European Soil Health & Education Policies

Narratives on soil health education in Austria, Belgium, Croatia, Denmark, Finland, France, Germany, Italy, Netherlands, Norway, Portugal, Romania, Slovenia, Spain, Switzerland, Ukraine, and Türkiye.

Intelligence of the crowd version, 8 August 2025

[this version of the report is still under construction]

This is your invitation to add your view on soil education in your country

In case your country is not on the list or soil education dynamics call for expert updates, please add them there

A frozen text version has been used for EU approval, dated 8 August 2025

CURIOSOIL

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Dear visitor, welcome. While the CURIOSOIL deliverable version of this report (D4.1) is under review, you can already access the preliminary text here. It might be useful if you wish to analyse the status of soil health in the education system of a country not included on CURIOSOIL's list.

Please mail ESHA (info@esha.org) for any of your questions.

Executive Summary

Purpose: creating awareness as a first step towards healthy soils

This report is a deliverable of the four-year project CURIOSOIL. Nearly two-third of European soils are in a worrying condition and CURIOSOIL aims to foster soil health awareness across Europe as a step towards improvement. For 15+ European countries their soil health education is analysed - regulations, policies, good practices, alignment gaps at pre-primary, primary, secondary, tertiary, and lifelong learning levels. Roughly half of the analyses cover a nations' historical soil narrative and soil-health related networks as well.

This work sets the stage for workshops and conferences with the purpose of developing policy recommendations. It all contributes to CURIOSOIL's mission: to embed soil health in each educational system, and EU's Mission Soil to *rapidly* develop and scale up solutions for sustainable soil management as part of the green transition.

Intended audience: policy writers, curriculum designers, educators, soil experts, and action researchers

This report first gives food for soil education policy developers in European countries and across. Secondly, it speaks to those working in education, especially those who design curricula and learning methods. Thirdly, it addresses soil experts who wish to tighten their bond with the educational sector. Fourthly, it helps teachers and professional trainers who already pioneer educating soil health, bring their activities to a next level. Fifthly, (action) researchers may use them as a reference for practice improvement and longitudinal change monitoring. Lastly, active citizens may find inspiration to bring their activities further a step or two.

Activities: soil in education systems has been analysed, reflected upon with national experts, leading to conclusions

First, the CURIOSOIL team added elements of transition reasoning to the task. This is a bonus per country—not an obligation. It makes it easier to link a country's soil education status and attitude to change to its historical narrative. Next, three CURIOSOIL partners led the research. Given their task, they relied heavily on grey literature, such as government publications, education system descriptions, interviews, and additional online materials. AI tools helped to bridge language and resource gaps. For more balance, richness, and credibility, a reflection meeting was organised per country, engaging between one and six experts from soil, education, and policy backgrounds, 54 in total. The result is a series of narratives on the position of soil in national education systems and cultural factors behind it.

From here, the CURIOSOIL team hopes that future policy recommendations will be founded upon real-world complexities rather than on generic and static pictures.

Results: time is right, education shows hurdles, soil to increase agility, agriculture and VET need special attention

This research shows that the interest and will to transition towards next-level soil education exist - the time is right. There is a small army of hurdles to address however, and many of them are education-related.

A misalignment between national soil health policies and everyday implementation is a reality in most of the countries analysed. Against that canvas, educators cite time, budget, rigid schedules and mono-disciplinary teaching as well as institutional inertia as constraints for soil health literacy building. In some countries a near-absence of a national soil health improvement strategy stands in the way of scaling up good education

practices. Region-specific and top-down defined curricula tend to amplify this. As an obstacle for change, some experts mention a gap between the older and younger generation, particularly in rural areas. Both researchers and educational tool developers experience research and development-related bureaucracies in pre-primary, primary and parts of secondary education as outright blockades for *swift* method development and tool improvement cycles.

As a contrast, there is a remarkable level of positive dynamics towards soil health consciousness, experimenting and improvement at ground level in many European countries. Often, these rest upon an out-going cultural tradition. Some experts highlight the interstage between education hours and free time, involving teachers, friends, and families. In countries where these traditions are weak or absent, however, efficiency schemes and rising assessment pressure work counter-productively for the scaling of ground level dynamics. Similarly, some experts highlight a recent increase in pressure to dilute nature-inclusive education amongst traditionally holistic niches like Dalton and Montessori schools. On top of that, secondary education is by some experts labelled *the abyss* for any previously built-up soil health experience.

While 'education' is regarded as a potentially slow traveller on Europe's railway towards soil health literacy, the education system itself is likely to undergo major changes in the near future. Traditional soil teaching will therefore need to add agility in order not to lose connection with its future, fast-moving societal companion.

Research and practice implications: layered interventions, special eye on VET, secondary education in general, and mainstream agriculture

CURIOSOIL's reflection sessions call for layered intervention sets. First, strengthening grassroots dynamics through recognition, connection, and support, and second, anchoring soil health ambitions at sub-EU policy levels. In many countries, however, the void is in the middle. It calls for coordinating soil education along the lines of a country's societal issues, area-specific challenges, and adaptation of its historic soil-related narratives.

With regard to research, next pages' findings highlight the need to strengthen both multidisciplinary (horizontal) and transdisciplinary (vertical) collaboration, and to bring soil education *in sync* with Europe's fast-evolving educational landscape. Secondary education routines and VET (Vocational Education and Training, see Abbreviations), deserve additional research. The first because their strict time-based format limits trans-disciplinary learning, like going outside and getting one's hands dirty. VET because they hold the key for many of society's soil management routines while CURIOSOIL does not particularly focus on them.

So, confining soil education to traditional school settings would be a mistake. The pace of change deemed necessary, forces *soil* to expand towards informal educating, professional training, and lifelong learning - particularly in sectors like farming, landscaping, and urban and industrial site refurbishment. One sector is referred to as in need of *particular* attention: Europe's mainstream agriculture.

Conclusion: 15+ snapshots in time show both willingness and hurdles - the shift will take decades

To meet the EU Mission Soil goals, professional educators - as an extension of parents and caregivers - could certainly evolve into key transition players. The will and enthusiasm are apparent, and awareness raising is generally regarded as a good start. Experts warn against resistance to be expected from four subgroups: the elderly, communities in rural areas, VET educators, and agents with vested interests such as mainstream agriculture.

Were *educators* moulded as the sole and only transition agents, then CURIOSOIL's effort would turn out disappointingly. The historic links between soils and a country's culture, economy, and even belief system are too tight to transition for one single agent.

CURIOSOIL has a sister project, LOESS, showing overlaps, differences and complementarities with CURIOSOIL. The CURIOSOIL team believe that both project findings together mark a milestone towards soil interest building amongst children, pupils, students, and professionals across Europe.

To end with, this report gives a snapshot in time. The soil education journey, however, will span decades. Therefore, a living crowd intelligence version has been put online, as an invite for experts to update the analyses and add countries beyond those listed in CURIOSOIL.

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Introduction, Methodology, Synergy with sister project LOESS, Future Steps

Purpose and Scope: two-third of our soils in a worrying condition, soil literacy becomes key

A remarkable set of European sustainability issues can, at least partly, be solved by treating our soils better: biodiversity loss, climate change effects, soil erosion, deteriorating food production conditions, water management issues, and sustainable energy needs (Katikas, 2024). The authors of this report could easily add cultural issues to this list, since the European cultural narratives are often rooted in its soils' properties. In order to find paths towards its sustainable future, understanding soils therefore is key. The EU labels nearly 60% of its soils as in a worrying state ("unhealthy"). Lowering that percentage significantly is regarded as a prerequisite to build sustainable practices and ecological resilience throughout Europe. To paraphrase EU's Mission Soil: It's Action Time (see Annex 1).

This report gives an overview of to which extent 'soil' is embedded in education policies and practice. According to the plan, fifteen core countries have been analysed: Austria, Belgium, Croatia, Denmark, Finland, France, Germany, Italy, Netherlands, Norway, Portugal, Romania, Slovenia, Spain, and Switzerland. Since CURIOSOIL school leaders from Ukraine and the CoP in Turkey expressed interest, two chapters have been added. All have been taken into account for the overarching conclusions and European narrative.

Embedding this report in CURIOSOIL: research to build policy interventions upon

This report is a deliverable (D4.1) of a four-year project, CURIOSOIL. CURIOSOIL ("*We foster soil education*") aims to raise curiosity amongst citizens of all ages as a first step towards treating the European soils right. Starting from a lack of soil literacy and competence across Europe (Katikas, 2024), CURIOSOIL fosters knowledge embedment in each country's education mix – (pre)primary, secondary, higher, and lifelong education, in both formal and non-formal formats. The project proposal includes the development of educational modules for only parts of this target group however.

CURIOSOIL is an EU funded Horizon project, the research and innovation programme to tackle major societal challenges. The research task of this report is *[...] to review and analyse existing regulations, policies, and support mechanisms related to soil education at primary, secondary, and post-secondary level across the EU and HE Associated Countries. [...] Soil scientists and education experts in the CURIOSOIL consortium will analyse national education systems and collect data together with members of education organisations, school-heads and teachers. The data will be complemented with the analysis of education guidelines and regulations [...].*

Intended audience - how we wrote this report - why country chapters differ

This report is meant for broad public reading. It has been written by the European School Heads Association (ESHA), GAIA Education (GEDU) and Wageningen University (WU). Contributions have been made by both soil and education experts from 15+ countries. All countries have been analysed from Q4/2024 to Q1/2025. The data were gathered through desk research, interviews, AI prompts, and online and on-site meetings.

Although the analysis framework has been generic, the resulting country chapters do differ. Firstly, because the professional backgrounds and number of contributors involved in each country's analysis differed. Secondly, since education systems, policy culture, and soil embedment differ across Europe and research teams adapted their methodology slightly to a country's context. Thirdly, because some countries were more accessible to the

CURIOSOIL researchers than others. Lastly, AI-dominated analyses differ from traditionally crafted ones. Please read each country report for details.

The pages of this report are intended as a starting point for those involved in writing soil education policy. They are aimed at professionals in education, particularly curriculum designers and developers of learning methods. They may also be of value to soil health experts seeking to strengthen their links with the education sector. Teachers and professional trainers who are already pioneering soil health education may find guidance here to take their work to the next level. In addition, action researchers may use this report as a reference for improving practice and for monitoring long-term systemic change. Finally, active citizens may find inspiration within these pages to take their own initiatives a step or two further.

Structure of This Document: two parts, eight research dimensions, three DIY annexes

After the introductory chapter, the core of this report consists of two parts. Part A introduces CURIOSOIL's cross-country findings: the European narrative. Part B contains 15+ country research findings: the countries' narrative.

To sketch a country's soil health education system is to account for a wide collection of structures, practices, and contexts. To lend researchers a hand, while not diminishing their room for explorative analyses entirely, CURIOSOIL generated a research framework along eight dimensions. Most dimensions are mandatory: how a country educates, which policies and obligations it has, and how the country educates soil health now. Diving into a country's historic narrative, strategy/practice/budget/transdisciplinarity gaps, and foreseeable resistance falls outside the original project scope. These are system transition check points and optional for research. Understanding a country's history, scandals, successes, lock-ins, and disillusions help policy designers increase the chance for success once their interventions are to be implemented.

After Part A (the European narrative) and B (the 15+ countries' narratives), one Annex provides for national area, population, and agricultural land use data. Three Annexes provide for DIY guides in case experts wish to update a country's analysis or add a country that hasn't been on CURIOSOIL's list. Organising updates is beyond CURIOSOIL's deliverable.

Here's the eight research dimensions in condensed form. Annex 5 contains the texts as literally introduced to the researchers.

1. **How the country educates:** policy – structure – curriculum obligations – dynamics

   Obligatory task: describe the country's education system setup. Its routines. Its obligations. To which extent education institutions/courses are free to determine their curriculum. What is nation-wide top-down directed. What is designable per region, city, sector, institute, course or even per teacher. The answers probably differ across education types and levels. The Eurydice platform has been used as a starting point for analyses, as it provides overviews of all EU education systems.

   Optional Q: if you have entries in a country, try and describe the country's trends and dynamics in this.

2. **Soil awareness per education type and level:** from absent – to weak – to top of mind

   Obligatory task: Describe to what extent 'soil' is in one way or another embedded in pre-primary, primary, and secondary education. Where it is absent, where weakly present, where a top-of-mind topic. Whether formal and non-formal education differ in this. Post-secondary education pays special attention to soil health. Think of vocational, BSc, MSc, PhD, professional and lifelong training.

   Optional Q: if you have entries in a country: try to deepen your results through expert interviews.

3. **Historic landmarks in soil awareness**

   This is not an obligatory research task. Optional task: Recent literature brings us to expect meagre results of the previous task. Apart from the agricultural domain, soil and especially soil health are new kids on the

education block. Teaching soil – if any – is probably scattered across the educational system. Here's where dimension three kicks in.

Q's: If you have entries in a country: try describing historic landmarks in the national soil awareness. Describe recent influential events. Events from decades back. From centuries even. Try and describe how they affect today's soil beliefs in the country or region. Describe – if any – fierce soil health related debates. Describe – if any – heroic narratives. Describe whether they have resulted in country-specific possibilities. Describe whether they (seem to) limit future paths.

4. **Integration:** from singular issue – to well balanced perspectives

   Q's: If you have entries in a country, try and find whether soil is a singular issue or integrated into multiple disciplines across science, technology, and engineering. Whether it balances perspectives like chemistry/physics/biology/law/economy.

5. **Bridging the policy-practice, theory-practice and budget gaps**

   Obligatory task: Describe whether education goals are in line with soil objectives at EU level (see Annex 1). Describe whether education tasks match educational budgets, methods, course materials and whatever else it takes to teach properly.

   Q's: If you have entries in a country, try and find whether soil health theory and practical experience are two worlds apart or well connected. Try and find whether soil science is a solitary domain or interwoven in others. Mind, soil health can be taught in a direct and indirect way. Direct, e.g. learning about soil functions. Indirect, e.g. learning how to plant seeds or construct foundations of a building. Find out whether soil education *practice* is in line with EU objectives. And whether soil teaching objectives match educational budgets, methods, course materials and whatever else it takes to teach properly.

6. **Geographic and stakeholder specificity:** from absent – to detailed and well defined

   Q: If you have entries in a country, try and find to what extent soil education is adapted to geography. Does it distinguish between rural, peri-urban, and urban settings? Does it target industrial sites? Villages? Metropoles? Farmland? The region's geography?

   Q's: Are soil courses targeting stakeholders? Think of house owners, architects and landscape designers, urban planners, farmers, industrial site managers, leasehold organisations and brokers, policy makers and law enforcers, NGOs and citizen's co-operatives.

7. **Attitude to change:** from ready to block – to willing to adapt – to willing to transform

   Q: If you have done research, interviews, and perhaps some meetings in a country or region, what attitude would you expect the moment soil (health) education is intensified? Do or do you not expect a general willingness to adapt educational routines? Easy adoption or resistance to change? In case of the latter, from whom? What if *deep* change in a *short time span* is regarded as necessary by experts?

8. **Level of dynamics:** from standstill – to gradually changing – to fast & deep change – to chaos

   Q's: If you have entries in a country, what is the current level of soil health dynamics? A near stand-still? Developing gradually? Rapid and deep change? Chaos? What is foreseeable for the future?

Relationships with other CURIOSOIL deliverables

In CURIOSOIL speak, this report is the first deliverable (D4.1) of Work Package 4. WP4 finally delivers policy recommendations. This report's analyses lay the groundwork for national workshops and conferences (D4.2) to generate those policy briefs (D4.3, D4.4) and recommendations. WP4 aims to support the rich, and diverse positive soil education dynamics at ground level. Where other deliverables may be teacher/student oriented (like MOOC development for primary and secondary school teachers (D2.4) and higher education students (D2.3) and the Soil Curiosity Kit (D3.3, D3.4), WP4 aims to influence national and European policies, to support bottom up initiatives. While doing this, the Communities of Practices (WP5) are involved, and therefore receive a voice in how a country's policy recommendations are shaped.

Methodology

What we did: add transition reasoning, analyse soil health positions in education systems, reflect upon the result with experts, and generate conclusions

Based on the project proposal, ESHA prepared the country analysis guide. Desk research and focus group discussions in each country were organised and carried out by the CURIOSOIL partners GEDU, WU, and ESHA. National education, policy, and soil experts have reviewed 15 of the country analyses; the optional chapters on Turkey and Ukraine were not reviewed by national experts. Drawing on approximately 90% of the countries' results, the European narrative was largely generated through AI, after which ESHA made minor checks and adjustments. Throughout the process, IUCN provided feedback on the outcome.

During the preparation of the country analysis guide, ESHA incorporated elements of transition reasoning into the research task. These were intended as an optional extra for each country, rather than a prescribed requirement. The purpose of including transition reasoning was to enable future policy writers to build more effectively on each country's historical narrative and prevailing attitudes towards change.

Given their task, the research team relied heavily on grey literature, such as government publications, education system descriptions, interviews, and additional online materials. AI tools helped to bridge language and resource gaps. For more balance, richness, and credibility, a focus group reflection session was organised per country, engaging between one and six experts from soil, education, and policy backgrounds, 53 in total. The result is a series of narratives on national education systems, the position of soil health in each, and cultural factors influencing both.

Through this, the CURIOSOIL team aims to base future policy recommendations on real-world complexities rather than on static representations.

Each annex opens with the name of its authoring partner.

The CURIOSOIL logo & report lay-out has been designed by Revolve Media.

On Artificial Intelligence: from profound distrust to valuable partner. however…

The extent to which AI is regarded as a friend or foe of reliable research, evolved rapidly between the CURIOSOIL plan design stage and the time the 15+ countries were actually analysed. Mirroring this shift, some desk analyses have been crafted traditionally while others already rely at least partly on AI with the research questions serving as prompts. Most chapters are the result of a mix: after checking Eurydice online for a country's education system, AI was added to retrieve additional data, with interviews, desktop research and expert reflection leading to refinement and balance.

None of the experts indicated, when asked in the national reflection sessions, that "AI-heavy chapters" were unreliable, unbalanced or untrustworthy in their opinion. They usually added or nuanced a few research findings. To keep things transparent, each country chapter starts by mentioning the role of AI for that particular analysis.

The contrast in tone and underlying message between traditionally written and AI-generated chapters can be striking. While CURIOSOIL's research questions are framed neutrally, the involvement of human contributors inevitably introduces emotion—some of it decades in the making. A similar dynamic was observed by CURIOSOIL researchers during several focus group reflection sessions: where AI had fostered an air of neutrality or optimism, participants sometimes voiced deep-seated frustrations about their country's entrenched bureaucracy or persistent policy-practice gaps.

As an experiment, one CURIOSOIL researcher analysed one country using a traditional approach, and a second AI-driven. Both reflection meetings experts were satisfied with the result. The (human) English language reviewer noted the emotionally charged style of the traditionally written chapter, in contrast to the near-total absence of emotion in the AI-heavy version. During the expert session, however, human emotion eventually surfaced—striking the researcher with what felt like twice the intensity.

There were at least three practical reasons for employing AI. Firstly, the scope of the research far exceeded the available working hours. Secondly, a language barrier made it difficult to analyse policy documents in many countries—AI helped identify and verify relevant sources. Thirdly, AI typically produces English of a higher standard than most non-native speakers are able to achieve.

As researchers observed an improvement in the quality of their work through the use of AI, tools such as ChatGPT, Perplexity Pro and Claude were also employed to cluster cross-country findings.

Synergies with sister project LOESS

CURIOSOIL has a sister project: LOESS. The 36 month Horizon project aims to boost soil health literacy through an 'Operational Educational Ecosystem of Societal Actors'. In 2024 LOESS researched awareness, needs and vision for soil education in 15 European countries. LOESS – how could it not – shows overlaps, differences and complementarities with CURIOSOIL.

Per country, LOESS has researched the state of soil health education in primary, secondary, vocational, tertiary, and general public, and the soil health requests from the educational sector. In their initial study, LOESS analysed countries on six dimensions:

1. Purpose: why is soil health embedded in education?
2. Collaborations: with whom is soil health educated?
3. Learning space: Where is soil health taught?
4. Learning process: How is soil health taught?
5. Activities: In which of three ways is soil health educated: knowing-based, doing-based and being-based? The latter refers to (inter-) personal and socio-emotional aspects, e.g. contemplation, drawing, sensing. etc.
6. Paradigm: From what assumptions and world view is soil health taught?

In their second study, educators' needs and barriers were explored through online surveys, including a self-assessment for teachers.

Similarities with CURIOSOIL

CURIOSOIL and LOESS are sisters indeed. In data methodology, both took similar approaches. Both started with desk research and presented this to national focus groups for reflection. LOESS conducted an additional (obligatory) ten interviews per country. For CURIOSOIL, interviews were an optional part of the desk research. Focus group reflection was an obligation for both. Additionally, both work with national Communities of Practice to reflect on approach, findings, and reflection results. Both have their initial findings reflected upon by a national focus group. Both work with national communities of practice, to oversee general approach, progress, findings, and the educational interventions.

Differences from CURIOSOIL

Where LOESS focusses mainly (but not exclusively) on teacher input, CURIOSOIL aims at reaching policy makers and national education experts as well. LOESS systematically compares the present and the future between countries. CURIOSOIL has chosen for a structure with qualitative guiding questions and the possibility for

researchers to dive into a nation's geo-historical soil narrative and its policy/practice/budget gaps, in order to become sensitive to the country's future policy path possibilities and restrictions. LOESS systematically brings soil *knowing*, *doing*, and *being* to the reflection table. CURIOSOIL allowes research teams to adapt their data gathering and reflection to a country's context. LOESS's research partner WU hasn't introduced AI in any of their research. CURIOSOIL research partners have, at a significant scale.

LOESS' findings

Some of LOESS' key findings, taken from the concept report's Summary:

- Soil health as an educational term is absent across Europe.
- Soil health related topics are weakly integrated in education. The emphasis is on knowledge acquisition (knowing). Cultivating skills (doing) comes second. Fostering a personal connection with soil (being) is sidelined.
- LOESS finds a strong consensus on shifting away from indoor forms of education and moving towards outdoor settings. It finds a wish to move beyond the reductionist paradigm towards an ecological one, acknowledging the complexity of ecosystems.
- Educational support for all the EU's Mission Soil objectives is rare. So is linking soil to three of the SDG's: climate action, good health, and well being.
- LOESS identifies the need to revise curricula as essential.

Future steps

National Workshops and Conferences

The analyses from the previous chapters will form the basis for national policy workshops (work package 4). There, experts will reflect on the findings, as well as good practices from others to identify policy recommendations for their country. These recommendations will be presented during national conferences, as well as during an international CURIOSOIL conference.

Future Soil and Education Policy Development

This document has been composed over the span of a year-long research. Soil education policies and pratices will develop over the years to come. Therefore we see this report version as a momentary capture. Besides it is a deliverable for monitoring CURIOSOIL's project progress. To facilitate expert updates and new country analyses, a living intelligence-of-the-crowd version of the text can be found here.

DIY: On Future Updates and Future Expert Sessions

To facilitate progress monitoring, new country analyses, and integrating future dynamics in soil education Annex 4 welcomes experts who are willing to update national or cross-country findings. Annex 5 offers a blank research template, with each of the CURIOSOIL dimensions explained. Annex 6 provides a guide for future expert reflection sessions (focus groups).

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Part A: Soil in Education - the European Narrative

This chapter offers a European overview of the findings from the 15+ country analyses presented in Part B. The narrative follows the eight dimensions outlined in the preceding section. It was generated with the support of ChatGPT4.0 and cross-checked against the initial country analyses, so no focus group reflection has taken place on this chapter. Due to the use of AI (see On AI) and fuelled by some of the CURIOSOIL national expert focus groups, the European narrative may be less optimistic than it at times appears in writing. Beware that, by the time this report is published, national policy shifts and awareness dynamics may have already moved a country's position up or down the ladder.

How the countries educate

Drawing on our country analyses, five broad clusters of education systems can be identified across Europe: highly centralised systems; federally decentralised systems; regionally autonomous systems; flexible, teacher-led systems; and those with a strong emphasis on vocational education and lifelong learning. These clusters reflect varying approaches to governance, curriculum autonomy and local adaptability, with clear trends emerging across the continent.

Highly centralised systems, such as those in **France**, **Croatia**, **Portugal**, and **Ukraine**, are characterised by strong national control over curricula and education policy. In France, the state defines all key aspects of education, from teacher recruitment to curriculum design, with local authorities playing a largely operational role. Croatia mirrors this structure, with its Ministry of Science and Education overseeing a uniform national framework. Similarly, Portugal's Ministry of Education coordinates policies across all education levels, though recent reforms have granted school clusters greater autonomy in managing pedagogical matters. In Ukraine, centralised control is also prominent, with national standards defining curriculum goals, but local governments are tasked with ensuring accessibility. These systems prioritise equity and consistency but often struggle with flexibility and local responsiveness.

In **federally decentralised systems** like those of **Germany**, **Switzerland**, **Austria**, and **Italy**, responsibilities are shared between national and regional authorities, leading to significant variation in education delivery. Germany's *Länder* independently legislate and administer education, creating diverse regional practices. Switzerland's cantons have even greater autonomy, with harmonisation efforts like the *Lehrplan 21* ensuring some consistency across regions. Austria balances federal and provincial control, with the federation setting broad policies and provinces implementing them. Italy employs a similar model, where the central government defines minimum education standards, but regions manage vocational training and contribute to planning school networks. These systems are highly adaptable to regional needs but may face challenges in ensuring uniform quality and equity.

Countries such as **Belgium**, **Spain**, and increasingly **Romania** highlight the impact of **regional autonomy** in education. In Belgium, linguistic communities independently manage their education systems, incorporating cultural and linguistic priorities. Spain operates similarly, with regions granted significant curricular freedom to include topics like regional languages and environmental challenges. Romania's system, though more centralised, involves County School Inspectorates in the implementation of national policies, allowing for some regional adaptation. These systems preserve regional identity and diversity but require careful coordination to maintain national cohesion.

Flexible and teacher-led systems, including **Finland**, **Denmark**, the **Netherlands**, and **Slovenia**, emphasise curricular adaptability and the autonomy of local educators. Finland and **Norway**'s teachers adapt the National Core Curriculum (NCC) to regional needs, fostering creativity and student-centered learning. Denmark grants municipal-level control, encouraging tailored educational approaches. The Netherlands provides schools significant

curricular freedom within a centrally defined framework, allowing for innovative practices. Slovenia combines a single-structure curriculum with extensive public funding, supporting flexibility and quality assurance through national agencies. These systems excel at fostering innovation and responsiveness to societal needs, offering a contrast to more rigidly centralised models.

Vocational education is a hallmark of systems in **Germany**, **Austria**, **Switzerland**, and **Portugal**, with pathways that blend academic and practical training. Germany's dual education system combines workplace learning with school-based instruction, a model echoed in Austria and Switzerland. Portugal emphasises vocational education alongside academic pathways, with reforms enhancing alignment with labour market demands. **Slovenia** also prioritises vocational training, integrating it within secondary education and ensuring strong links to industry. These systems address labour market needs effectively, offering clear routes to employment or further study.

Several countries bridge multiple clusters, blending centralised frameworks with regional or institutional flexibility. **Italy**, for example, in theory (see chapter Italy) combines centralised oversight with school autonomy, where institutions design their own three-year education plans (PTOFs). Similarly, **Romania** balances a centralised curriculum with county-level implementation and school-based curricular adaptations in vocational education. **Ukraine** aligns with centralised systems but allows for specialised tracks in secondary education, catering to academic and vocational needs.

Currently, some **overarching trends** in European education systems include a growing emphasis on inclusivity, sustainability, and lifelong learning. Countries such as **Finland**, **Portugal**, and **Spain** integrate sustainability themes into their curricula, often reflecting EU priorities like the Green Deal. Meanwhile, vocational education remains a strong focus in countries like **Germany** and **Austria**, ensuring relevance in the labour market. Inclusivity is increasingly prioritised, with systems such as those in **Slovenia** and **Romania** integrating special needs education within mainstream frameworks.

While centralised systems like those in **France** and **Croatia** emphasise uniformity, decentralised and teacher-led models in countries such as **Finland** and **Denmark** foster innovation. Vocationally oriented systems like **Germany** and **Slovenia** highlight labour market alignment, and regionally autonomous frameworks in **Belgium** and **Spain** celebrate cultural diversity. These varied approaches demonstrate the diverse pathways European countries take to address national, regional, and global challenges in education.

How countries educate soil health and its effect on soil awareness per education type and level: from absent - to weak - to top of mind

Soil awareness is generally underrepresented in pre-primary and primary education across most countries. It is often introduced indirectly through environmental or nature-related activities, such as gardening or ecosystem studies. As students progress to secondary and tertiary education, soil awareness becomes more explicit, especially in subjects like geography, biology, and environmental science. Post-secondary institutions and vocational programs show the highest integration of soil-specific topics, often driven by specialised research, EU initiatives, and collaborations with environmental organisations.

Top-of-Mind Awareness
France employs a national strategy that combines institutional support from INRAE and programs like the Living Soils Initiative to promote conservation agriculture. Soil health education is also reinforced through research networks like RMQS. As a result of this manner of teaching, France exhibits top-of-mind soil awareness, with a systemic and collaborative approach that ensures soil health remains a national priority across education, research, and practical application. **Norway**, too, has soil relatively high on the agenda. It is integrated in sustainability education, where soil is mentioned three times in the national policies. Implementation still depends on teacher initiative, as teacher training on soil is still lacking. Outdoor living is highly promoted in Norway.

Moderate to High Awareness
Austria utilises centralised policies to embed soil education across curricula at all levels, supported by EU directives and partnerships with NGOs. Programs like ÖKOLOG emphasise hands-on learning and sustainability.

Finland employs an interdisciplinary approach, integrating soil health into the National Core Curriculum and reinforcing it with experiential learning through school gardens and excursions. Vocational and tertiary programs offer specialised training in soil management. **Switzerland**, with its decentralised education system, focuses on regional initiatives, vocational training, and community-based programs. Universities and research institutions provide specialised courses and hands-on research opportunities. The **Netherlands** partly integrates soil health into education, supported by network collaborations between higher education institutions, NGOs, and non-national government bodies. Regional programs like the Bodem-Up Project provide farmers with practical training, while vocational and tertiary education have recently started to prioritise sustainable land and water management. As a result, these countries demonstrate moderate to high soil awareness, reflecting their holistic approaches to integrating soil health into both formal and non-formal education systems.

Weak Awareness
Belgium incorporates soil topics into broader environmental education, with regional variations influencing implementation. Non-formal initiatives like school gardens and the MOS program play a significant role. **Germany** integrates soil education into primary through tertiary curricula, with school gardens, excursions, and lifelong learning initiatives offering practical engagement. However, decentralised policies sometimes hinder consistent application. **Italy** addresses soil education indirectly through climate education and regional programs. Projects like SoilHub emphasise soil management, but the focus is uneven across regions. **Portugal** includes soil health in its national curriculum at all educational levels, with practical activities like school gardens and tertiary-level research programs. However, the focus is less prominent in early education. **Spain** integrates soil health into natural sciences and geography curricula, however, inconsistent implementation limits its impact. Resulting from their manner and integration of soil education, these countries exhibit weak soil awareness, as fragmented efforts, inconsistent policies, and limited emphasis in early education hinder a broader understanding of soil health.

Absent to Weak Awareness
Romania relies on non-formal education and regional agricultural training programs to address soil health, with limited integration into formal curricula. Vocational schools and NGOs play a key role, though resources are scarce, and efforts remain fragmented. **Slovenia** integrates soil topics into environmental science curricula at early levels, with vocational education providing additional focus on soil management. However, the lack of standalone soil education reduces its impact. Similarly, **Ukraine** introduces soil concepts only minimally in primary education, focusing primarily on environmental topics, without explicit attention to soil health. These countries demonstrate significant gaps in formal education, underfunded initiatives, and, at best, mixed public engagement.

In short

Funding and an integrating approach often determines the success of soil education initiatives. Countries like Austria and France benefit from strong financial support through EU programs, national budgets, and regional grants. In contrast, countries with limited budgets or non-connected system layers, such as Romania, Slovenia, and the Netherlands struggle to implement consistent soil education policies, while there is space for innovation on an individual basis.

The analysis reveals a spectrum of soil education approaches and resulting awareness levels. While explicit soil awareness is often neglected in early education, there is notable progress at higher levels of education - in subject specific courses - and in non-formal settings. Countries like Austria and France lead with robust, centralised strategies that integrate soil health across all levels, fostering high awareness. Transposing their good practices to other countries may help bridge the global soil awareness gap. Meanwhile, nations like Romania, Netherlands, and Slovenia struggle with fragmented efforts and weak policies, resulting in, at best, mixed awareness.

Historic landmarks in soil awareness

This research topic was non-compulsory. For those countries where information has become available, some general trends can be observed.

Many countries historically relied on traditional farming methods like crop rotation and organic fertilisation to maintain soil health. The 19th and 20th centuries saw the emergence of soil science, with research institutions mapping soil types, improving fertility, and addressing degradation. The 20th century post-war period led to intensive farming, heavy chemical use, and soil erosion, prompting later conservation efforts. From the 1970s onward, nations adopted soil protection laws, sustainable agriculture programs, and EU-aligned policies to mitigate soil degradation. Current initiatives focus on climate resilience, carbon sequestration, and regenerative farming, with increased public education and research investments.

Integration: from singular issue - to well balanced perspectives

Most European countries are shifting from a singular focus on soil issues to a broader, interdisciplinary perspective. While higher education and research institutions excel in this integration, early education often remains fragmented. Secondary education is mentioned as an *abyss* for any previously built up soil health awareness. Future improvements could include better funding, interdisciplinary curricula, and public awareness initiatives.

Bridging the policy-practice, theory-practice and budget gaps

Most European countries align their soil education and management policies with EU objectives, but significant gaps exist in implementation, funding, and public engagement. While higher education and research institutions show strong integration, primary and secondary education often lack practical soil education. Addressing these challenges requires better funding, interdisciplinary curricula, teacher training, and public awareness initiatives.

Geographic and stakeholder specificity: from absent - to detailed and well defined

The analysis of each country explores the specificity of soil education across different geographical settings and stakeholder groups. The analyses highlight how soil literacy varies depending on rural, urban, peri-urban, and industrial contexts, as well as how different stakeholders—such as farmers, urban planners, architects, policy makers, industrial site managers, and NGOs—are engaged in soil education.

Key insights include geographical and stakeholder specific adaptations of soil education.

On the geographical side, a distinction can be made between rural, urban, peri-urban and industrial areas. In **rural areas** education is heavily focused on agriculture, sustainable farming, soil fertility, and erosion prevention. Farmers receive extensive training through vocational schools, government programs, and EU-funded initiatives.

In **urban areas** soil awareness is often embedded in topics like urban green spaces, contamination, and climate resilience. However, urban soil education is less structured and lacks depth compared to rural programs.

In **peri-urban** Settings, education serves as a bridge between urban and rural soil literacy, addressing land-use conflicts, urban expansion, and small-scale farming.

Finally, around **industrial sites** soil education focuses on pollution, contamination, and remediation, primarily targeting environmental professionals rather than the general public.

When looking at stakeholder-specific soil education, there is a wide variety of stakeholders to consider. **Farmers** are the most well-targeted group, with training in soil conservation, nutrient management, and climate-resilient agriculture. **Urban planners and architects** engage through workshops and sustainable urban planning courses, but soil education remains secondary to broader environmental topics. **Policy makers and law enforcers** receive training on soil regulations, EU directives, and compliance but lack practical knowledge on soil management. **NGOs and citizen cooperatives** play a key role in public awareness and grassroots initiatives, though efforts are often fragmented and dependent on external funding. **Industrial site managers** are focused on contamination control and environmental compliance rather than proactive soil health management. **House owners** and **property**

developers are minimally engaged, with limited education on how soil impacts property value, construction, and sustainability.

Therefore, challenges and gaps remain. Urban and industrial soil education is underdeveloped compared to rural areas. Many stakeholders, including architects, brokers, and leasehold organisations, lack targeted soil education. Soil education is often fragmented and does not fully integrate across disciplines and regions. There is a need for more interdisciplinary collaboration to bridge gaps between rural and urban soil management.

Soil education varies widely depending on geographical context and stakeholder group. While rural and agricultural sectors receive extensive soil training, urban, peri-urban, and industrial contexts remain underrepresented. Expanding soil literacy to a wider range of stakeholders—especially in urban planning, architecture, and policy-making—could strengthen overall sustainability efforts.

Attitude to change: from ready to block / to willing to adapt / to willing to transform

This section was not part of the obligatory analysis, therefore data do not reflect all 17 countries. Based on the information available, three layers in the attitudes to change can be identified.

Portugal, Italy, and Germany are countries facing resistance to change due to several reasons:

- Portugal: Teachers are overwhelmed with administrative work, making them reluctant to adapt educational routines unless changes ease their workload.
- Italy: Cultural traditions in agriculture and strong lobbying from the construction sector hinder rapid change. Shifting perspectives through early education is seen as the best strategy.
- Germany: Decentralised education and slow reforms may hinder fast change, but sustainability frameworks provide a foundation for gradual adaptation.

Austria, Spain, Switzerland and Turkey are countries that are willing to adapt.

- Austria: While there is openness to environmental change, soil awareness remains a secondary concern. Supporting teachers with ready-made materials may help integrate soil topics.
- Spain: Universities and regional policymakers are open to soil health education, but small farming communities may resist change that disrupts traditions.
- Switzerland: The public values sustainability, and educators are open to curriculum changes. However, bureaucratic inertia and economic concerns in industrial sectors could slow down implementation.
- Turkey: Fast pace change would most likely not be accepted. Turks seem willing to adapt slowly.

Finally, it seems that the Netherlands and Ukraine are ready to transform

- Netherlands: Acknowledges the need for a major shift in agricultural sustainability and soil health but faces political paralysis at the state level. Experts agree on the urgency of action.
- Ukraine: Aims to align its education system with EU standards, moving away from Russian influence. The country is united in transforming its educational framework.

While most countries recognise the need for soil health education, adaptation varies. Some nations face cultural and bureaucratic resistance, while others are poised for transformation but require structural and political support. Collaboration, funding, and tailored educational materials could help bridge the gaps.

Level of dynamics: from standstill / to gradually changing / to fast & deep change / to chaos

While the dynamics are very country specific, as a broad line, we can see that most countries are in a phase of gradual change, with no nation currently experiencing rapid transformation. Since this was a non-obligatory paragraph, not all countries have been identified.

Conclusions: The overarching results of the country analyses

Three CURIOSOIL partners have analysed 15+ countries and reflected with experts on the result. It brings this set of overarching results:

1. **The time is right.** Across all countries analysed, there is overwhelming support for the core objective of improving soil health through education. There are no stakeholder voices opposing this goal. This suggests a favourable climate for change.

2. **Systematic integration absent.** That said, none of the sixteen countries has yet systematically integrated soil health across all levels of their education system. Switzerland may be the closest, but comprehensive soil curricula remain rare.

3. **School gardening and outdoor learning** often lay the groundwork for soil awareness in early education. A subset of countries adds their traditional outdoor culture to it. However, this momentum is frequently lost in secondary schools due to rigid schedules and strict subject separation.

4. **In decentralised education systems**, introducing topics like soil health requires navigating numerous bureaucracies, creating significant barriers to Mission Soil's path to *swift* curriculum integration.

5. **Budget, time, and staff constraints at classroom level** are mentioned in the national reflection sessions. The absence of soil education is often seen as a result of time, budget, and qualified staff scarcity.

6. **Vertical alignment gap**. Across countries, there is often a gap between soil education strategy and practice. While some take a top-down approach and others allow teacher autonomy, alignment between strategic level and classroom practice remains inconsistent. In some cases, clear strategies lack practical support; in others, vibrant local initiatives exist without national recognition, coordination, or funding. A few countries, however, show strong alignment.

7. **Ethical accuracy and restraints,** when it comes to research and development involving children and their parents, however understandable, are a serious barrier to tool development, evaluation, and improvement.

8. **When *soil* and *education* meet**, both sectors not only need a common language and set of practices, but also catch up with the other's pace of change. Particularly *soil* will face the need to adapt their education routines to the profound change *education* is expected to go through in the years to come.

9. **Vocational Education and Training (VET)**, like gardeners and farmers, is regarded as central to daily soil management routines. However, a cultural resistance against change is referred to at this educational layer specifically.

10. **In urban, landscape, spatial, industrial site, and architectural design**, soil health education has been near absent until today - pioneers excepted. At vision level, awareness has entered just very recently - if at all. Nature management appears often quite familiar with the subject. Junctions are promising fields of practice.

11. **Mainstream agriculture holds the key** to the majority of Europe's soils and experts mention their agency explicitly. CURIOSOIL's country analyses point at their predominant focus on yield produce. In rural areas soil health education is expected to meet resistance, more than in others.

12. **Age matters.** In reflection sessions a divide between the young and the seniors is brought up as a barrier for soil health improvement, especially in the countryside. While the younger generation being aware of contemporary soil issues, the older relying on a near-unquestioned utilisation of pesticides for professional (agricultural) and private (gardening) use. If Mission Soil is after *swift* change, this intergenerational gap will deserve policy attention.

13. **Community of Practice vitality differs significantly** across countries. Despite general agreement on objectives, the majority may not survive without ongoing support, which may influence the longevity of impact.

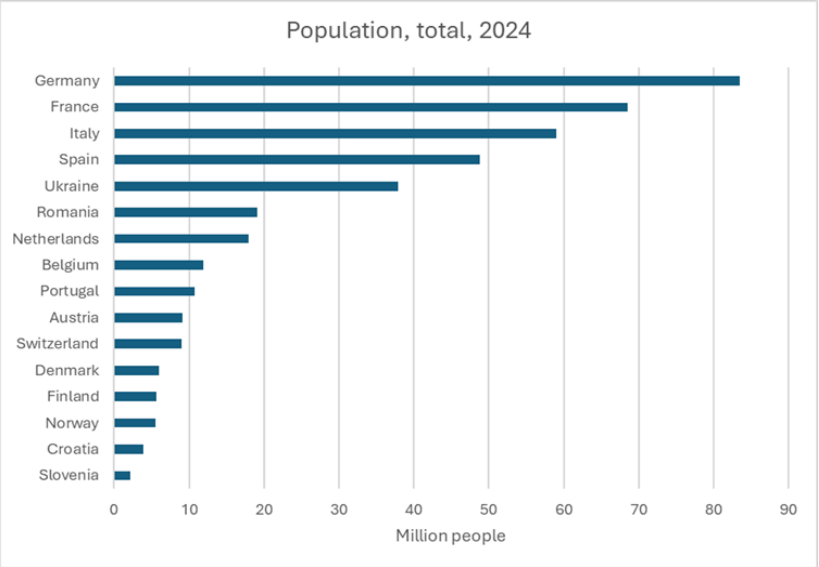
14. **A shift in soil routines takes decades**, while CURIOSOIL runs for only four years. To track a country's pace of progress, depth of change and newly emerging issues - be it material, psychological, or social - some form of reflection timeline would suit its policy effectiveness. CURIOSOIL adds to this with an online report version for expert updates and public inspiration. Annexes 4/5/6 give templates for analysing unlisted countries and reflection sessions. Managing updates is not embedded in CURIOSOIL.

Part B: Soil in Education - the Countries' Narratives

[from here this version of the report is under construction]

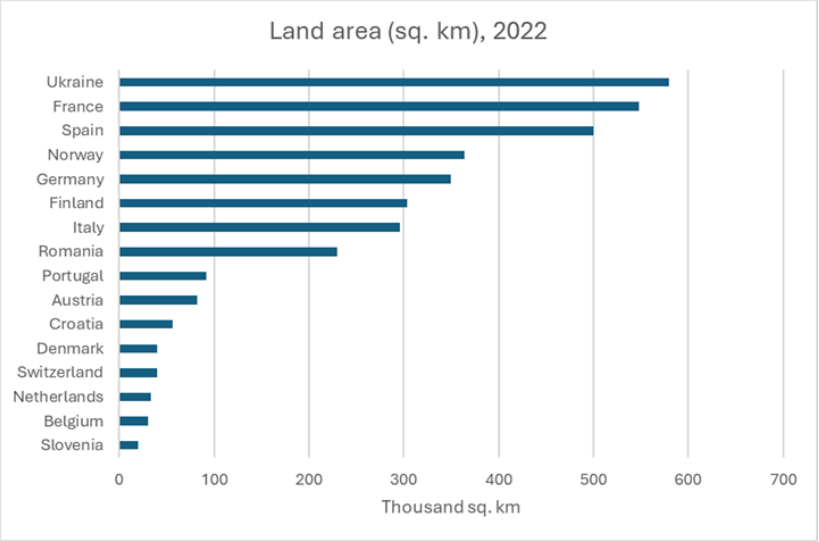
Annex 3: Land Use in 15+ European Countries

[from here this version of the report is under construction]



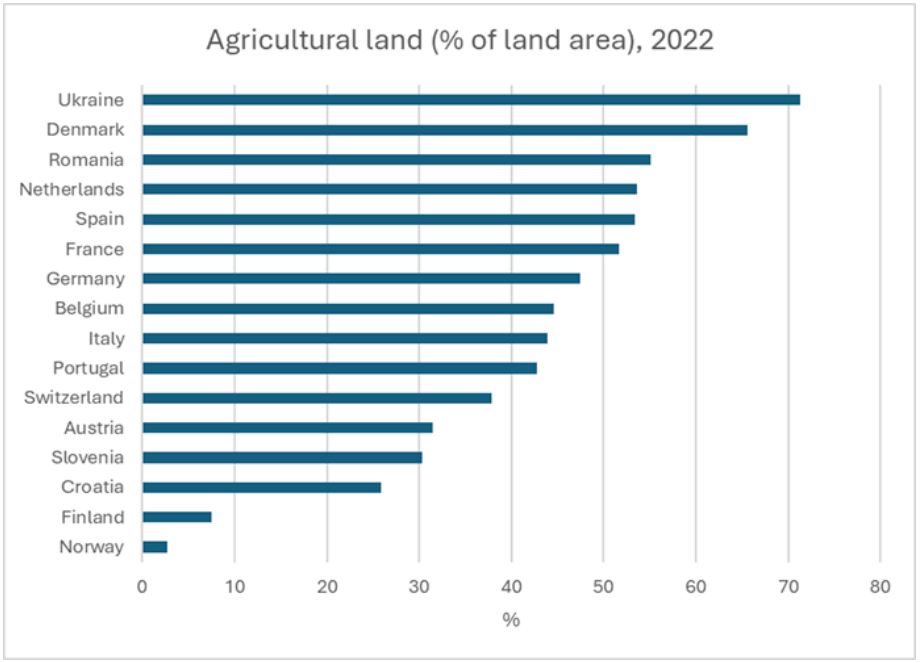
Population, total (2024) – Germany, France, Italy, Spain, Ukraine, Romania, Netherlands, Belgium, Portugal, Austria, Switzerland, Denmark, Finland, Norway, Croatia, Slovenia.

Total population is based on the de facto definition of population, which counts all residents regardless of legal status or citizenship. The values shown are midyear estimates. Source: World Population Prospects, United Nations (UN), uri: population.un.org/wpp



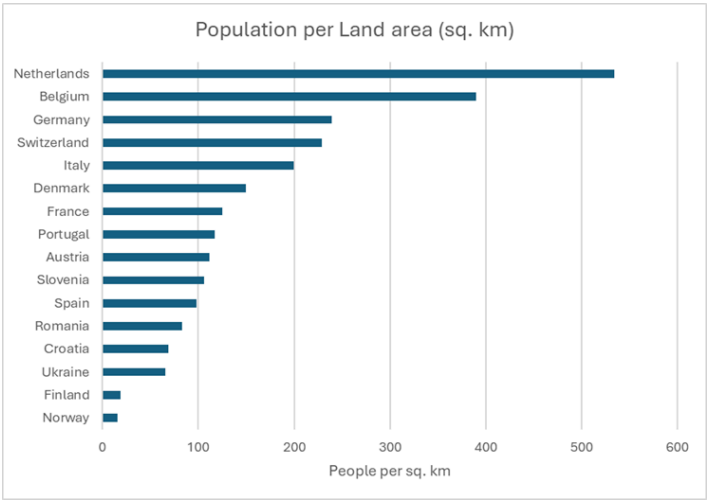
Land area (sq. km), 2022 – Ukraine, France, Spain, Norway, Germany, Finland, Italy, Romania, Portugal, Austria, Croatia, Denmark, Switzerland, Netherlands, Belgium, Slovenia.

Land area is a country's total area, excluding area under inland water bodies, national claims to continental shelf, and exclusive economic zones. In most cases the definition of inland water bodies includes major rivers and lakes. Source: FAOSTAT, Food and Agriculture Organization of the United Nations (FAO), uri: fao.org/faostat/en/#data/RL

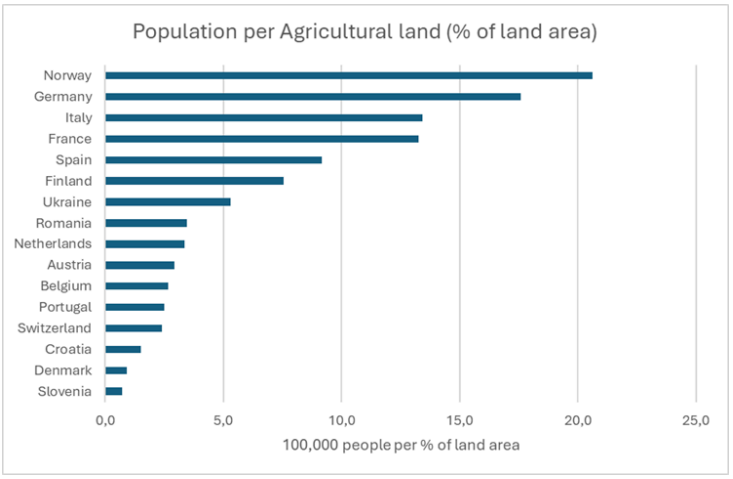


Agricultural land (% of land area), 2022 – Ukraine, Denmark, Romania, Netherlands, Spain, France, Germany, Belgium, Portugal, Italy, Switzerland, Austria, Slovenia, Croatia, Finland, Norway.

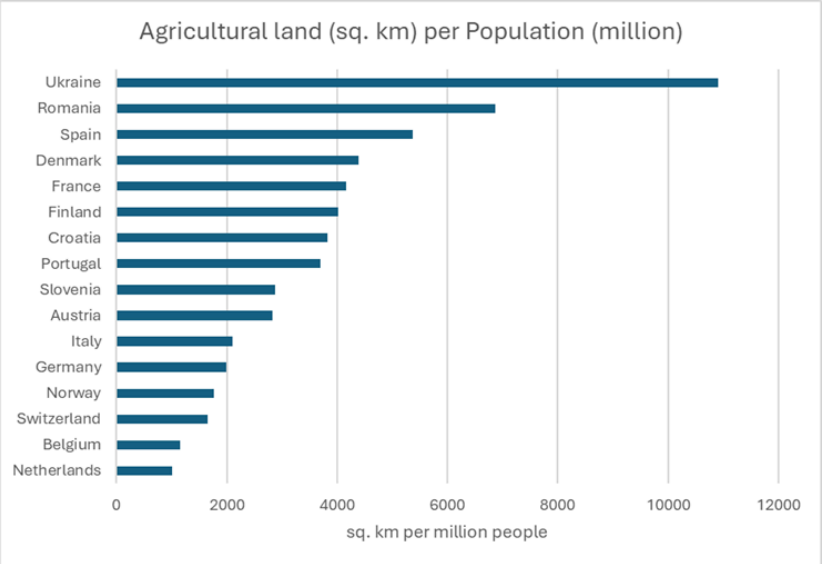
Agricultural land refers to the share of land area that is arable, under permanent crops, and under permanent pastures. Arable land includes land defined by the FAO as land under temporary crops (double-cropped areas are counted once), temporary meadows for mowing or for pasture, land under market or kitchen gardens, and land temporarily fallow. Land abandoned as a result of shifting cultivation is excluded. Land under permanent crops is land cultivated with crops that occupy the land for long periods and need not be replanted after each harvest, such as cocoa, coffee, and rubber. This category includes land under flowering shrubs, fruit trees, nut trees, and vines, but excludes land under trees grown for wood or timber. Permanent pasture is land used for five or more years for forage, including natural and cultivated crops.
Source: FAO electronic files and web site, Food and Agriculture Organization of the United Nations (FAO), publisher: Food and Agriculture Organization of the United Nations (FAO).
(Mind that nationally the definition of 'land' may differ. For example, in the Netherlands, 53% is agricultural land, according to this data set. If one excludes the Dutch subaqueous soils however, the percentage of agricultural land will increase to 66%.)



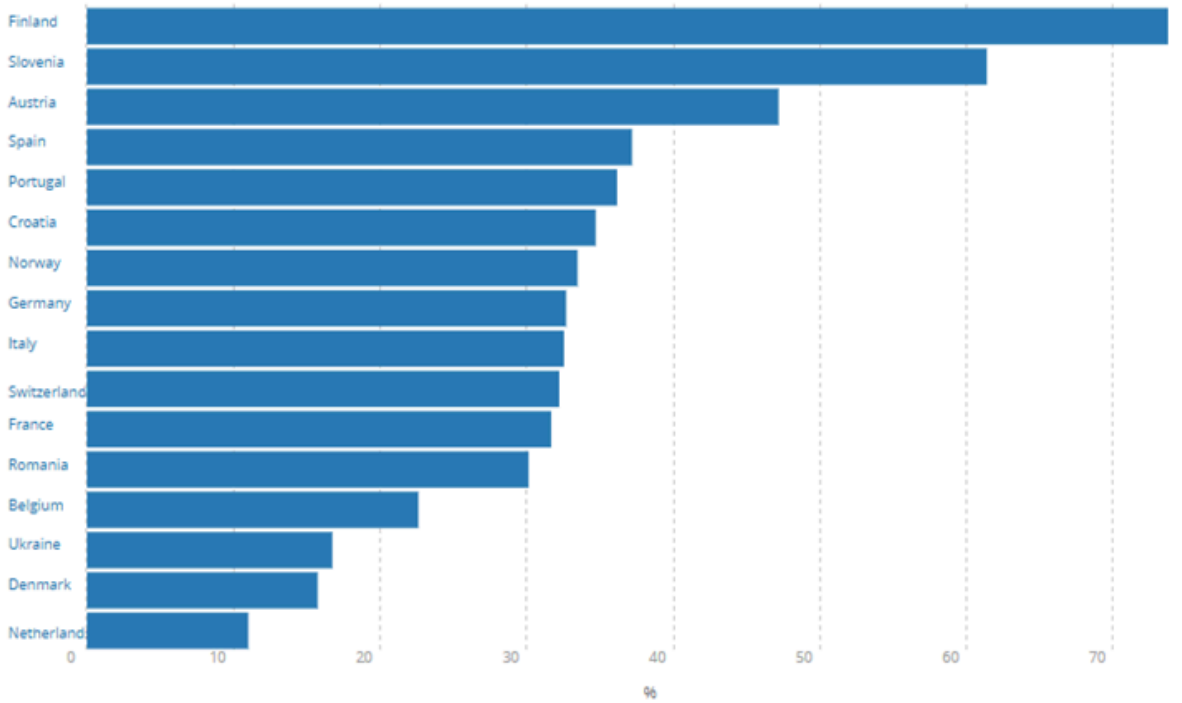
Population, total per **land area (sq km)** – Netherlands, Belgium, Germany, Switzerland, Italy, Denmark, France, Portugal, Austria, Slovenia, Spain, Romania, Croatia, Ukraine, Finland, Norway.



Population, total per **agricultural land area (% of land area)** – Norway, Germany, Italy, France, Spain, Finland, Ukraine, Romania, Netherlands, Austria, Belgium, Portugal, Switzerland, Croatia, Denmark, Slovenia.

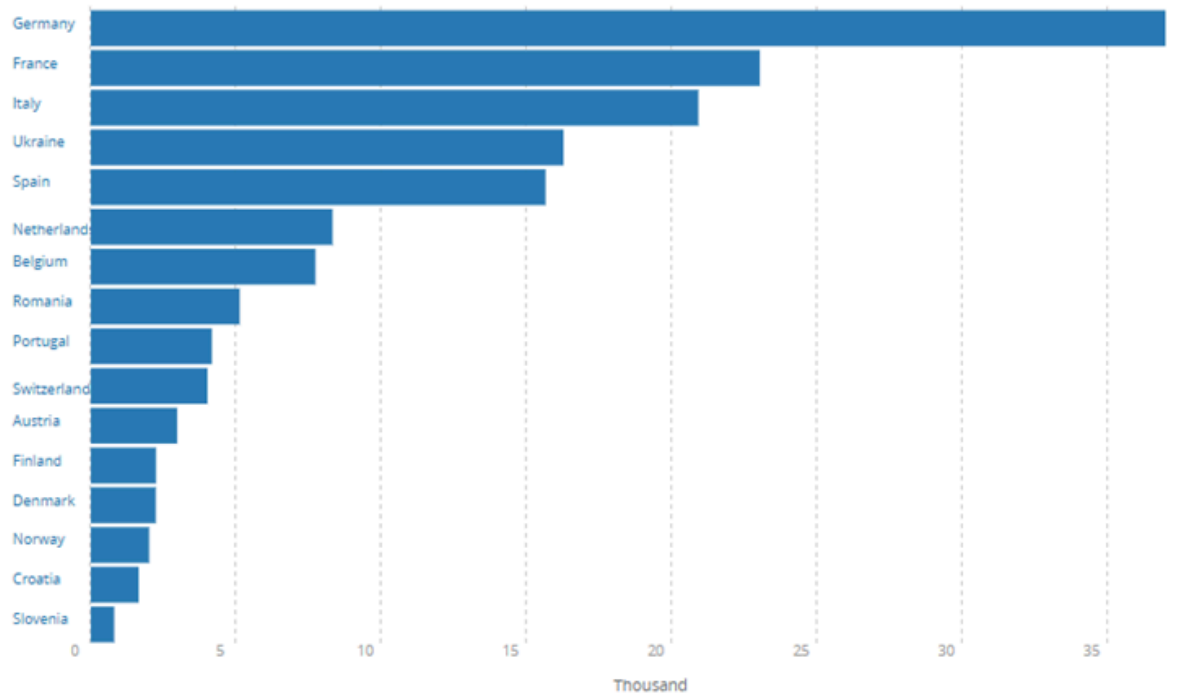


Agricultural land (sq. km) per **total population** – Ukraine, Romania, Spain, Denmark, France, Finland, Croatia, Portugal, Slovenia, Austria, Italy, Germany, Norway, Switzerland, Belgium, Netherlands.



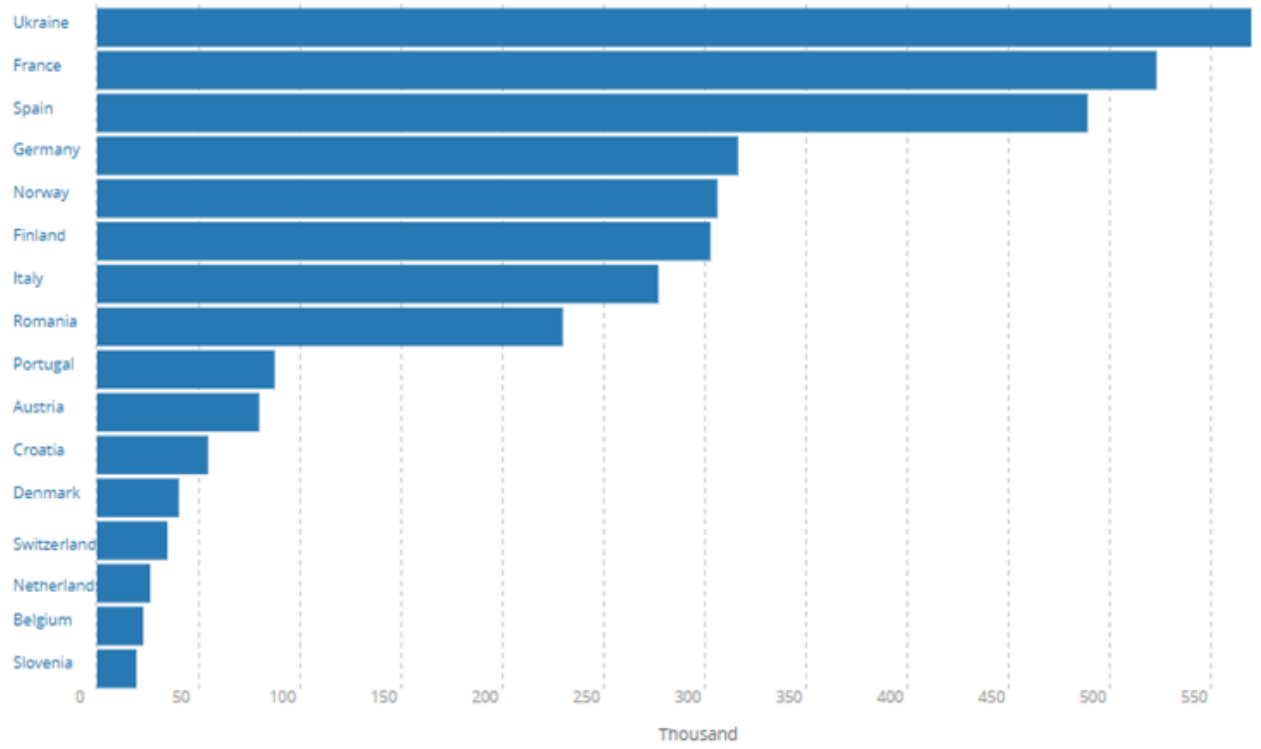
Forest area (% of land area) – Finland, Slovenia, Austria, Spain, Portugal, Croatia, Norway, Germany, Italy, Switzerland, France, Romania, Belgium, Ukraine, Denmark, Netherlands.

Forest area (% of land area) is the share of total land area that is under natural or planted stands of trees of at least 5 meters in situ, whether productive or not, and excludes tree stands in agricultural production systems (for example, in fruit plantations and agroforestry systems) and trees in urban parks and gardens. Source: FAOSTAT, Food and Agriculture Organization of the United Nations (FAO), uri: fao.org/faostat/en/#data/RL



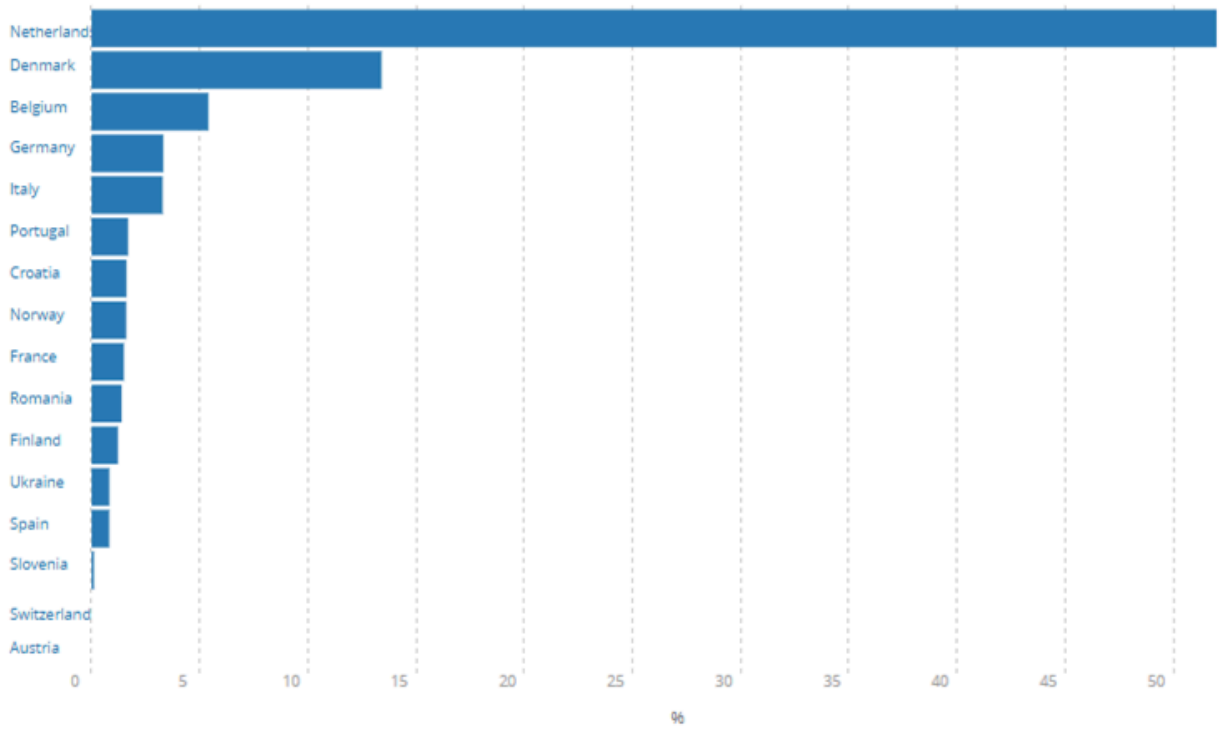
Urban land area (sq. km) – Germany, France, Italy, Ukraine, Spain, Netherlands, Belgium, Romania, Portugal, Switzerland, Austria, Finland, Denmark, Norway, Croatia, Slovenia.

Urban land area in square kilometers, based on a combination of population counts (persons), settlement points, and the presence of nighttime lights. Areas are defined as urban where contiguous lighted cells from the nighttime lights or approximated urban extents based on buffered settlement points for which the total population is greater than 5,000 persons. Source: Low Elevation Coastal Zone (LECZ) Urban-Rural Population and Land Area Estimates, Version 2, Center For International Earth Science Information Network (CIESIN) - Columbia University, uri: earthdata.nasa.gov/data/catalog/sedac-ciesin-sedac-lecz-urplaev2-2.00



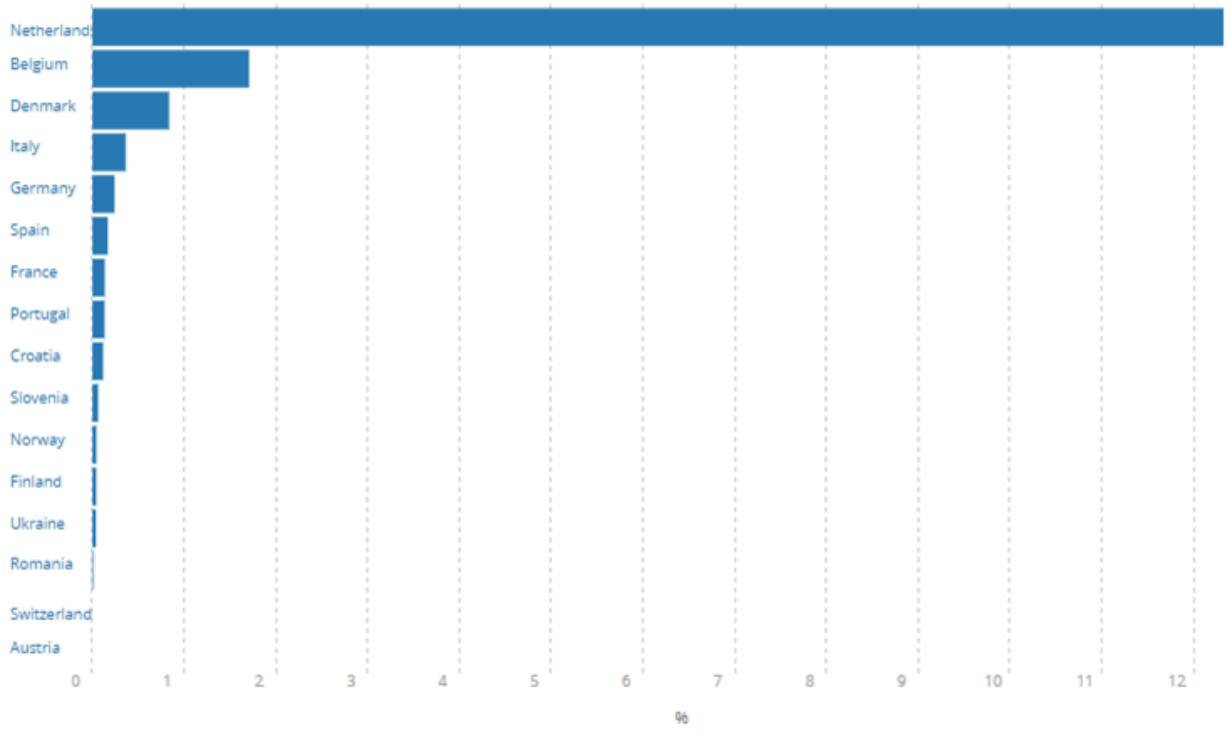
Rural land area (sq. km) – Ukraine, France, Spain, Germany, Norway, Finland, Italy, Romania, Portugal, Austria, Croatia, Denmark, Switzerland, Netherlands, Belgium, Slovenia.

Rural land area in square kilometers, derived from urban extent grids which distinguish urban and rural areas based on a combination of population counts (persons), settlement points, and the presence of Nighttime Lights. Areas are defined as urban where contiguous lighted cells from the Nighttime Lights or approximated urban extents based on buffered settlement points for which the total population is greater than 5,000 persons. Source: Low Elevation Coastal Zone (LECZ) Urban-Rural Population and Land Area Estimates, Version 2, Center For International Earth Science Information Network (CIESIN) - Columbia University, uri: earthdata.nasa.gov/data/catalog/sedac-ciesin-sedac-lecz-urplaev2-2.00



Land area where elevation is below 5 meters (% of total land area) – Netherlands, Denmark, Belgium, Germany, Italy, Portugal, Croatia, Norway, France, Romania, Finland, Ukraine, Spain, Slovenia, Switzerland, Austria.

Land area below 5m is the percentage of total land where the elevation is 5 meters or less. Source: Low Elevation Coastal Zone (LECZ) Urban-Rural Population and Land Area Estimates, Version 3, Center For International Earth Science Information Network (CIESIN) - Columbia University, uri: earthdata.nasa.gov/data/catalog/sedac-ciesin-sedac-lecz-urplaev3-3.00



Urban land area where elevation is below 5 meters (% of total land area) – Netherlands, Belgium, Denmark, Italy, Germany, Spain, France, Portugal, Croatia, Slovenia, Norway, Finland, Ukraine, Romania, Switzerland, Austria.

Urban land area below 5m is the percentage of total land where the urban land elevation is 5 meters or less. Source: Low Elevation Coastal Zone (LECZ) Urban-Rural Population and Land Area Estimates, Version 3, Center For International Earth Science Information Network (CIESIN) - Columbia University, uri: earthdata.nasa.gov/data/catalog/sedac-ciesin-sedac-lecz-urplaev3-3.00

Annex 2: DIY—A Warm Welcome to our Future Contributors

National education systems are in constant flux and soil health improvement will stay an issue for decades to come. Therefore, Annex 3 and 4 lend anyone a hand who wishes to either update their own country data or add a country that hasn't been analysed by CURIOSOIL.

—

Dear reader / dear contributor,

Welcome to our CURIOSOIL country analysis guide. The topic of research is to what extent soil health is integrated in the national education system(s). Please feel invited to contribute, even from outside Europe.

This document is designed to become a living document. The framework is generic. Your country's future dynamics can be added. To answer all soil education questions per country - and update them - is too much work for our CURIOSOIL team, so we're all too glad you're willing to cooperate. Together we paint the state our education systems are in when it comes to soil health. Any questions can be sent to Harry te Riele harry.teriele@esha.org or - better yet - Myrthe Stienstra myrthe.stienstra@esha.org.

Copy this doc / privacy / my country is not on the list

Before beginning, **please make your own copy of this document**. You can either choose to fill in all answers and mail the result to CURIOSOIL/ESHA or mail us your intermediate fragments and promise to send the rest later. Either way we're okay. Please tip your professional friends and colleagues about this document. More contributions probably result in a more complete picture of your country's state. Please send us your contributions with your mail address and name. To keep your personal data private, we'll anonymise and then redistribute them. CURIOSOIL is funded for 16 countries. Yours' not on the list? In Annexes 2 and 3 supply you with empty formats. We're glad to receive your results. Make sure to include the name of your country.

who you are / what your position is

Did you make your own copy of this guide? Good. Our first questions are about yourself: who are you and what is your position against all this?

> My name is: [your name]
>
> My mail address is: [your mail address]
>
> I'm a [your position, like researcher, teacher, school head, student, member of soil health community, farmer, coach, education tools designer, publisher, actor, policy maker, …]
>
> I give ESHA permission to store my privacy-sensitive data [yes/no].

A report in two parts

The reporting splits in two parts. Part A contains the narrative of soil education across Europe. ESHA will edit this, with phrases typically like: *"based on our country analyses one can roughly distinguish five clusters when it comes to soil education, namely...",* and *"Currently some overarching trends in European soil education are …")*. Please feel free already to add what you know on this topic.

Part B contains 15+ country-specific analyses. You're invited to update the data or add a new country.

B starts with a description of a country's education system, its routines and obligations. A typical phrase could be: *"The Austrian national education system works as follows: …"*. The Eurydice platform will be our kind friend for getting that part started. You might add what you think is missing for your country.

Next, B can be filled with each country's narrative on soil education: where it came from historically, how its education covers 'soil' today, and where it seems to be heading. Typical phrase: "*The Austrian narrative on soil in education is as follows. Historically, Austria has been situated in ...*".

For composing such a narrative we suggest scanning a country's soil education against dimensions. Discussing the outcome together, some of the scores may be depicted graphically. A spider graph, for instance, could indicate a country's progress against each dimension.

For whom we write this

Part A has a paragraph *who we write this for*. If we write the report well, it could become useful to a broad audience: policy developers, politicians and decision makers, teachers and school-heads, researchers and activists, farmers and urban designers, editors and educational tool developers.

Methodology

To keep our texts digestible for a broad audience, Part A starts with general remarks on the data gathering methods. Each country team (task team) however is supposed to add their data gathering choices in more detail in their chapter.

That's it. Thanks again for your comments and answers. CURIOSOIL: Harry te Riele, Myrthe Stienstra.

Annex 3: DIY—Empty Country Analysis Format

National education systems are in constant flux and soil health improvement will stay an issue for decades to come. Therefore, this Annex lends anyone a hand who wishes to either update their country data or add a country chapter that is not on CURIOSOIL's list. Here's CURIOSOIL's proposal for your country analysis.

Team and approach

Describe who wrote this analysis and when it was last updated. Describe the chosen data gathering method. We suggest three steps: the quick overview, the in-depth analysis and the synthesis/report writing.

The quick overview

1. For a first description of a European country's national education system, check Eurydice. It provides an overview of national education systems. You may find links to websites and documents with national curriculum requirements and laws. Eurydice can also help you to already fill in the first dimensions of the obligatory part for each country's analysis.
2. For a quick overview of up-to-date content literature, try search words like soil, policy, education. In case of unsatisfactory results, use closely related or indirectly related terms. You can check our common research infrastructure for key word inspiration.
3. Prepare some preliminary semi- or non-structured interviews with national (soil) education experts to ask what has historically been important in this country, what vocabulary fits the national context, and what to look for in general. Our framework dimensions may inspire.
4. Write initial findings. Prepare questions for interviews and in-depth analysis.
5. Meet CURIOSOIL partners to share experience and discuss preliminary insights.

The in-depth analysis based on your specific methodology mix

6. Do your in-depth analysis and write the results.

Note: Please be very clear in case you use online agents like DeepL for translation or AI for analysis. Interpretations and possibly the national report should then be reviewed by an education (policy) expert and a soil (policy) expert from that country before reports are delivered to ESHA.

The synthesis & report writing

7. For your synthesis and reporting, see next page.

Summary: the narrative on soil in education in your country

Write a summary of the findings (+/- 500 words), plus some remarkable good practices, key networks, stakeholders, and some current policy recommendations as a bulleted list.

Good practices

(May be a bulleted list)

Education system & soil education policy

How Your Country educates: structure, curriculum freedom - dynamics

Describe how education is structured. For European countries, the Eurydice website can be of great help here.

Describe the extent to which schools and courses are free to determine their curriculum. From nation-wide top-down directed to designable per sector, institute, course or even per teacher. Differences per education type and level. Note: in some countries regions or even cities are more influential than the nation's level.

If autonomy is high, take a closer look at educational documents and the role of educational institutions at a regional and more local level. If autonomy is low, investigate national policies and the role of political institutions at the national level to identify factors influencing soil education integration.

How Your Country educates soil health

Describe the existing regulations, policies, and support mechanisms related to soil education at primary, secondary, and post-secondary level and a brief description of each. Divisions like primary/secondary/tertiary/lifelong learning can be helpful. Think of any funding available for (extracurricular) soil activities in schools, a school garden, excursions, etc. Think of any (political) support mechanisms/budgets available for citizens that want to (re)school themselves in soil areas, etc.

Example 1: WUR, the Netherlands: Wageningen Pre-University (secondary education: Wageningen Pre-University - WUR) and Wageningen Science Hub (primary education: Science Hub - WUR).
Example 2: Province North-Brabant, the Netherlands: three years of on-site coaching on soil quality for 350 farmers.
Example 3: NL: Municipalities support community garden initiatives, vermicomposting initiatives, there is an annual national competition 'tegelwippen' (https://www.nk-tegelwippen.nl).

Awareness per education type

Describe the extent to which students are educated in soil in pre-primary, primary, and secondary education. From absent, via weakly present to top-of-mind issue. Evaluate the explicit inclusion of soil and soil health in educational policies and curriculum guidelines. Assess the extent to which soil-related concepts, principles, and practices are addressed across different educational levels (primary, secondary, tertiary). Is there a difference in this between formal and non-formal educational settings?

Describe the post-secundaries that pay special attention to soil. Vocationals, BSc's, MSc's, PhD's, professional / lifelong training.

Current policy recommendations

(May be a bulleted list)

Integration: from singular issue - to balanced perspectives

Describe the degree to which soil awareness/literacy is singular-issue related. The balance between aspects/perspectives like chemical/physical/biological/legal/economy. Whether it is scattered across disciplines or bridging them.

Policy—practice—theory gap

Describe whether soil education aims are in line with EU objectives. Describe whether soil education objectives match educational budgets, methods, course materials and whatever else it takes to teach.

Q's: if you have entries in a country, try and find whether soil theory and practical experience are two worlds apart or seem well-connected. Try and find whether soil science seems a solitary world or is interwoven in other disciplines. Whether soil (health) education is in line with current EU objectives. And whether soil education objectives match educational budgets, methods, course materials and whatever else it takes to teach.

Attitudes and dynamics in soil education

Your country's historic landmarks in soil health awareness

Highlight historic landmarks in soil awareness, resulting in the current overall situation related to soil.

Your country's integration levels

Describe the extent to which soil awareness/literacy is singular-issue related. The chemical/physical/biological/legal balance. The level of scatteredness or integration across disciplines.

Geography-specific, stakeholder-specific

Q: If you have entries in a country, try and find to what extent soil education is adapted to geography. Does it distinguish between rural, peri-urban, and urban settings? Does it target industrial sites? Villages? Metropoles? Farmland?

Q's: Are courses targeted at stakeholders? Think of house owners, architects and landscape designers, urban planners, farmers, industrial site managers, leasehold organisations and brokers, policy makers and law enforcers, ngo's and citizen's co-operatives.

Your country's attitude to change

Q: If you have done research, interviews, and perhaps meetings in a country, what general attitude would you then expect the moment soil (health) education is intensified? Do or do you not expect a general willingness to adapt the educational routines? An easy adoption or resistance? From whom? What when deep change in a short time span is regarded as necessary?

Your country's dynamics

Q's: If you have entries in a country, what is the current level of soil education dynamics? A near stand-still? Developing gradually? Rapid and deep change? Chaos? What is foreseen for the near future?

Additional remarks

If you have some, please write them down here.

Key networks & stakeholders

List relevant and/or consulted education/think tanks/lobby organisations. Provide brief descriptions (+/- 50 words) and, if possible, contact details.

Congratulations. You're done.

Annex 4: DIY—Future Reflection Session Guide

Education systems are in constant flux and soil health will stay an issue for some decades to come. Therefore, this Annex lends anyone a hand who wishes to update their country analysis in an expert reflection setting. Within CURIOSOIL we've gathered experts from education, policy making, and soil backgrounds per country. We took some time for these meetings: between 1.0 and 1.5 hours worked out well.

Focus Group programme and guiding questions

90 min. total	Programme	Guiding questions
15 min	Introduction	- 3 minute late start - Welcome (1min), this session will be recorded - Introducing EU Mission Soil. Introducing CURIOSOIL as a project. Introducing task of this country analysis report within CSoil (4 min) - Each country is different (both edu & soil) (5 min) - Personal introductions (1 min pp) - Main conclusions for your country (2 min) - Touching upon other country clusters as a contrast (2 min)?
10 min	Discuss your country analysis at meta level / global impression	- What's your general opinion on your country's analysis? (3 min per person)
30 min	Good/Inspiring practices & stakeholders	- Q1: Do the good practices in your country's analysis cover the range that you find important? - Q2: Do the stakeholders mentioned cover the range that you find important? - Q3: Do the policy recommendations mentioned cover the issues that you find important (regarding soil and education)? - Q4: What are critical aspects of the national educative system, educative policies and soil education that should be taken into account for policy making, specifically regarding the level of autonomy in curriculum development and the role of educational institutions and other key stakeholders?
35 min	Discuss your country analysis 2: text suggestions	Go through the different sub-sections - Q1: Are there any major mistakes in the analysis of your country? - Q2: Are there any important points missing from the analysis of your country? - Q3: Do you foresee strong resistance against systematic teaching of soil health at any of the education levels?

10 min	Closing	Closing questions - Q1: What did this meeting bring you? - Q2: Would you like to stay involved? - Q3: Do you feel like the analysis is (still) on the right track concerning your country? Tell what will happen next in CURIOSOIL: Let them know about any upcoming national events or co-creation workshops for policy recommendations for school heads & policy makers. For instance between July 2025 – July 2026. “If you know of any scientific paper, national guidelines, policy documents related to soil in your educational curriculum that we should be aware of in your country, please share by email.” “You might check other projects EU Mission Soil: https://mission-soil-platform.ec.europa.eu/project-hub/funded-projects-under-mission-soil” Thank the focus group participants

Leading Q’s for session leader to take note of:

What stood out to you?
Were the topics ‘policy making’, ‘education’ and ‘soil health’ well-balanced?
Who was leading the conversation? *Who coloured this analysis most?*

Remember to compliment & encourage the group from time to time!

For reporting

Focus group [country]	
Participant First + Last Name	Date:
Organisation	
Please credit my contribution in the following format: mention by name / just mention my organisation / stay anonymous. Examples: Reviewer 1 ([country]), first name + last name, organisation Reviewer 2 ([country]), organisation Reviewer 3 ([country]), anonymous	
Signature	