

The environmental governance landscape of the Western Balkans (WB6) is undergoing a transformative period as Albania, Bosnia and Herzegovina, Kosovo*, Montenegro, North Macedonia, and Serbia seek closer alignment with the European Union's environmental acquis. Central to this alignment is the protection and sustainable management of soil resources, a sector that has historically suffered from fragmented monitoring and data scarcity (6). The enactment of Directive (EU) 2025/2360 on Soil Monitoring and Resilience, commonly known as the EU Soil Monitoring Law (SML) (4), on December 16, 2025, represents a paradigm shift in how soil health is assessed across Europe. For the WB6, participating in the upcoming 2027 Land Use/Cover Area frame statistical Survey (LUCAS) Soil module would be no longer merely a scientific exercise but a strategic step to establish a baseline for soil assessment and protection that helps to become compliant with the statistical and methodological requirements of the SML soon.

This report provides an analysis of the budgetary requirements and funding pathways for the WB6 economies to participate in the 2027 LUCAS Soil survey. The 2027 module should represent a significant technical advancement over the 2015 extension, which sampled 1,015 points across five of the six economies (1). The next iteration requires rigorous field protocols, including increased sampling depths, repeated bulk density measurements to assess compaction and carbon stocks, and the collection of fresh samples for DNA-based biodiversity analysis. Furthermore, the inclusion of Kosovo is identified as a critical priority to ensure regional data continuity and to address the current lack of a harmonized soil baseline in that economy. In relation to depollution soil, it is crucial that the samples in the 2027 LUCAS Soil survey will be analysed for contents of contaminants to assess the status of soil pollution and compare it with related soil monitoring activities carried out in the economies so far.

The cost estimation provided herein breaks down expenses related to personnel, specialized equipment, vehicle logistics, and the sophisticated distribution chain required to transport samples to the Joint Research Centre (JRC) in Ispra, Italy. Total estimated costs of approximately 370,000 EUR reflect the transition from basic soil characterization to functional soil monitoring, accounting for the higher resource intensity of the 2027 protocol of the LUCAS Soil survey (3).

Funding strategies are analysed across four distinct tiers: EU accession instruments, dedicated EU monitoring funds, international climate and adaptation grants, and national environmental protection funds. The primary financial engine identified is the Instrument for Pre-accession Assistance (IPA III), supplemented by the €6 billion Reform and Growth Facility for the Western Balkans. Horizon Europe's Mission 'A Soil Deal for Europe' offers additional avenues for funding through living labs and innovative monitoring research. International support via the Global Environment Facility (GEF) (20) and the Adaptation Fund (7) provides opportunities to link soil health with climate resilience objectives. National Eco-Funds

* The designation of Kosovo is without prejudice to any positions on status and is in line with UNSCR 1244/1999 and the ICJ Opinion on the Kosovo declaration of independence.

remain essential for providing the necessary co-financing and ensuring the long-term sustainability of the monitoring infrastructure. Furthermore, the WB6 should explore public-private partnerships, particularly with the agricultural and industrial sectors, to co-finance monitoring in areas where they have a significant environmental footprint.

Ultimately, this report serves as a roadmap for WB6 policymakers. It argues that a proactive, regionally coordinated approach to the 2027 LUCAS survey is the most efficient path toward meeting the 2031 mandatory reporting deadlines of the EU Soil Monitoring Law, thereby mitigating risks to the EU accession process and enhancing the region's resilience to the ongoing threats of erosion, pollution, and climate change.

2. COST ESTIMATION OF LUCAS SOIL MONITORING IN WB6

2.1. Number and distribution of LUCAS Soil points in WB6

The design of the 2027 LUCAS Soil monitoring grid for the Western Balkans must achieve two primary objectives: maintaining temporal continuity with the 2015 baseline and expanding coverage to achieve the statistical rigor mandated by the EU Soil Monitoring Law (SML) (4). The SML requires that monitoring designs provide an estimation of the area of degraded soils with an uncertainty of not more than 5% at the Soil Unit level. This requirement necessitates a more refined and potentially denser sampling strategy than the one employed during the 2015 extension, which served as a regional statistical snapshot rather than a high-resolution monitoring network.

In 2015, the LUCAS Soil extension successfully covered 1,015 points across five economies, excluding Kosovo (1). To monitor changes in soil organic carbon (SOC), nutrient status, and physical degradation, it is necessary that these 1,015 points are resampled in 2027. This resampling allows for the calculation of trends, which is essential for determining the effectiveness of sustainable land management practices and for fulfilling reporting requirements under the Land Use, Land Use Change, and Forestry (LULUCF) framework.

For the 2027 campaign, the inclusion of Kosovo is a technical prerequisite for regional harmonization. Based on the 2015 sampling densities in neighbouring economies (1) and Kosovo's land area and use patterns, it is estimated that 204 points are required to establish a baseline in Kosovo that is statistically comparable. This brings the total regional target to at least 1,335 points. However, to meet the 5% uncertainty threshold required by the SML, geostatistical modelling may suggest further densification in pedologically heterogeneous or high-risk areas.

The distribution of these points reflects the complex geography of the region, ranging from the Pannonian Valley in northern Serbia to the high-altitude Dinaric Alps traversing Albania, Montenegro, and Bosnia and Herzegovina. In 2015, over half of the points were located below 500 meters, but the 2027 design must ensure that high-altitude ecosystems are better represented, as these areas are particularly vulnerable to climate-induced erosion and carbon loss. The geostatistical stratification for 2027 should utilize updated land cover data (CORINE or Copernicus Land Monitoring Service) and Soil Unit delineations based on soil type, climate, and land use homogeneity.

Furthermore, to reflect the situation on soil pollution in WB6 (2) we recommend the 2027 campaign should account for oversampling in high-risk zones, such as areas adjacent to historical mining complexes in Kosovo and Bosnia and Herzegovina, or intensive agricultural regions in Serbia and Albania where diffuse pollution from nitrates and pesticides is a primary concern. The distribution is therefore not merely a function of area but a strategic alignment with the seven soil threats covered by the EU Soil Monitoring Law (4): erosion,

loss of organic matter, contamination, compaction, salinisation, loss of biodiversity, and soil sealing.

Table 1: Number and distribution of LUCAS Soil points in WB6 (2027 based on UBA expert opinion)

Economy	2015 Baseline Points	2027 Proposed Minimum Points	Land Cover & Topographic Rationale
Albania	120	175	High representation of mountainous and coastal zones; previous underrepresentation of areas >1500m
Bosnia & Herzegovina	243	243	Addressing institutional fragmentation and legacy mining sites through dense sampling
Kosovo	0	204	Initial harmonized baseline; focus on agricultural basins and industrial zones
Montenegro	120	120	Dominant forest and semi-natural cover (79%); focus on woodland protocols
North Macedonia	120	120	Unique Vertisol (Smonitsa) units and climate-vulnerable agricultural lands
Serbia	412	473	Leveraging the largest regional dataset for trend analysis in intensive agriculture
Total WB6	1 015	1 335	Unified regional baseline for SML alignment

2.2. Total costs for LUCAS Soil 2027 participation

The comprehensive budget for the WB6 participation in the 2027 LUCAS Soil survey comprises the field operations, equipment procurement, and international logistics. This estimation may be helpful for drafting funding proposals for IPA III or other EU funds or international donors.

The total estimated investment of approx. 370,000 EUR across the WB6 region (approx. 276 EUR per point) is significant but represents a highly efficient cost-benefit ratio when compared to the potential costs of non-compliance with EU environmental standards. For instance, a lack of standardized soil data could delay accession negotiations for Chapter 27 (Environment and Climate Change) and consequently potentially costing economies much more in lost pre-accession grants and developmental delays. So the application of the methodology and gaining soil monitoring data will be important also as future EU Member States. Ensuring a congruent and harmonized methodology from the start of the implementation of the EU Soil Monitoring Law [2] is well invested budget to receive sound information for soil management practices towards healthy soils.

Table 2: Estimated total costs (EUR) for WB6, EU4Green assumptions

Budget item	WB6 (1,335 Points)	Albania (175)	BiH (243)	Kosovo (204)	Montenegro (120)	North Maced. (120)	Serbia (473)
Personnel/Labor	142 439	14 613	25 394	17 595	12 630	11 960	60 248
Vehicle/Fuel	33 375	4 375	6 075	5 100	3 000	3 000	11 825
Equipment	141 644	18 568	25 782	21 644	12 732	12 732	50 185
Logistics/Distr.	16 688	2 188	3 038	2 550	1 500	1 500	5 913
SUBTOTAL	335 480	39 918	60 531	47 093	29 982	29 312	128 644
Contingency (10%)	33 548	3 992	6 053	4 709	2 998	2 931	12 864
TOTAL (EUR)	**369 028**	**43 909**	**66 584**	**51 803**	**32 980**	**32 243**	**141 509**

In the following chapters the total costs are broken down regarding each budget item.

2.3. Cost estimation of soil sampling in the field

Field sampling for the 2027 LUCAS Soil module is a high-intensity operation that requires specialized personnel, robust equipment, and significant logistical planning. Unlike the standard 0-20 cm topsoil sampling of 2015 (5), the 2027 protocol (3) is designed to satisfy the advanced descriptors of the EU Soil Monitoring Law. This transition increases the time and labor required per point by an estimated 40-60%, depending on the land cover type.

2.3.1. Technical requirements of the LUCAS Soil 2027 protocol

For all non-woodland land covers, the LUCAS Soil 2027 protocol (3) mandates the collection of a composite sample consisting of 5 subsamples taken to a depth of 30 cm using a soil auger. Crucially, the protocol includes the measurement of physical parameters through undisturbed core samples. This involves taking 3 bulk density samples from the topsoil (0-10 cm) and, for the first time, 3 bulk density samples from the subsoil (10-20, 20-30, 30-40 cm). Collecting subsoil cores requires digging a substantial pit (often 40-50 cm deep) to allow the horizontal insertion of the bulk density rings, a process that is labor-intensive in the compacted or stony soils common in the Western Balkans.

In woodlands, the protocol is even more complex. Surveyors must collect a litter layer sample and an organic layer sample (if the layer is 2-30 cm thick) using a 20x20 cm quadrat frame. The depth and weight of these layers must be recorded in the field using fishhook scales, and a mineral soil sample must be taken to 30 cm. This woodland protocol is very relevant for Montenegro and Bosnia and Herzegovina, where forest cover is extensive, but it adds significantly to the equipment list and time spent per site in all economies of WB6.

2.3.2. Personnel costs

Field teams should consist of at least one senior soil scientist or agronomist and one field technician to ensure protocol adherence, GPS accuracy, and safe operation in remote areas.

Based on a web search labor market data for environmental specialists and technicians in the WB6 economies in 2025 daily costs including daily food allowance (regional average) and employer contribution to salaries were estimated. For the estimation 21 working days per month and an inflation of 5% from 2025 to 2027 were assumed.

Table 3: Estimated personnel costs for field work per day in Euro based on web search

Category	Item	**ALB**	**BiH**	**XKX**	**MNE**	**MKD**	**SRB**
Salary/month	Scientist	700	1000	800	1000	800	1200
	Tecnician	500	800	600	800	600	900
Employer contribution	Rate in %	0,17	0,06	0,05	0,07	0,28	0,17
Cost/day for employer	Scientist	41	53	42	54	51	70
	Tecnician	29	42	32	43	38	53
	Daily food allowance	30	30	30	30	30	30
	Total	100	125	104	126	120	153
Costs per point	Personnel costs	**84**	**105**	**86**	**105**	**100**	**127**

Given the complexity of the 2027 protocol - particularly the subsoil bulk density and woodland quadrat sampling - it is estimated that a sampling team can complete an average of 1.2 points per day, accounting for travel time between georeferenced points in difficult terrain and training to comply with the 2027 sampling protocol. This results in labor cost of **approximately 84-124 EUR per sampling point** depending on the economy (lowest in Albania, highest in Serbia).

2.3.3. Travel and Transport

The Western Balkans' topography, characterized by the Dinaric Arc, necessitates the use of 4x4 vehicles. In relation to travel and transport it is assumed that the institutions carrying out the sampling are equipped with suitable vehicles. If this is not the case rental rates for mid-range SUVs (e.g. Dacia Duster or Toyota Hilux) in 2027 are projected at 70-100 EUR per day, including comprehensive insurance and cross-border permits where applicable. Fuel costs remain a significant variable; current prices in the region average 1.65 EUR per liter, and mountainous terrain typically increases consumption to 12-14 liters per 100 km. Assuming an average of 120 km of travel per point, the transport cost (rental + fuel) is estimated at 25 EUR per point or 110 EUR per point in case rental costs apply.

2.3.4. Equipment and Consumables

Participation in the 2027 LUCAS survey requires capital investment in high-quality sampling tools, primarily from specialized manufacturers. The 2027 protocol’s emphasis on subsoil bulk density and biodiversity requires more than basic spades.

Table 4: Estimated costs of equipment and consumables based on web search

Item	Unit cost (EUR)	Amortization/Usage	Cost per point (EUR)
Soil auger type Edelman	300	500 points lifespan	0.60
Bulk density rings & lids	15	6 rings each with 2 lids per point	90.00
Fishhook scale & 20x20 cm frame	250	500 points lifespan	0.50
Cold storage (polystyrene boxes + ice)	10	per point (soil biodiversity)	10.00
Cleaning agents (alcohol/water/gloves)	5	per point	5.00
Total equipment costs			**106.10**

The costs estimated for equipment and consumables is 106.10 EUR per point.

2.4. Cost estimation of soil sample distribution to centralized LUCAS Soil laboratory analyses

Once collected and stabilized in the field, samples must be transported from the sampling institutions in the WB6 (e.g. national environmental agencies or soil institutes) to the JRC in Ispra, Italy. From there the samples will be shipped. This logistical chain is complicated by the fact that soil samples are categorized as potentially hazardous or restricted biological material, requiring specific phytosanitary certification and customs clearance for non-EU origins.

2.4.1. Sample volume and type

Each point generates several distinct sample types, each with its own logistical requirement:

- **Standard Composite Sample:** approximately 1 kg of soil (to be air-dried at the national institute prior to shipping).
- **Bulk Density Samples:** 6 undisturbed rings (each approx. 150 g) which must be transported carefully to avoid structural disruption.
- **Biodiversity samples:** fresh samples (500-600g) that must be kept at 4°C during transport to prevent DNA degradation.

The total estimated weight per point for shipping is approximately 2.5 kg. For the regional total of 1 335 points, this equates to approximately 3 338 kg of soil material.

2.4.2. Shipping mechanisms and estimated costs

Logistics should be seperated into rapid "cold chain" transport for biodiversity samples and "standard freight" for other samples.

- **Biodiversity/DNA Logistics:** These samples must reach Ispra within 48-72 hours. Utilizing premium couriers like DHL, UPS, or FedEx from Balkan capitals (Belgrade, Tirana, Sarajevo, Skopje, Podgorica, Pristina) to Ispra costs approximately 180 EUR per 25-point consolidated batch (assuming up to 25 kg per batch) based on web search in January 2026. If biodiversity is sampled at 9% of the points (125 points) as it is planned across the EU, the cold chain logistics cost is approximately **1,080 EUR**.
- **Standard soil freight:** The remaining bulk samples (approx. 2.7 tons) can be shipped via road freight on pallets. Groupage shipping rates for 2027 are estimated at 600-900 EUR per ton, including specialized customs brokerage for scientific materials. As every economy must ship their samples separately (up to 1 ton per economy) this results in a cost of approximately **3,600 EUR**.
- **Customs and Administrative Overhead:** Each economy must process export permits and phytosanitary certificates. Assuming an administrative cost of approximately 2,000 EUR per economy, this adds **12,000** EUR to the regional total.

Table 5: Estimated shipping costs for WB6 based on web search

Distribution component	Regional Total (EUR)	Average per point
Cold chain (soil biodiversity)	1 080	€0.80
Bulk road freight (mineral)	3 600	€2.70
Customs & phytosanitary admin	12 000	€9.00
Total distribution cost	**16,680**	**€12.50**

The distribution cost is relatively low compared to field sampling, but it is technically sensitive. Failure to maintain the cold chain or mismanaging customs documentation could invalidate months of expensive field work.

3. FUNDING OPPORTUNITIES FOR LUCAS SOIL MONITORING IN WB6

3.1. EU funds for accession countries

The Western Balkans economies are currently supported by a robust set of EU financial instruments designed to facilitate their socio-economic convergence and alignment with the EU acquis. For the period 2021-2027, the **Instrument for Pre-accession Assistance (IPA III)** is the principal mechanism for financial and technical support. For 2025-27, IPA III programmes are focusing mainly on preparing the beneficiary countries for accession, EU acquis alignment, as well as capacity building and technical assistance to ensure synergy and complementarity with the assistance provided under the Reform and Growth Facility (14).

IPA III: a policy-driven approach

Unlike previous iterations, IPA III is no longer based on fixed national allocations but is instead organized around five "thematic windows" that reflect the clusters of negotiating chapters. The following clusters may be of relevance for soil monitoring activities:

- **Window 3: Green Agenda and Sustainable Connectivity:** This is regarded the most direct source of funding for participation in LUCAS Soil. It focuses on environment and climate change, with a mandate to support the transition to a resource-efficient, resilient, and climate-neutral economy. Soil monitoring falls squarely under "Thematic Priority 1: Environment and Climate Change," which aims to reinforce environmental protection and increase resilience to climate change.
- **Window 4: Competitiveness and Inclusive Growth:** This window can also support soil monitoring through its focus on "Agriculture and Rural Development" (Thematic Priority 3). Monitoring soil fertility and health is a fundamental requirement for the sustainable agricultural practices promoted by this window.

Capacity building in regional projects such as EU4Green itself and potential follow-up projects could be helpful for WB6 economies if provided as regional support for joint efforts in soil monitoring to implement the SML in a harmonized approach in the Western Balkans.

The Reform and Growth Facility for the Western Balkans

In May 2024, the European Commission adopted a new €6 billion financial instrument specifically for the 2024-2027 period consisting of €2 billion in grants and €4 billion in concessional loans. This Reform and Growth Facility is designed to accelerate the accession process by providing support conditioned on the implementation of specific "Reform Agendas". These agendas prioritize the green and digital transitions. The LUCAS 2027 survey could be integrated as a key indicator of progress in environmental governance, unlocking grants and concessional loans. For Albania, Montenegro, North Macedonia and Serbia funds were already released (15).

Western Balkans Investment Framework (WBIF)

At least 50% of the Reform and Growth Facility is channelled through the WBIF. The WBIF is a joint initiative of the European Commission, International Financial Institutions (IFIs), and bilateral donors. While often used for large infrastructure, the WBIF also supports "Technical Assistance" for environmental projects. This could be leveraged to fund the procurement of the expensive sampling equipment (augers, bulk density sampling kits) and the upgrading of regional laboratories to meet EU standards. Project applications must meet the eligibility criteria set forth for a specific call as well as respond to the requirements detailed in the Guidelines relevant for the type of grant support - technical assistance or investment grants. As defined by the WBIF Steering Committee, only projects submitted and/or endorsed by the National IPA Coordinators (NIPACs) are eligible for consideration (26).

European Fund for Sustainable Development Plus (EFSD+)

The European Fund for Sustainable Development Plus (EFSD+) is one of the financing tools of Global Gateway, promoting sustainable investments in the European Union's (EU) partner countries. Offering a variety of risk-sharing instruments of up to €40 billion, the EFSD+ aims to mobilise up to €135 billion of public and private financing to help partner countries achieve the Sustainable Development Goals (SDGs) (16).

The European Investment Bank (EIB) is the largest implementation partner for the EFSD+ Guarantee, alongside the other Team Europe partners. The EIB Group supports accession negotiation countries, candidate countries, and potential candidate countries on their path to full EU membership, promoting competitive and resilient economies through good governance and transparency (11). Funding instruments are guarantees and grants provided through 'blending' (a mix of EU grants with bank loans).

'Environment and climate' is one of the six key intervention areas. Sustainable agriculture, biodiversity, forests, and water is one of the WB Guarantee Facility (EFSD+) Investment Windows. Beneficiaries are businesses, public and private infrastructure.

3.2. EU funds for monitoring activities

Beyond general accession assistance, the EU has established programmes that are suitable to fund research, innovation, and technical implementation of soil health monitoring.

Horizon Europe – Mission 'A Soil Deal for Europe'

The EU Mission 'A Soil Deal for Europe' is one of five missions launched under the Horizon Europe program (2021-2027). Its goal is to protect and restore soils by establishing 100 "Living Labs" and "Lighthouses" (22). WB6 institutions are eligible to participate in Horizon Europe as the WB6 economies are categorized as "associated countries" (17). The following calls are regarded of special interest in relation to soil monitoring:

- **Living Labs for Soil Health:** These are user-centred, open innovation ecosystems where soil-friendly practices are co-created and tested in real-life

conditions. Participation in a Living Lab project could provide the funding for continuous soil monitoring and sampling at specific pilot sites in the Western Balkans. The next call for projects opens on 12 February 2026 with the deadline on 14 April 2026 for the first stage.

- **Specific Calls for Monitoring (2026-2027):** The Horizon Europe Work Programme 2026-2027 (22) includes calls such as "HORIZON-MISS-2026-05-SOIL-01: Monitoring soil health in practice," which is specifically designed to equip stakeholders to sample and interpret soil health indicators. It could be of interest for soil institutes in the WB6 economies to join preparing themselves for the 2027 survey. The next call for projects opens on 4 February 2026 with the deadline for submission on 23 Sep 2026.

LIFE Programme - EU's funding instrument for the environment and climate action

The LIFE Programme 2021-2027 is open to Western Balkan countries, providing funding for environmental and climate projects, including nature conservation, circular economy, and clean energy transition operations. Funding instruments are mainly grants, which can co-finance up to 95 % of project costs. Other forms of funding include procurement contracts, prizes and technical assistance for investments. While North Macedonia is associated, and Montenegro joined in 2025, other Western Balkan nations can participate through specific agreements, with projects supporting the Green Agenda for the Western Balkans. Beneficiaries are public and private legal entities (13).

The key details for Western Balkan participation are the following:

- **Eligible activities:** Projects focusing on nature and biodiversity, circular economy, climate change mitigation and adaptation, and clean energy transition.
- **Funding opportunities:** Public and private entities can apply for funding through CINEA (European Climate, Infrastructure and Environment Executive Agency).
- **Association status:** As of 2025, North Macedonia and Montenegro are associated. Other WB6 economies may join through negotiations, allowing their entities to participate in calls for proposals.
- **Support mechanisms:** The Instrument for Pre-accession Assistance (IPA) helps finance participation in EU programmes.

JRC Technical Assistance

The Joint Research Centre (JRC) provides indirect financial support by covering the costs of the laboratory analysis for all samples collected during the LUCAS surveys. For the WB6, this "in-kind" contribution would be invaluable, as it provides access to high-end analytical technologies (e.g. DNA sequencing, mid-infrared spectroscopy) that are not yet widely available in the region. This assistance will depend on the financial resources available at JRC for inclusion of samples from WB6.

3.3. International funding opportunities

International financial institutions and United Nations agencies are actively involved in supporting environmental protection and climate adaptation in the Western Balkans, often focusing on land management and degradation neutrality.

- **Global Environment Facility (GEF) (20):** The GEF is a financing instrument of the UNCCD and the largest environmental multi-donor trust fund. It contributes directly to the goals of the Convention through targeted financial and technical support to the countries which seek to meet the objectives of the UNCCD, and other international environmental agreements. It provides grants for projects addressing biodiversity loss, land degradation, and climate change (24). In North Macedonia, the GEF is supporting the Ministry of Environment and Physical Planning in drafting the Law on Soil Protection and establishing soil quality monitoring programmes. Similar projects in Albania have utilized GEF "Land Degradation" allocations to restore ecosystems (21). The WB6 should explore "Multi-Focal Area" projects that link soil monitoring with biodiversity conservation (Annex I, Part C of the SML).
- **Green Climate Fund (GCF) (18):** The Green Climate Fund (GCF) – a critical element of the historic Paris Agreement - is the world's largest climate fund, mandated to support developing countries raise and realize their Nationally Determined Contributions (NDC) ambitions towards low-emissions, climate-resilient pathways. Therefore, it is a major source of funding for climate adaptation.
  The ALBAdapt project in Albania, approved in 2024, demonstrates how climate services can be funded through GCF grants (19). Since soil health is a key factor in water retention and disaster risk reduction (floods/droughts), the WB6 could frame LUCAS Soil monitoring as a component of "Ecosystem-based Adaptation" (EbA) projects.
- **Adaptation Fund (7):** The Adaptation Fund finances projects and programmes that help vulnerable communities in developing countries adapt to climate change. Initiatives are based on country needs, views and priorities. It has approved proposals for regional innovation initiatives in the Western Balkans. One project on integrated climate-resilient transboundary flood risk management in the Drin River basin (Albania, North Macedonia, Montenegro) was recently finished (9). The "Balkan Climate Adaptation Futures" project (Bosnia and Herzegovina, Montenegro, North Macedonia, Serbia) includes a focus on technical assistance and knowledge management for resilience regarding climate change (9). Soil monitoring data on carbon stocks and physical structure would be essential metrics for measuring the success of these adaptation efforts.
- **United Nations Development Programme (UNDP):** These agencies often act as the "Implementing Entities" for GEF and GCF funds in the region. For example, UNDP Albania has implemented a project to strengthen environmental monitoring and information management systems (EIMMS) until end of 2021 (25). Such projects can

provide the necessary technical expertise and project management support for large-scale sampling campaigns like LUCAS Soil.

3.4. National funding opportunities

While external support is crucial, the long-term sustainability of soil monitoring depends on national budgetary commitments. National funds are also typically required to provide the "co-financing" for EU and international grants.

- **Environmental Protection Funds (Eco-Funds):** Several WB6 economies have established specialized funds to finance environmental projects.
    - **Bosnia and Herzegovina:** The Environmental Protection Fund of the Federation of Bosnia and Herzegovina (FBiH) has the mission for collecting funds and investing extra-budgetary resources in the preparation, implementation and development of programmes, projects and similar activities in the field of preservation, sustainable use, protection and improvement of the environment (12). With this it is regarded as a key financial institution for financing projects in soil protection and remediation. It has a track record of supporting environmental monitoring equipment and nature protection projects.
    - **Montenegro:** The Eco-Fund of Montenegro is becoming a central hub for leveraging EU and other funding programs for environmental protection in the economy (10). It could play a crucial role in co-financing the participation in the 2027 LUCAS survey, particularly given Montenegro's focus on the green transition in its EU accession path.
- **National Sectoral Budgets:**
    - **Albania:** The Ministry of Tourism and Environment and the National Environment Agency (NEA) are responsible for the National Environmental Monitoring Programme. Although currently underfunded, the implementation of "Green Budgeting" tools in Albania could help prioritize soil health within the national budget process (27).
    - **Serbia:** The Ministry of Environmental Protection and the Serbian Environmental Protection Agency (SEPA) have dedicated budgets for soil monitoring. Serbia has already adopted a National Soil Monitoring Programme (6) and demonstrates a growing capacity to fund systematic soil assessments (23).
- **Agricultural Land Inventories:** Several economies, notably Albania and Kosovo, are undertaking "Agriculture Land Inventories". These are domestic programmes intended to create GIS databases of soil characteristics (6). Aligning the LUCAS 2027 sampling with these inventories would allow for the efficient use of national

agricultural budgets to support the participation in the harmonized EU-level soil monitoring.

4. RECOMMENDATIONS

The transition to the EU Soil Monitoring Law presents the Western Balkans with a unique window of opportunity to modernize their environmental monitoring systems in relation to soil. To successfully navigate the financial hurdles of the 2027 LUCAS Soil survey, the following steps are recommended:

1. **Harmonized Regional Funding Application (2026):** Under the auspices of the Western Balkans Soil Partnership (WBSP) and the Green Agenda for the Western Balkans, the WB6 should think of developing a joint regional proposal for IPA III Window 3 funding. A regional approach increases the chance of securing significant multi-country grants and ensures that technical standards are uniform across the Dinaric and Pannonian zones.
2. **Investment in Technical Capacity (2026-2027):** Priority should be given to utilizing IPA III and Reform and Growth Facility funds for the procurement of specialized field equipment (augers, bulk density rings) and the training of field teams on the complex 2027 protocol (subsoil sampling and woodland quadrats).
3. **Leveraging the "Living Labs" Model (2026-2030):** Research institutions and NGOs in the WB6 should proactively seek partnerships for Horizon Europe Mission Soil calls. Establishing Living Labs in key hotspots - such as erosion-prone mountainous regions or areas with heavy industrial legacy - can provide the continuous funding needed beyond the periodic LUCAS campaigns.
4. **Data Interoperability and Repositories (2027):** National environmental agencies should ensure that the data generated by LUCAS Soil 2027 is integrated into domestic GIS systems and national environmental information systems. This ensures that the data informs local policy decisions while remaining compliant with EU reporting standards.
5. **Engagement with the Private Sector (2027):** The WB6 should explore public-private partnerships, particularly with the agricultural and industrial sectors, to co-finance monitoring in areas where they have a significant environmental footprint. This aligns with the "polluter pays" and "extended producer responsibility" principles promoted by the Green Agenda.

By acting decisively in the 2026-2027 period, the Western Balkans economies can ensure that they enter the 2030s with the robust, harmonized, and legally compliant soil data necessary for their continued progress toward European Union membership and a resilient environmental future.

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