

# People ~~or~~ with nature

The title 'People or with nature' is centered on a light teal background. The word 'People' is in large black font. The word 'or' is in orange with a black horizontal line through it. The word 'with' is in green. The word 'nature' is in large black font. Various nature-related illustrations are integrated: a person in a red shirt and purple pants is upside down above the 'P'; a dragonfly is above the 'e'; a person with a red hat and blue pants is hanging from the 'o'; a person with a red hat and purple pants is holding a red telescope to the right of 'with'; a hummingbird is to the right of 'with'; a white goat with horns is above the 'n'; a person in a blue shirt is picking purple flowers into a basket below 'with'; a yellow frog is below 'n'; and blue flowers are to the left of 'n'.

**Busting 24 myths  
to reverse biodiversity loss and drive transformative change  
through Nature-based Solutions**

Booklet based on NetworkNature Annual Event 2024 Report

# Introduction

We have all heard it before, perhaps even believed it: *‘Mosquitoes are attracted to light’*. The truth is that they are drawn by the carbon dioxide we exhale and the odour we emit, rather than by our lamps. Yet, even after learning the alternative explanation, many will still find themselves reaching for the lights on summer evenings to prevent unwanted intrusion.

This small, yet common misconception illustrates the enduring power of myths: ideas shaped by our education, environment and personal experiences, becoming deeply rooted in our unconscious self and sometimes bypassing reason.

In a world of increasing complexity, myths, or preconceived ideas can offer reassuring narratives that make situations more understandable. Once widespread and commonly accepted by many, myths can take on the weight of reality.

They hold a strong emotional dimension, often resonating with our deepest feelings, fears and aspirations. They influence how we perceive reality, colouring our opinions and guiding our choices, from individual actions to collective decisions in politics, economics and beyond. By doing so, myths act as the silent architects of society, both reflecting and reinforcing its values, concerns and hopes.

Yet, as climate change and biodiversity loss intensify, the persistence of certain myths can hinder the transformative change needed to build more sustainable societies. Preconceived ideas rooted in outdated

practices or incomplete truths can slow down this change by hampering awareness and obstructing the reimagination of systems that tackling these crises demands.

Therefore, bringing about change requires first and foremost challenging myths and shifting perspectives. This can be done not only by disseminating scientific facts, but also raising awareness about how myths shape our understanding of the world, helping us interrogate them critically. Moreover, debunking preconceived ideas requires fostering dialogue between divergent paradigms to allow a more nuanced understanding to emerge.

Storytelling plays a crucial role in this process. Using personal testimonies and experiences will make it easier to deconstruct the most deeply rooted myths by challenging them on the emotional level, breaking through the defences that pure logic sometimes cannot.

In this way, we can open the door to new narratives that inspire action for climate and biodiversity, and aspire to them becoming realities.

This booklet –built on the outcomes of the **NetworkNature Annual Conference 2024 | Busting myths: people or with nature**– brings together and busts 24 myths regarding nature management, governance, and valuation. By exploring the potential of nature and nature-based solutions to shift paradigms, the event aimed at capturing and building on the synergistic relationships between nature and people.

This report was produced by IUCN within the [NetworkNature](#) project.

It is based on 2024 NetworkNature Annual Event, that took place on 25th September 2024, both online and in-person in Brussels, in Belgium. It was organised by IUCN with the contribution from Bruxelles Environnement for the site visits. The Nature of Cities organised a session called “Bust your myth with Comic strips”. Chantal van Ham, from Commonland, moderated the even.

The comic strips were developed by IUCN building on [Silvia Robertelli](#) illustrations developed for NetworkNature.

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# About the event

This year's NetworkNature Annual Event – Busting myths: People or with nature took place on 25th September 2024, both online and in-person in Brussels, in Belgium. It gathered more than 370 participants, including policymakers, local authorities, researchers, land planners and managers, investors and businesses, educators, artists, etc.

The event revolved around myths that practice, research, policy making, and business are debunking or that need to be debunked to bring about transformative change and reverse biodiversity loss. Through case studies, personal and professional insights, research advancements and governance initiatives, 24 speakers from various backgrounds challenged common misconceptions and offered their perspectives on how we can restore, manage, and value the natural world.

The event also showcased **real-life applications of nature-based solutions (NbS)**. An exhibition of 27 posters was hosted during the conference, featuring selected NbS case studies ([access the virtual exhibition here](#)) as well as related state-of-the-art studies, tools, strategies and technical approaches. Participants could also attend an interactive performance developed by [Luis Amalia](#) and engage during site-visits of green urban initiatives organized by **Bruxelles Environnement**: the Maximilien and Sene Parks, and the floating islands in Brussels Port. In a dynamic parallel session, participants were invited to bust their own myths through storytelling and comic strips, facilitated by **The Nature of Cities**.

A full report on the event is available [here](#).

# Busting myths: Regenerating nature

*“Everything, to the smallest creature, has its role and together makes the whole, in which humankind is just one small part.”*

Alexander von Humboldt

# Regenerating nature: A Paradigm Shift in Soil and Water management

# Under climate change, free-flowing rivers ~~dams~~ are more needed than ever

Belletti, B., García de Leaniz, C. et al. 2020. More than one million barriers fragment Europe's rivers. *Nature*. 588, 436-441. <https://doi.org/10.1038/s41586-020-3005-2>

Berg, M. et al. 2024. Assessing the IUCN global standard for nature-based solutions in riverine flood risk mitigation. *Environmental Development*. 51, 101025. <https://doi.org/10.1016/j.envdev.2024.101025>

Carolli, M., García de Leaniz, C. et al. 2023. Impacts of existing and planned hydropower dams on river fragmentation in the Balkan Region. *Science of the Total Environment*. 871. <http://dx.doi.org/10.1016/j.scitotenv.2023.161940>

Dottori, F. et al., 2023. Cost-effective adaptation strategies to rising river flood risk in Europe. *Nature Climate Change*. 13, 196-202. <https://doi.org/10.1038/s41558-022-01540-0>

García de Leaniz, C., O'Hanley, J.R., 2022. Operational methods for prioritizing the removal of river barriers: Synthesis and guidance. *Science of the Total Environment*. 848, 157471. <https://doi.org/10.1016/j.scitotenv.2022.157471>

Fluixá-Sanmartín, J., Altarejos-García, L., Morales-Torres, A., Escuder-Bueno, I., 2018. Review article: Climate change impacts on dam safety. *Nat. Hazards Earth Syst. Sci.* 18, 2471-2488. <https://doi.org/10.5194/nhess-18-2471-2018>  
Li, Y., et al., 2023. Diminishing storage returns of reservoir construction. *Nature Communications*. 14, 3203. <https://doi.org/10.1038/s41467-023-38843-5>

Parasiewicz, P. et al 2023. Over 200,000 kilometres of free-flowing river habitat in Europe is altered due to impoundments. *Nature Communications*. 14, 6289. <https://doi.org/10.1038/s41467-023-40922-6>

Richter, B.D. et al., 2024. New water accounting reveals why the Colorado River no longer reaches the sea. *Communications Earth & Environment*. 5, 134. <https://doi.org/10.1038/s43247-024-01291-0>

Schmitt, R.J.P., Rosa, L., 2024. Dams for hydropower and irrigation: Trends, challenges, and alternatives. *Renewable and Sustainable Energy Reviews*. 199, 114439. <https://doi.org/10.1016/j.rser.2024.114439>

Zhou, K., et al., 2024. Urban flood risk management needs nature-based solutions: a coupled social-ecological system perspective. *npj Urban Sustainability*. 4, 25. <https://doi.org/10.1038/s42949-024-00162-z>

Myth

**Under climate change, dams are more needed than ever**

Speaker

**Carlos García de Leániz**

**AMBER | Swansea University**

Professor and Chair in Aquatic Biosciences at Swansea University, UK, and Chairman of The Blue Rivers Foundation. His main research expertise is on fish conservation and river restoration. He led the AMBER Horizon project on adaptive management of barriers in European rivers.

The water crisis, exacerbated by climate change, is characterised by either too much or too little water, depending on the region. In this context, many stakeholders advocate to build more dams to fully utilize water resources, store more water, generate clean energy and prevent flooding. However, these statements are not necessarily accurate.

If rivers were fully used, 2 billion people would not have access to drinking water, 500 million people leaving in deltas would suffer from the impacts created by the loss of sediment transport, and 66 million people dependent on freshwater and coastal fisheries would lose their livelihoods and jobs. For example, Colorado River is a “fully used” river and the consequences for the people and the environment are profound.

Between 7% to 20% of the water stored in large reservoirs is lost through evaporation, and this amount is expected to increase under climate change. Moreover, the lifespan of many dams is decreasing due to silting, with the life expectancy of many being

less than 80 years, since they were built at the same time. Simulations suggest a 70% shortfall in storage capacity in the near future.

Reservoirs account for 4% of greenhouse emissions and hydropower represents only 10% of renewable energy sources in Europe. Furthermore, hydropower does not necessarily require dams, as alternative technologies that are being developed can be upscaled.

Recent flood events suggest that dams are not reliably preventing flooding, which is causing annual losses exceeding 8 billion euros. Dams are also more likely to fail under climate change. In fact, it is claimed that climate change is weaponizing dams.

But there are alternatives to dams such as recharged aquifers, restored floodplains, riparian areas and wetlands, remaindering, and changing agricultural techniques to precision agriculture.



# To have high yield, we need to **work with** ~~fight~~ nature

Myth

**To have high yield, we need to fight nature**

Speaker

**Marco Anselmo**  
**L'ortö 'n'te fasce**

With an academic background in industrial ecology and sustainability, he started the agro-ecological farm L'ortö 'n'te fasce in 2021 in the Piedmont region, Italy.

It is often assumed that achieving high yields requires fighting nature. This misconception originated during the Green Revolution in the 1950s, when traditional agricultural practices were replaced with intensive agricultural practices. This shift mainstreamed the use of high-yield crops, pesticides, and herbicides. However, this approach ignored agriculture's dependence on ecosystem services—such as pollination, water retention, and biodiversity—, its capacity to provide them, and led to numerous negative outcomes, including biodiversity loss, soil erosion, and water and marine pollution.

It is nevertheless possible to align the provision of ecosystem services with achieving high yields. Agroecology, an umbrella concept encompassing various

approaches to integrating ecological principles into farming, offers a viable solution. It emphasizes biodiversity, water retention, and soil health, with practices tailored to specific regions and climates. Data from regenerative farms demonstrate yields comparable to those of intensive agriculture but with significant environmental benefits.

Agroecological practices are applied every day in L'ortö 'n'te fasce farm, where a community-supported agriculture (CSA) project is using, between others, intercropping, cover cropping, minimal tillage, mulching, and natural fertilization. A support network of farmers is also key, fostering shared knowledge to optimize sustainable farming practices.



Global consequences of land use. Foley, J. A., DeFries, R., Asner, G. P., Barford, C., Bonan, G., Carpenter, S. R., Chapin, F. S., Coe, M. T., Daily, G. C., Gibbs, H. K., Helkowski, J. H., Holloway, T., Howard, E. A., Kucharik, C. J., Monfreda, C., Patz, J. A., Prentice, I. C., Ramankutty, N., & Snyder, P. K. *Science*, 309(5734), 570–574. (2005). <https://doi.org/10.1126/science.1111772>

Agroecology: Principles for the conversion and redesign of farming systems. Nicholls, C. I., Altieri, M. A., & Vazquez, L. (2016). *Journal of Ecosystem & Ecography*, 55(1), 1–8. <https://doi.org/10.4172/2157-7625.55-010>

Solutions for a cultivated planet. Foley, J. A., Ramankutty, N., Brauman, K. A., Cassidy, E. S., Gerber, J. S., Johnston, M., Mueller, N. D., O'Connell, C. S., Ray, D. K., West, P. C., Balzer, C., Bennett, E. M., Carpenter, S. R., Hill, J., Monfreda, C., Polasky, S., Rockström, J., Sheehan, J., Siebert, S., Tilman, D., & Zaks, D. P. M. (2011). *Nature*, 478(7369), 337–342. <https://doi.org/10.1038/nature10452>

Ecosystem services and agriculture: Tradeoffs and synergies. Power, A. G. (2010). *Philosophical Transactions of the Royal Society B: Biological Sciences*, 365(1554), 2959–2971. <https://doi.org/10.1098/rstb.2010.0143>

# Too ~~small~~ important not to be considered

J. Biggs, S. von fumetti and M. Kelly-Quinn. The importance of small waterbodies for biodiversity and ecosystem services: implications for policy makers. *Small water bodies*. *Hydrobiologia* 793, 3–39 (2017). <https://doi.org/10.1007/s10750-016-3007-0>

Mancuso, G.; Bencresciuto, G.F.; Lavrnić, S.; Toscano, A. Diffuse Water Pollution from Agriculture: A Review of Nature-Based Solutions for Nitrogen Removal and Recovery. *Water* 2021, 13, 1893. <https://doi.org/10.3390/w13141893>

ACA-Agència Catalana de l'Aigua. Caracterització de les masses d'aigua i anàlisi del risc d'incompliment dels objectius de la Directiva Marc de l'Aigua (2000/60/CE) a Catalunya. Agència Catalana de l'Aigua. Departament de Medi Ambient i Habitatge de la Generalitat de Catalunya, Octubre. 2019. Available online: [https://aca.gencat.cat/web/contenut/30\\_Planes\\_i\\_programes/10\\_Pla\\_de\\_gestio/document\\_IMPRESS/sinopsi.pdf](https://aca.gencat.cat/web/contenut/30_Planes_i_programes/10_Pla_de_gestio/document_IMPRESS/sinopsi.pdf)

ACA-Agència Catalana de l'Aigua. 6. Desenvolupament d'un índex integral de qualitat ecològica i regionalització ambiental dels sistemes lacustres de Catalunya. <https://aca.gencat.cat/ca/plans-i-programes/programa-de-seguiment-i-control/>

ACA-Agència Catalana de l'Aigua. 7. Caracterització, regionalització i elaboració d'eines d'establiment de l'estat ecològic de les zones humides de Catalunya. <https://aca.gencat.cat/ca/plans-i-programes/programa-de-seguiment-i-control/>

ACA-Agència Catalana de l'Aigua. 8. Avaluació de l'estat ecològic de les zones humides i ajust dels indicadors de qualitat. Índex QAELS, ECELS i EQAT. <https://aca.gencat.cat/ca/plans-i-programes/programa-de-seguiment-i-control/>

Myth

## Too small to be considered

Speaker

**Anna Terrats**

**Invited by PONDERFUL**

**Catalan Water Agency**

Anna Terrats works at the Catalan Water Agency participating in riverbank restoration and water quality projects for the rivers of Catalonia.

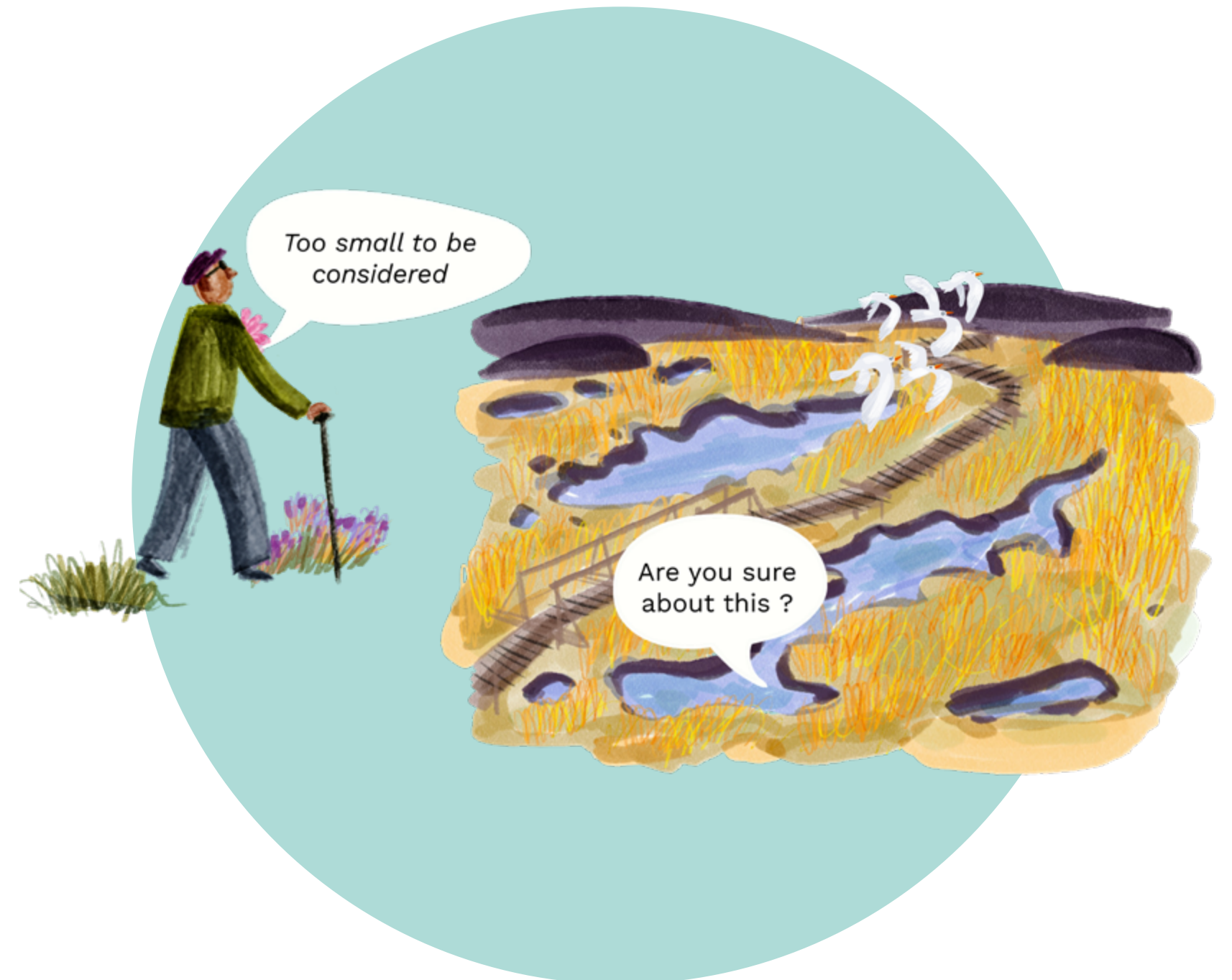
Small ecosystems are often overlooked, as they may appear insignificant. For instance, ponds—very small, shallow water bodies with a maximum surface area of 5 hectares, a maximum depth of 5 meters, and less than 30% emergent vegetation cover—are the most common water body (accounting for 30–50% of standing water worldwide). Yet, they receive very little attention.

Ponds are crucial habitats, supporting 70% of the regional freshwater species pool in European landscapes, including many rare, endemic, and threatened species. They are also more biodiverse than rivers and lakes and provide critical ecosystem services. Despite this, current water protection regulations often exclude them. The EU's Water Framework Directive only mandates

protection for water bodies larger than 50 hectares, while Spanish legislation excludes those smaller than 8 hectares.

To address this gap, the Catalan Water Agency, responsible for the Catalan part of the Ebro Basin, has undertaken efforts to assess and include these smaller ecosystems in water management plans and monitoring cycles. In Catalonia, 63% of water bodies are smaller than 8 hectares, highlighting the importance of this initiative.

Their inclusion involves its assessment every six years using biological, hydro morphological and physicochemical indicators. Additionally, plans are underway to include ponds in a register of protected areas, implement measures to encourage stewardship, and provide funding for their restoration.





# Nature is ~~only~~ about living organisms and their physical environment

Myth

**Nature is only about living organisms**

Speaker

**José F. Martín Duque**

**LIFE Ribermine**

**Universidad Complutense de Madrid**

Professor and Researcher at the IGEO (Instituto de Geociencias), in the Complutense University of Madrid, Spain, and involved in the Life Ribermine project “Fluvial freshwater habitat recovery through geomorphic-based mine ecological restoration in Iberian Peninsula”

For most people, nature is almost exclusively about living organisms. A clear example of this perspective is mine restoration, where restoration projects often focus on planting trees while ignoring landforms. Across the world and for various purposes—from nature restoration to urban and road development—planar or terraced landforms are constructed, and terrains are levelled, often burying natural drainage lines. To manage water, straight lines are drawn, and concrete channels are built.

However, these forms are not stable in the long term and are highly prone to erosion. This approach neglects the fundamental role of geomorphology and natural water flow patterns. In this context, a paradigm shift is

needed in how land restoration and ecological projects are designed, particularly when new landforms are involved.

When working with nature, it is crucial to integrate a broad range of specialists, including geomorphologists, soil scientists, and hydrologists, to treat the physical environment as an essential component of nature.

The “geomorphic restoration” approach designs landscapes to resemble and function as natural landforms, connecting them to watersheds and enhancing both aesthetic and ecological functions. The Life Ribermine project serves as an excellent example of this approach, demonstrating long-term stability and improved landscape integration.



These websites include the updated literature and information about Geomorphic restoration

Life Ribermine website  
<https://liferibermine.com>  
Restauración Geomorfológica  
[www.restauraciongeomorfologica.es](http://www.restauraciongeomorfologica.es)

# Discussion:

## A change of paradigm in water and soil management

### Key barriers:

- Shifting deeply held beliefs
- Resistance to changing expert views: new approaches may be difficult for society to understand and accept, particularly when they challenge methods that have been long considered successful
- Business as usual: Conventional land management approaches- such as building dams, terraced landforms and intensive agriculture - are embedded in different businesses models despite evidence demonstrating detrimental impacts or limited effectiveness. Moving away from these approaches is considered difficult for these stakeholders
- Technical issues, for instance in mapping and monitoring small ecosystems

### How to address them?

- Engage with diverse stakeholders and build trust through communication, good examples and products
- Adapt policies, such as the Common Agricultural Policy (CAP) and the Nature Restoration Law (NRL)
- Communicating uncertainty and mainstreaming adaptive knowledge;
- Improve mapping and monitoring: Coordinates efforts across scales - local to national – and sectors, and in coordination with new technologies

# Regenerating nature: Land uses

## Reports

Objective “Zero net artificialization”: which levers should be used to protect soils? Julien Fosse. France Stratégie. 2019. <https://www.strategie.gouv.fr/english-articles/objective-zero-net-artificialization-which-levers-should-be-used-protect-soils>

Sols artificialisés - Déterminants, impacts et leviers d'action. Collective scientific expertise. 2019. <https://amu.hal.science/hal-01687919/file/artificialisation-des-sols-rapport-en-francais-1.pdf>

## Data and analyses

Portail de l'artificialisation des sols. Cerema / Ministry of Ecological Transition. <https://artificialisation.developpement-durable.gouv.fr/>

Analyse de la consommation d'espaces : période du 1er janvier 2009 au 1er janvier 2023 : <https://doc.cerema.fr/Default/doc/SYRACU-SE/601069/analyse-de-la-consommation-d-espaces-periode-du-1er-janvier-2009-au-1er-janvier-2023>

## Laws

Loi du 22 août 2021 portant lutte contre le dérèglement climatique et renforcement de la résilience face à ses effets. <https://www.legifrance.gouv.fr/jorf/id/JORF-TEXT000043956924>

Loi du 20 juillet 2023 visant à faciliter la mise en œuvre des objectifs de lutte contre l'artificialisation des sols et à renforcer l'accompagnement des élus locaux. <https://www.legifrance.gouv.fr/jorf/id/JORF-TEXT000047866733>

## Law interpretation and guidelines

ZAN – Guide synthétique. Ministry of Ecological Transition. 2023. <https://artificialisation.developpement-durable.gouv.fr/bibliographie/zan-guide-synthetique>

Fascicules de mise en oeuvre de la réforme ZAN (1: définir et observer, 2: planifier, 3: mobiliser les leviers, 4: accompagner). Ministry of Ecological Transition. 2024. <https://artificialisation.developpement-durable.gouv.fr/bibliographie/fascicules-mise-en-oeuvre-la-reforme-zan>

## Awareness-raising tools

Le “ZAN en 20 questions” : quiz grand public pour comprendre le Zéro Artificialisation Nette. Agence de la transition écologique (Ademe). 2024. <https://librairie.ademe.fr/urbanisme-territoires-et-sols/7448-le-zan-en-20-questions-quiz-grand-public-pour-comprendre-le-zero-artificialisation-nette.html>

Videos. Ministry of Ecological Transition. 2024. <https://www.dailymotion.com/playlist/x8e9jg>

# Urban sprawl ~~can~~ cannot go on for ever

## Myth

### Urban sprawl can go on forever

#### Speaker

**Annelaure Wittmann**  
**Ministère de la Transition Ecologique et la Cohésion des Territoires, France**

Land policy and Sobriety Officer at the French Ministry of Ecology, Energy and Territories, she is working on the implementation of the “zero net artificialization” strategy.”

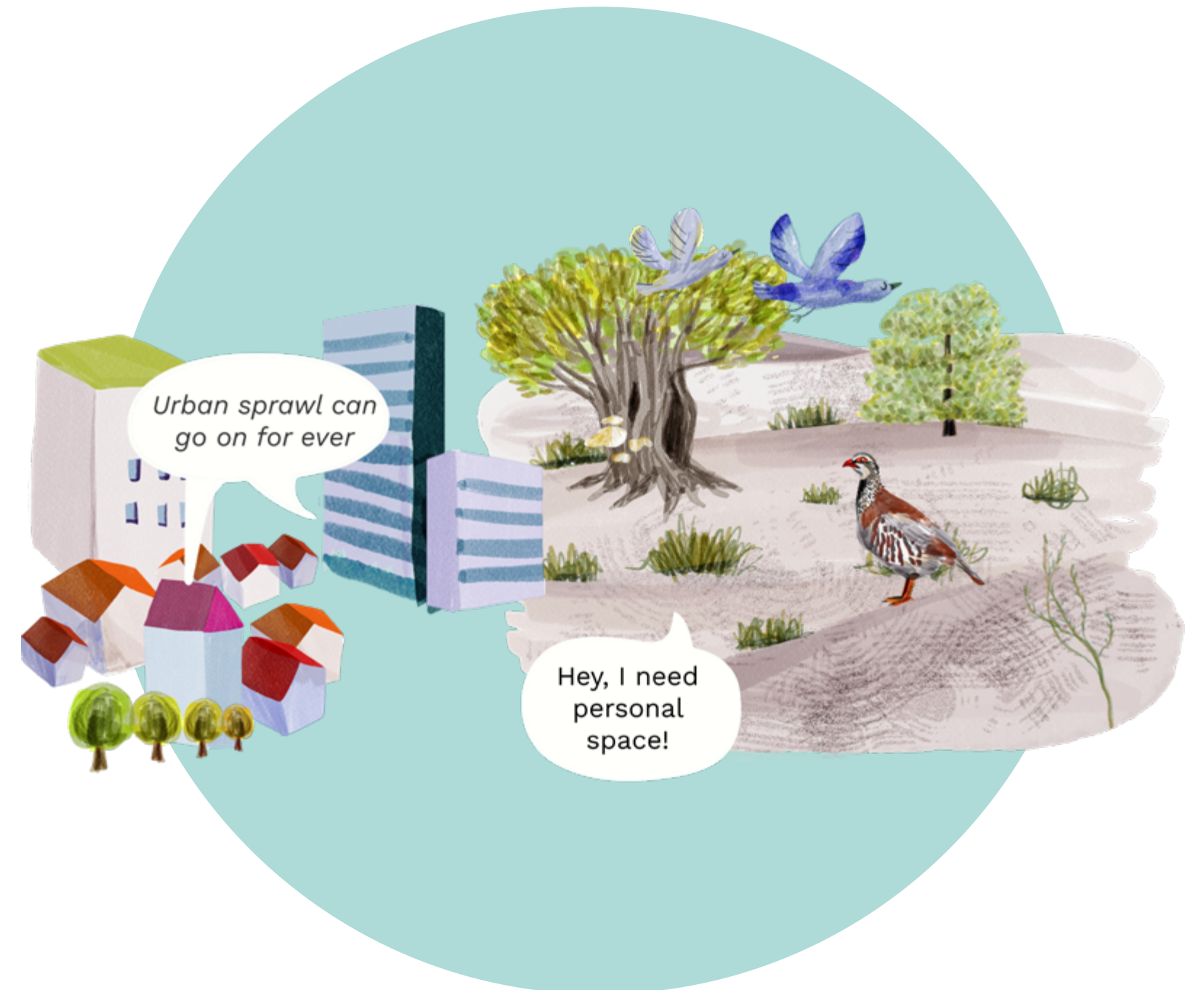
The idea that urban sprawl can go on is deeply rooted in both historical and contemporary, dating back to the 18th century and reinforced today by concerns that a “No Net Land take” (Zero Artificialisation Nette) law would “freeze rural development”.

Over the past 40 years, France has experienced an acceleration of urban sprawl, yet disconnected from actual demographic growth. However, while being the first driver of biodiversity loss in France, urban sprawl also exacerbates the consequences of climate change by increasing the heat island effect in cities and preventing water absorption due to soil sealing. Large commercial and industrial areas, especially in city peripheries, have degraded the landscapes’ visual and deprived cities from their lively essence.

In contrast, restoring nature within urban areas has demonstrated potential to make these places attractive again. For instance,

in Cahors, France, car parks have been repurposed into dynamic urban centres featuring movie theatres, gardens, and other community spaces. As part of the ecological transition policies, the French No Net Land take law promotes urban recycling and intensification, particularly in underutilized areas like brownfields and vacant dwellings. With urban sprawl frequently occurring in areas with little housing demand, this policy opens opportunities for purposeful and efficient new construction.

To support local governments and public agencies in implementing this unprecedented legislation, the French Ministry of Ecological Transition and Territorial Cohesion provides financial incentives and tools such as open-access data, guidelines and online trainings. Although No Net Land Take is a national goal, its successful application requires customized solutions tailored to the unique needs of each territory.



# Nature-based carbon removals are **NOT** inevitably greenwashing

Myth

**Nature-based carbon removals are inevitably greenwashing**

Speaker

**Christian Holzleitner**

**DG CLIMA | European Commission**

Head of Unit for Land Economy and Carbon Removals at the European Commission, DG Climate Action.

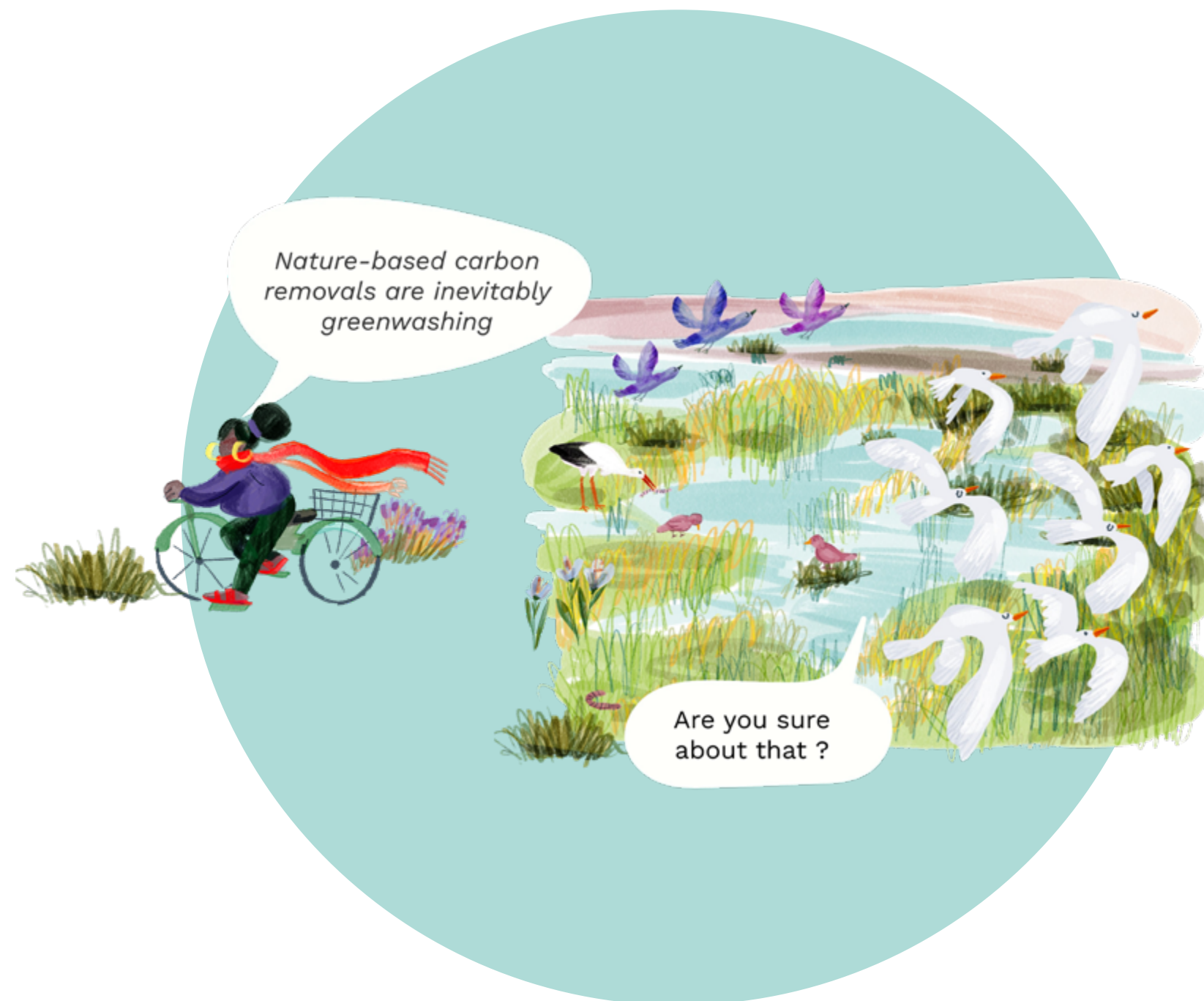
While aimed at advancing climate action, the voluntary carbon market often encounters trust issues, particularly due to concerns raising that nature-based solutions funded by such markets would be diverted into greenwashing. A key reason for these challenges is the voluntary carbon market's inconsistent regulation, which complicates efforts to create credible and accountable products.

To address these trust and credibility issues, the European Commission (EC) created the EU Emission Trading System (ETS) that operates with a structured and regulated approach. Companies from key sectors – such as energy, manufacturing and aviation

sectors – submit an allowance per ton of CO<sub>2</sub> emitted. In line with the EU's climate target, the total amount of allowances available (the “cap”) on the market is reduced annually to ensure that overall EU emissions decrease over time.

This process allows a clear demand for every emission, creating a well-defined, measurable and verifiable product while supporting biodiversity. With carbon removal costs ranging from €100 to €200 per ton, credibility and transparency in this market are crucial for long-term success.

The EC is now developing a certification of nature-based carbon removals.



# Preserving and rewetting ~~Drained~~ forests as climate win

## Myth Drained forests as climate win

Speaker  
**Mari Palolill**  
**WaterLANDS**  
**University of Tartu**  
**Estonian Fund for Nature**

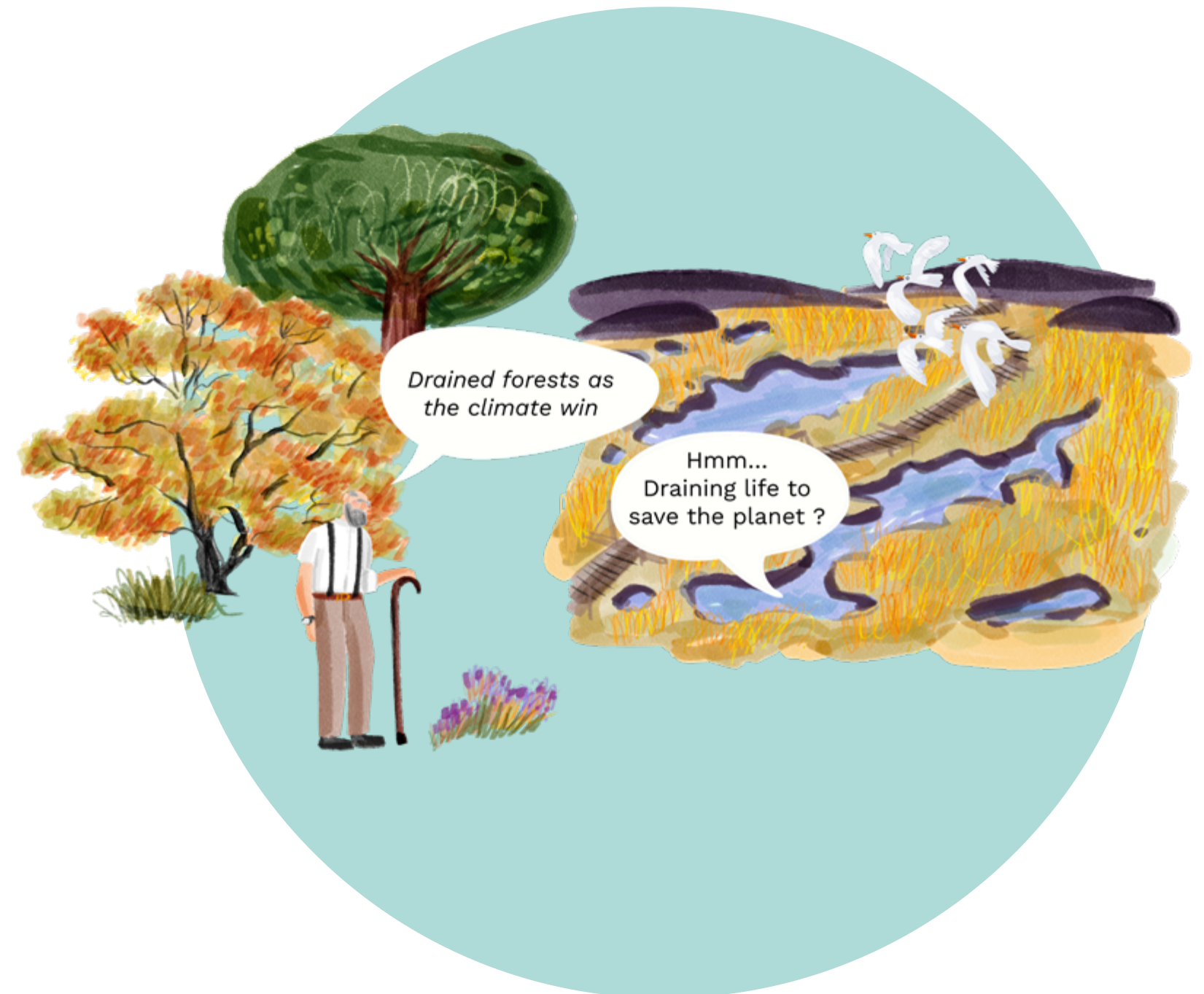
Conservationist at the Estonian Fund for Nature (ELF),  
co-owner and Fundraiser at Teravik OÜ.

The idea that it is necessary to drain forest to store carbon is rooted in broader disputes on the future of forests within the Estonian society. Behind the myth lies the idea that drainage accelerates forest growth, enabling rapid carbon capture. Through the logging cycle, drainage is thought to allow long term carbon storage in wood products, while the logged site is filled with a new forest that can bind even more carbon.

This myth persists in rural areas, especially among forestry backgrounds. Its dissemination by media campaigns and its emotional, cultural and intergenerational attachment – several generations in Estonia

devoted their lives to drainage efforts – have made it a powerful myth which actively hinder ecological restoration. Nevertheless, this view only holds in the short term. Indeed, faster drained forest growth is nullified by logging and increased soil emissions.

On the contrary, wet forest soils are long-term carbon sinks, storing around 680 tons of CO<sub>2</sub>-equivalents in Estonia. Therefore, it has been demonstrated that the most effective way to boost carbon stocks in these ecosystems is to preserve wet forests or rewet drained ones, halting peat decomposition and preventing further emissions.



Project WaterLANDS:  
[www.waterlands.eu](http://www.waterlands.eu)

Changes to water regime could lead to widespread deforestation, 25.01.2024, <https://parnu.postimees.ee/7945768/jaanus-mannik-vee-reziimi-muutmise-voib-pohjustada-ulatusliku-metsade-huku>

Restoring peatland forests will only damage our environment, 13.03.2024, <https://erametsaliit.ee/wp-content/uploads/2024/03/soode-taastamisest-p.p.pdf>

Wet forest action plan Estonian min of Climate (to be approved yet); [https://www.loodusrikaseesti.ee/sites/forest/files/2024-02/Margade-metsaelupaikade-tegevuskava\\_2.02.24.pdf](https://www.loodusrikaseesti.ee/sites/forest/files/2024-02/Margade-metsaelupaikade-tegevuskava_2.02.24.pdf)

EU Carbon Permits, <https://tradingeconomics.com/commodity/carbon>

Estonian National Inventory Report 2023, <https://unfccc.int/documents/627754>

# ~~Undisturbed~~ Nature-rich forests must be the target for forest restoration

Myth

**Undisturbed forests must be the target for forest restoration**

Speaker

**Jo O'Hara**

**SUPERB | European Forest Institute**

Non-Executive Board Member at Forestry and Land Scotland, Vice-Chair in the Changeworks charity, as well as a freelance strategic partner, coach and facilitator in the forestry domain. She is part of the SUPERB Horizon project, aiming at restoring European forests.

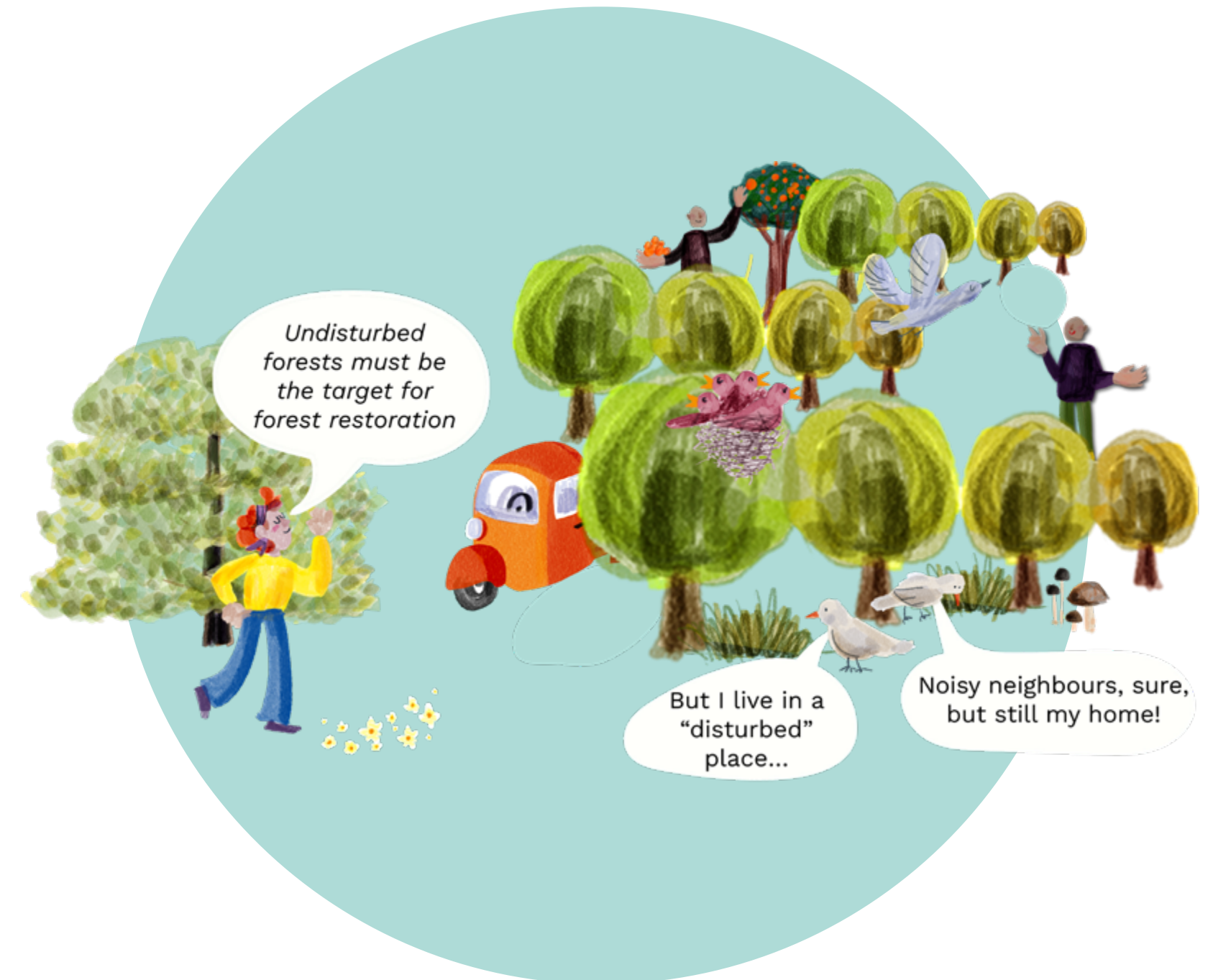
About 7,000 years ago, European forests reached their maximum extent but have significantly declined over the last 4,000 years, largely due to human activities. Nowadays, only 2% of Europe's forest cover remain natural, undisturbed, the rest being either semi-natural or planted.

A common perception is that these managed forests are inherently nature-poor due to disturbances like hunting, browsing, and logging. However, adopting more sustainable management approach of these activities can enhance biodiversity even in disturbed forests. For instance, shifting hunting regime from recreational sports to controlling deer populations has successfully promoted tree regeneration.

Restoration efforts must adapt to future environmental changes, for example through

strategies like adaptive restoration. This involves recognizing people as part of the forests, be conscious of genetics, the necessity to protect key features and mimic smaller disturbances. Finally, efforts should happen across scales, addressing diversity not only at the species level but also at the community, landscape and national levels.

Additionally, managed forests provide sustainable biomass for construction and textiles, reducing reliance on unsustainable resources. To ensure their resilience, it is therefore crucial to balance uses such as timber production with biodiversity. By embracing nature-positive management, even disturbed forests can thrive as nature-rich ecosystems.



# Discussion:

## Sharing landscapes

### Key barriers:

- Diverging interests and values among stakeholders within a territory can lead to conflict, limiting the capacity to upscale nature restoration
- Emotional and psychological barriers related to the fact that individuals are pushed to question their knowledge and convictions
- Limited private investment and funding to support ecosystem restoration

### How to address them?

- Foster on-site stakeholder engagement and facilitate dialogue between differing interests to encourage collaboration and finding a common ground
- Encourage personal acknowledgment by raising awareness on the importance of evolving individuals' knowledge and perspectives
- Implement compact city designs with higher housing densities while repurposing brownfields and former industrial infrastructure to reduce pressure on ecosystems
- Tailor land-use strategies based on specific environmental characteristics
- Encourage private investment in sustainable land use and restoration practices



# Busting myths: Nature governance

“The Anthropocene blurs the boundary between nature and society, between the scientific and the political. Our survival now depends on integrating ecological concerns into the heart of political action.”

Bruno Latour

# Nature governance: Nature for people

# Flexible barriers, ~~Rigid walls,~~ resilient coasts

Myth

## Rigid walls, resilient coasts

Speaker

**Luciana Villa Castrillón**

**RESTCOAST | Helmholtz-Zentrum Hereon**

PhD student in estuarine and coastal processes at Helmholtz-Zentrum Hereon (Centre for Materials and Coastal Research), currently working on the RESTCOAST Horizon project, which aims at upscaling coastal restoration.

It is commonly believed that rigid structures such as seawalls and dams are the best solution for coastal resilience. However, traditional rigid barriers—such as breakwaters and dams—are often expensive to maintain and have significant ecological and aesthetic impacts on coastal ecosystems.

Nature-based solutions integrate natural elements like mangroves, seagrasses, salt marshes and dunes. In relation to that, RESTCOAST is exploring large scale restoration of coastal ecosystems as an NbS for climate adaptation, through modelling and future climate scenario building. The Ebro delta, (Catalonia) and the Wadden Sea (Germany and the Netherlands) case studies

explored the effects of alternating dunes and seagrasses, respectively showing that they contribute to local resilience.

The RESTCOAST project is exploring large-scale restoration of coastal ecosystems as an NbS for climate adaptation, using modelling and future climate scenario analysis. Case studies from the Ebro Delta (Catalonia) and the Wadden Sea (Germany and the Netherlands) have shown that alternating dunes and seagrasses, respectively, contribute to local resilience.

A combined approach that integrates traditional and nature-based solutions offers the potential to create resilient and sustainable coastlines.



Barriers and enablers for upscaling coastal restoration, Sánchez-Arcilla, A., Cáceres, I., Le Roux, X., et al., *Nature-Based Solutions*, (2022). <https://doi.org/10.1016/j.nbsj.2022.100032>

Evaluation of seagrass as a nature-based solution for coastal protection in the German wadden sea, B. Jacob, T. Dolch, A. Wurpts, J. Staneva, *Ocean Dynamics* 73 (11) (2023) 699–727. <https://doi.org/10.1007/s10236-023-01577-5>

Evaluating barrier beach protection with numerical modelling. A practical case, Sánchez-Artús, X., Subbiah, B., Gracia, V., Espino, M., Grifoll, M., Espanya, A., & Sánchez-Arcilla, A. (2024), *Coastal Engineering*, 191, 104522. <https://doi.org/10.1016/j.coastaleng.2024.104522>

What-if nature-based storm buffers on mitigating coastal erosion, W. Chen, J. Staneva, B. Jacob, X. Sánchez-Artús, A. Wurpts, *Science of The Total Environment* 928 (2024) 172247. <https://doi.org/10.1016/j.scitotenv.2024.172247>

# Ensuring secure ~~Improving~~ access to nature ~~creates benefits~~ for all

Myth  
**Improving access to nature creates benefits for all**

Speaker  
**Isabelle Anguelovski**  
**Barcelona Lab for Urban Environmental Justice and Sustainability**

Director of the Barcelona Lab for Urban Environmental Justice and Sustainability, Research Professor at the ICREA (Institutió Catalana de Recerca i Estudis Avançats) and Senior Researcher at the UAB (Universitat Autònoma de Barcelona) in Barcelona, Spain. As a social scientist, her work is at the intersection of urban planning and policy, social inequality, and development studies.

Improved access to nature does not benefit everyone equally. In fact, access to the benefits of nature is often unequal, influenced by factors such as class, race, and ethnicity, especially but not only due to green gentrification processes.

The increasing implementation of urban green solutions—often accompanied by urban green branding, international city competitions, and linked to real estate investments—can lead to rising property values and a higher cost of living near these green areas, displacing lower-income residents. This creates a “green paradox,” where greening projects, which

are intended to enhance health and well-being, actually contribute to displacement, housing unaffordability, segregation, cultural displacement, and environmental racism. Studies conducted in more than a hundred cities have shown that, in some cases, greening—rather than other factors like tourism or real estate development—was the primary driver of gentrification.

Achieving urban green justice requires specific tools: anti-displacement policies, and attention to the inclusive and informal dimensions of greening. Climate justice is housing justice.



Segregating by Greening: What do We Mean by Green Gentrification?, Anguelovski, I.; Connolly, J JT, 2024. Journal of Planning Literature. <https://doi.org/10.1177/08854122241227804>

The Green City and Social Injustice: 21 Tales from North America and Europe. 2021. Anguelovski, J. J. <https://doi.org/10.4324/9781003183273>

Connolly. Routledge Racial Inequity in Green Infrastructure and Gentrification: Challenging Compounded Environmental Racisms in the Green City. 2024. Lewartowska et al. International Journal of Urban and Regional Research. <https://doi.org/10.1111/1468-2427.13232>

Urban green boosterism and city affordability: for whom is the 'branded' green city. 2021. Garcia Lamarca et al. Urban Studies. <https://doi.org/10.1177/0042098019885330>

Policy and Planning Tools Urban Green Justice. 2021. BCNUEJ. <https://www.bcnuej.org/wp-content/uploads/2021/04/Toolkit-Urban-Green-Justice.pdf>

The Green Divide documentary. 2024. BCNUEJ. <https://www.bcnuej.org/the-green-divide/>

# Working for nature is ~~against~~ in landowners' interests

Myth

## Protecting nature is against landowners' interests

Speaker

**Delphine Dupeux**  
**European Landowners**

Director of ELO European Affairs with the European Parliament in Brussels, Belgium. Her background made her a professional policy expert in the field of environment as well as cultural heritage.

Even though they are not always recognized as such, private landowners—who own most of the land in Europe—rely on nature for their livelihoods. They are facing the challenges of climate change and need to know how to address them. This is why the European Landowners Organization (ELO) is involved in over 30 EU projects focused on soil, pollinators, and land conservation. Developing conservation solutions is at the core of ELO's mission. For this reason, it is participating in the ENPLC Life project, which aims to develop innovative tools for private land conservation to mitigate environmental damage and preserve land value for future generations. Landowners are entrepreneurs

and need environmental economics combined with business solutions to maintain their land.

At the beginning of the 90's, landowners were triggered by the approval of the Habitat and Birds Directive. Today, however, cooperation between landowners and authorities has improved, with ELO engaging at both national and EU levels on key issues such as carbon farming and forest management. An open dialogue among stakeholders, along with practical demonstrations of the economic and environmental benefits of conservation, is essential to align the interests of landowners with environmental needs.



ELO website  
<https://europeanlandowners.org/>

Research paper / report: <https://europeanlandowners.org/publications/small-wildlife-of-fields-and-meadows-in-europe/>

Life programme ENPLC:  
<https://enplc.eu/>

Private Land Conservation in Europe; how to set credits for ecosystem services in the international market? <https://enplc.eu/media/>

# Our landscapes have **not** always looked like this!

Myth  
**Our landscapes have always looked like this!**

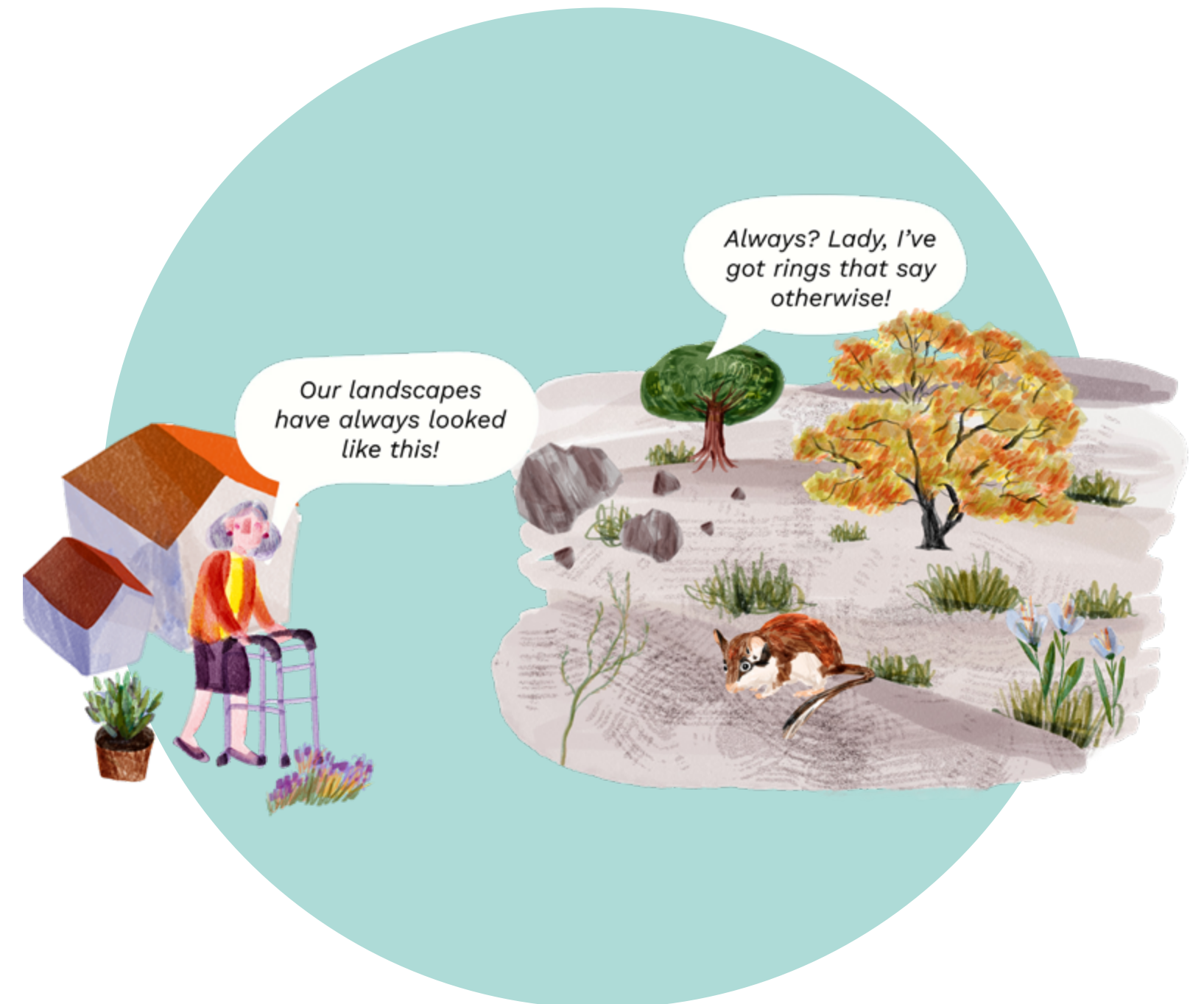
Speaker  
**Richard Grayson**  
**WaterLANDS | University of Leeds**  
Senior Research Fellow at University of Leeds, UK, and Action Site Coordinator of the WaterLANDS Horizon project which is exploring upscaling of wetland restoration across Europe.

WaterLANDS research project in “The Great North Bog” (northern England), led by the University of Leeds, aims to upscale restoration of upland blanket peatlands. These landscapes are currently dominated by heather due to practices like grouse shooting, policy-driven land drainage, burning and mowing.

Upscaling peatland restoration aims to improve carbon storage, climate regulation, water storage, enhance water quality and protect against erosion. However, landowners are reluctant to change their current management as they consider that they are following traditional management practices.

Nevertheless, the current ecological state of these systems is not historically typical and has mainly occurred during the last five centuries. A paleo archive, developed by WaterLANDS, reveals that, in fact, these peatlands were vastly different in the past.

By engaging with landowners, with land managers and with practitioners across a series of workshops, the research team hopes to shift perceptions regarding restoration activities, demonstrate the broader environmental benefits of healthy peatlands, and explore the possibility of rethinking their landscapes in the past and in the future.



Blundell, A and Holden, J. (2015) Using palaeoecology to support blanket peatland management <https://doi.org/10.1016/j.eco-lind.2014.10.006>

Chambers et al. (1999) Recent rise to dominance of *Molinia caerulea* in environmentally sensitive areas: New perspectives from palaeoecological data <https://doi.org/10.1046/j.1365-2664.1999.00435.x>

McCarroll et al. (2017) Application of palaeoecology for peatland conservation at Mossdale Moor, UK <https://doi.org/10.1016/j.quaint.2014.12.068>

# Discussion:

## Nature for people

### **Key barriers:**

- Difficult to communicate science uncertainty: Dealing with the inherent uncertainty related to science, convincing relevant stakeholders and landowners
- Siloed decision-making: policies often lack coordination and coherence across sectors, leading to conflicting directions
- Insufficient integration of social perspectives in environmental policies

### **How to address them?**

- Cross-sectoral collaboration: Work across sectors, topics and agencies, involving a wide range of stakeholders in the decision-making process
- Strengthen social pillars within environmental policies: for example, by taking measures to ensure house affordability
- Showcasing successful examples and labelling: For instance, the Wildlife Estates Label is a network of exemplary estates that voluntarily adopted sustainable wildlife and land use management practices

# Nature governance: People for nature



# We will decide what to do with the data ~~will tell us what to do~~

Myth

## Data will tell us what to do

Speaker

**Florence Damiens**

**SAFEGUARD | SLU University**

Social science postdoctoral researcher at the Swedish University of Agricultural Sciences (SLU) in Uppsala, Sweden, and part of the Safeguard project on pollinators, where she studies how political discourses and governance modes affect pollinators conservation.

The perception of our world's growing complexity often translates into the assumption that policy making should rely on science and more and more data. Following the establishment of the Rio Convention on Biodiversity in 1992, pollinators became of a focus of international concern, with data collection seen as vital factor in advancing the biodiversity agenda. Since 2002, EU-funded research projects have generated substantial data on pollinators, culminating in the 2016 IPBES report. Yet, the decline of pollinators has not been reversed, suggesting that the problem lies not in a lack of data but in "data politics".

Research from the Safeguard project has identified 6 political positions on pollinators competing at the EU level. They range from anthropocentric views (focused on

a few domesticated pollinators and their instrumental value) to pluricentric (multiple pollinators and diversified landscapes, associated with relational values) and bio/ecocentric perspectives (prioritizing rare wild pollinators and intrinsic values). Each perspective relies on different knowledge systems and data, resulting in conflicting policy approaches that have critical implications across sectors.

Therefore, collective debate is urgently needed to discuss both the implications of data and which data will be produced next. It is not possible to escape politics. This requires transformative governance – integrative, inclusive, informed, and adaptive – to reconcile perspectives and drive effective action for biodiversity conservation.



Blundell, A and Holden, J. (2015) Using palaeoecology to support blanket peatland management <https://doi.org/10.1016/j.eco-lind.2014.10.006>

Chambers et al. (1999) Recent rise to dominance of *Molinia caerulea* in environmentally sensitive areas: New perspectives from palaeoecological data <https://doi.org/10.1046/j.1365-2664.1999.00435.x>

McCarroll et al. (2017) Application of palaeoecology for peatland conservation at Mossdale Moor, UK <https://doi.org/10.1016/j.quaint.2014.12.068>

# Science for socially actionable and robust knowledge

## ~~as quest for objective truth~~

Myth

### Science as quest for objective truth

Speaker

**Sebastian Birk**

**MERLIN | University of Duisburg-Essen**

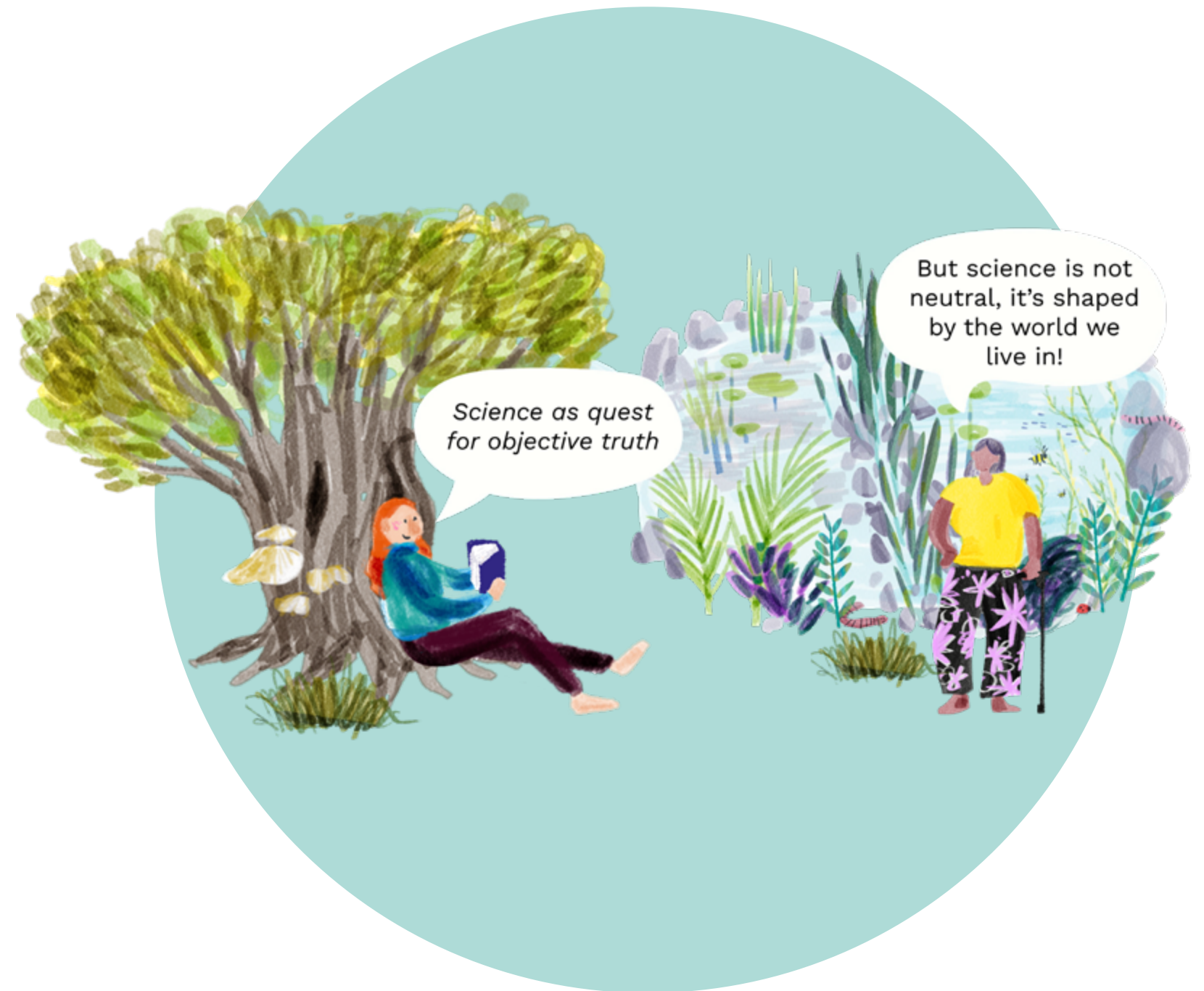
Senior Scientist and Lecturer at the University of Duisburg-Essen, Germany, and the coordinator of the MERLIN project. As an applied ecologist, he focuses on issues of the water-related science-policy interface at European level.

For a long time, academia was seen as focused on gathering pure knowledge and being disconnected from society and its values. As environmental crisis intensifies, the urgency for science to address real world problems has grown, with more researchers embracing the idea of science for society. Yet, universities still uphold the ideal of truth seeking, objectivity and rationalism, which are considered as the backbone of scientific work.

However, this paradigm perpetuates a false narrative of “neutral” science while it is intertwined with societal values, ethics and needs, especially in sustainability science. It also contributes to misleading

public understanding, masking the inherent complexities and uncertainties of the scientific process.

Demystifying science thus means acknowledging that it is often embedded in a moral and societal context. Beyond discovering facts, science should produce impactful and actionable knowledge that drive meaningful change. This involves equally considering non-academic sources like local and indigenous knowledge. Finally, achieving this shift requires training young scientists in philosophy, ethics, and epistemology and reforming reward systems to prioritize collaboration and transdisciplinary approaches over individual achievements.



Büttner, L., Darbi, M., Haase, A., Jax, K., Lepenies, R., Priess, J., Zeug, W., 2023. Science under pressure: how research is being challenged by the 2030 Agenda. *Sustain. Sci.* 18, 1569–1574. <https://doi.org/10.1007/s11625-023-01293-5>

Funtowicz, S.O., Ravetz, J.R., 1993. Science for the Post-Normal Age. *Futures* 25, 739–755. [https://doi.org/https://doi.org/10.1016/0016-3287\(93\)90022-L](https://doi.org/https://doi.org/10.1016/0016-3287(93)90022-L)

Nowotny, H., 2003. Re-Thinking Science: From Reliable Knowledge to Socially Robust Knowledge, in: Lepenies, W. (Ed.), *Entangled Histories and Negotiated Universals: Centers and Peripheries in a Changing World*. Campus Verlag, Frankfurt/New York, pp. 14–31.

# ~~We are too small to make an impact~~ Every action matters

Myth

## **We are too small to make an impact**

Speaker

**Aveliina Helm**

**Ministry of Climate, Estonia**

**University of Tartu**

**Society for Ecological Restoration**

Science advisor to the Minister at Ministry of Climate of Estonia and Professor of Restoration Ecology at University of Tartu, Estonia, focusing on the impact of landscapes structure on biodiversity and provision of ecosystem services.

When facing global issues like climate change, there is a common perception that individual actions and vision are insignificant and helpless against such immense problems. This belief fosters a sense of helplessness, creating a psychological barrier that discourages action and fuels cynicism towards environmental challenges. Simultaneously and paradoxically, individuals, small groups, or even small countries are often blamed for systemic problems, further deepening disconnection and inaction.

Driving meaning change requires empowering individuals and communities through transparent and collaborative governance

supported by strong environmental laws. Such governance should promote accountability and corporate responsibility to address systemic issues effectively.

To inspire action and (re)ignite attachment to nature, challenges must feel closer to people's realities and scales. This requires providing local success stories, tools and knowledge tailored to the local context. For example, the Green Meter tool has been developed to inform users about the biodiversity conditions of their surrounding landscape and provides recommendations for action, encouraging individual and community engagement.



# Citizens ~~aren't interested in pro-~~ ~~tecting~~ really do care about nature

Myth

## Citizens aren't interested in protecting nature

Speaker

**Dr. Micheál Ó Cinneide**  
The Citizens' Assembly  
Corrib Beo Ireland

Ex diplomat, ex Director of the Irish Environmental Protection Agency (EPA) and ex Director at the Marine Institute, Galway, Ireland. He is currently Chair of the Corrib Beo Partnership, a coalition of environmental groups in Galway.

The idea that citizens are not interested in protecting nature can be debunked with the example of the Irish Citizens Assembly on Biodiversity Loss. This initiative gathered 99 randomly selected individuals from diverse generations and backgrounds, dedicating their free time over 6 weekends in 2022 and 2023 to discuss on proposals to tackle biodiversity loss.

Participants received insights on key biodiversity topics from 87 speakers, including representatives of NGOs, farming groups, government agencies, local authorities, universities, members of the Expert Advisory Group as well as of the Children's & Young People's Assembly on Biodiversity. They came up with more than 640 public submissions, each of those was debated with support from facilitators, and ultimately voted on 159 recommendations to the Irish Government.

These recommendations emphasized the need for the Government to advocate for a shift in emphasis in EU and international policy away from GDP expansion as a goal in itself, and towards the goals of societal and ecological wellbeing. Notably, they proposed amending the Irish Constitution to include human the rights of nature and human environmental rights.

The lively nature of the discussions shed light on the ability of citizens to express care and engagement towards biodiversity matters when given the opportunity. With differing views on nature and the environmental confronting each other and evolving throughout the process, this initiative highlighted the need to provide space for such respectful discussions to occur, proving people don't necessarily need to be experts to have an informed opinion and contribute to biodiversity action.



Citizen Assembly website:  
[www.citizensassembly.ie](http://www.citizensassembly.ie)

Report of the Citizens' Assembly on Biodiversity Loss, 2023, [https://citizensassembly.ie/wp-content/uploads/Report-on-Biodiversity-Loss\\_mid-res.pdf](https://citizensassembly.ie/wp-content/uploads/Report-on-Biodiversity-Loss_mid-res.pdf)

# Discussion:

## People for nature

### Key barriers

- Limited understanding of biodiversity
- Disconnection with nature, especially in urban areas
- Lack of inspiration for change
- Difficulties in shifting mindsets, including challenges like the shifting baseline syndrome which translates differing perceptions of environmental “normality” between generations, countries, or regions, hindering meaningful change
- Difficulties in translating citizens contributions into concrete policy

### How to address them

- Through education:
  - o Facilitate place-based learning tailored to the local context.
  - o Provide applied learning, for instance by breaking down topics into sectors and discussing related activities’ impacts on biodiversity and potential solutions
  - o Incorporate outdoor classrooms and biodiversity lessons in primary schools to foster early connection to nature.

- o Use higher education to train and empower future educators, amplifying impact on younger generations.

- Establish urban nature initiatives like National Parks in Cities to reconnect people with nature and fight inequality of access
- Local empowerment: Encourage small, community-driven initiatives that can inspire broader change while avoiding promoting blanket solution like tree planting
- Provide successful examples of transformative practices emphasizing that transformative change, while slow, is underway. People can change their points of reference in less than 6 years.
- Promote dialogues that address myths, not just as denials of facts, but as opposition towards the implications and the societal concerns those facts raise
- Recognize the need for deep systemic change: transformative change involves shifts in longstanding institutions, practices and mindsets

# Busting myths: The value of nature

“It’s not just about losing the wild world. It’s about losing the systems that keep us alive. If we lose the natural world, we lose the ability to breathe, to eat, to make a living. It’s that fundamental. Nature is our life-support system, and our entire economic system is built upon and utterly reliant on the natural world.”

David Attenborough

# **The value of nature: An under-estimated matter**

# Valuation of nature is a ~~technical~~ political challenge

Myth

## Valuation of nature is a technical challenge

Speaker

**Sander Jacobs**

**IPBES**

**INBO**

Senior researcher for the research group Nature & Society at INBO (Institute for Nature and Forest) in Brussels, where he coordinates the program on Urban Nature. As an ecologist and ecological economist, he teaches human and political ecology at Ghent University and contributed to several IPBES assessments, including the one on the diverse values of nature.

While economic valuation is often equated with valuing nature, it is only a part of the picture. Just as biodiversity encompasses more than birds, valuation includes diverse cultural, social, and ecological dimensions, not just financial metrics.

The IPBES values assessment report define the following hierarchy:

- Broad Values:** Rooted in cultures, worldviews, and moral principles, and define what we find important as a society
- Specific Values:** Focus on the specific aspects (e.g. biodiversity or natural resources, productivity)
- Indicators:** that measure the specific values. (e.g. bird counts, carbon levels, or monetary figures)

Valuation should consider all these dimensions together with the audience and purpose. The four-year ambitious research that led to the report studied a huge amount of valuation studies. It was found that most of them focused on improving the state of

nature or on enhancing human well-being, and that a small but growing number was focused on justice. It was also found that half of the valuations were using biophysical indicators, and that 25% used monetary indicators, and another 25% were using social and cultural non-monetary indicators. These are just examples of how valuation employs varied methods across disciplines and that collaboration and cross-disciplinary methods are vital to address shared challenges.

This research defined overarching qualities to define the capacity of valuation to be transformative, acknowledging that rethinking nature valuation is key for reversing biodiversity loss. The five-step cross-disciplinary valuation method involves understanding why valuation is needed, its context, and its implications for policy and implementation. Valuation of nature is, therefore, inherently political, requiring systemic thinking and an inclusive approach to drive meaningful action.



Diverse values of nature for sustainability U Pascual, P Balvanera, CB Anderson, R Chaplin-Kramer, M Christie, ... Nature 620 (7975), 813-823, <https://www.nature.com/articles/s41586-023-06406-9>

Summary for policymakers of the methodological assessment of the diverse values and valuation of nature of the Intergovernmental Science-Policy Platform on Biodiversity and ecosystem services. U Pascual, PB Levy, M Christie, B Baptiste. IPBES secretariat 2022, [https://knowledge4policy.ec.europa.eu/publication/summary-policy-makers-assessment-report-diverse-values-valuation-nature\\_en](https://knowledge4policy.ec.europa.eu/publication/summary-policy-makers-assessment-report-diverse-values-valuation-nature_en)

Five steps towards transformative valuation of nature. M Termansen, S Jacobs, R Pandit, TH Mwampamba, N Dendoncker, ...Current Opinion in Environmental Sustainability 64, 101344 2023, <https://doi.org/10.1016/j.cosust.2023.101344>

The pitfalls of plural valuation. S Jacobs, E Kelemen, P O'Farrell, A Martin, M Schaafsma, N Dendoncker, ... Current Opinion in Environmental Sustainability 64, 101345 2023, <https://doi.org/10.1016/j.cosust.2023.101345>



# ~~Nothing there, just dirt~~ Living soils provide us with essential services

Myth

## Nothing there, just dirt

Speaker

**Mirco Barbero**

**DG ENV, European Commission**

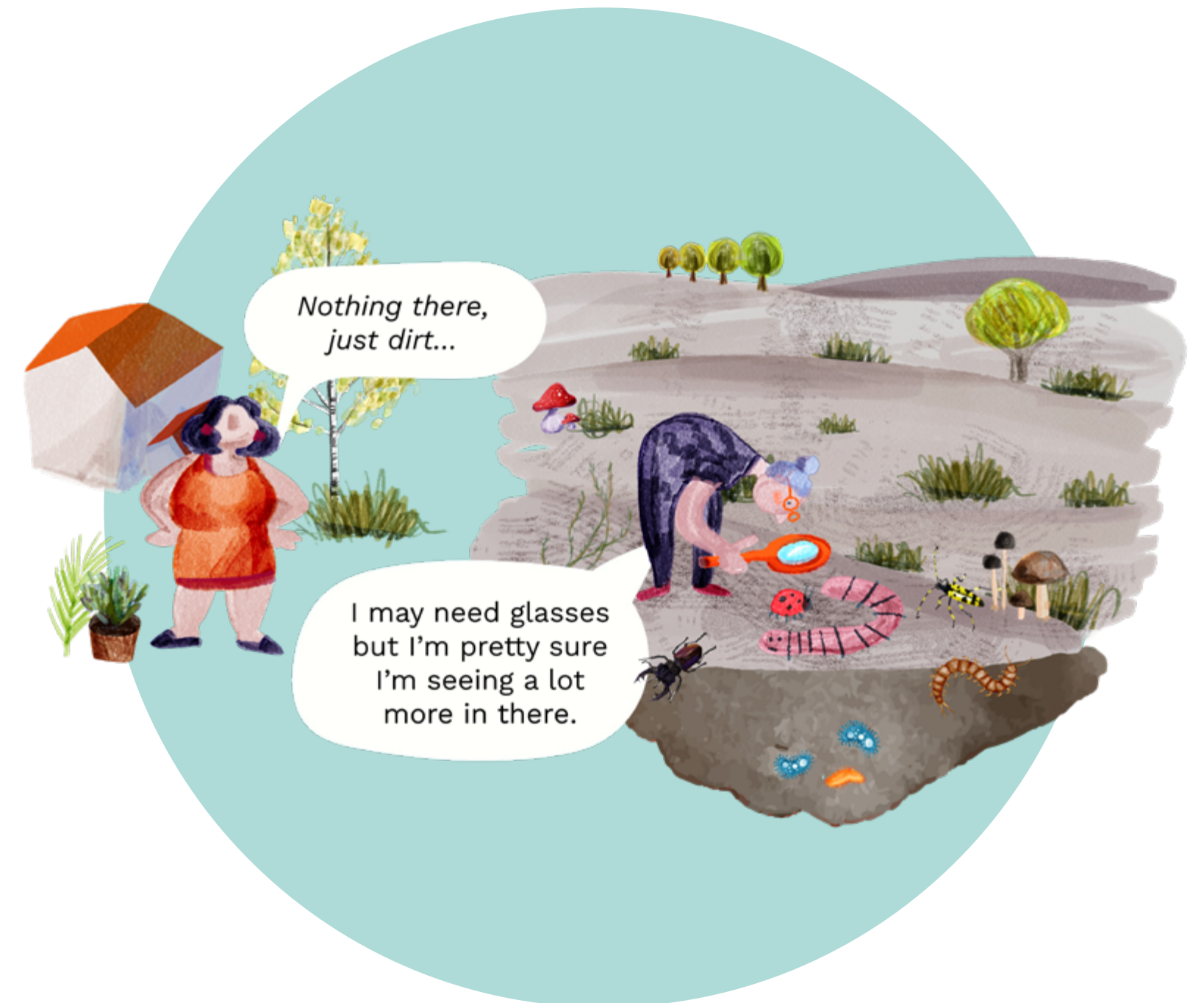
Team Leader of Soil Team of the Unit Land Use & Management, European Commission – DG Environment

When speaking about urban developments or infrastructures, it is common to think that before them, there was nothing valuable: “Nothing there, just dirt”. Nevertheless, there was a living soil that was invisibly and silently providing ecosystem services, such as the mitigation of extreme weather events and climate regulation.

Underestimating soils’ value and managing them unsustainably leads to land degradation. This can have a wide range of forms: dust bowls –such as the ones from the extreme case of Oklahoma in 1930– erosion, loss of organic matter, salinization, pollution, desertification, and it is unequally perceived by urban and rural inhabitants. From an economic point of view, it is estimated that soil degradation in the EU costs already more than 50 billion of euros!

The EU’s response to this challenge includes several key elements. The Soil Strategy for 2030 provides a vision for healthy soils by 2050. The proposed Soil Monitoring and Resilience Directive, if accepted, would be the first EU legislative framework on soils and will aim, between others, to set a common framework for monitoring EU soils in a harmonized way. The Soil Mission is helping to solve soil knowledge gaps by supporting research on soils. The EU Soil Observatory will share available data and inform choices.

Living and healthy soils are essential for human wellbeing and health, provide us with essential ecosystem services such as nutrient cycling, clean water, climate change mitigation and adaptation and are the basis for biodiversity.



EU Soil Strategy. European Commission. [https://environment.ec.europa.eu/topics/soil-and-land/soil-strategy\\_en](https://environment.ec.europa.eu/topics/soil-and-land/soil-strategy_en)

Proposal for a Soil Monitoring and Resilience Directive. European Commission. [https://environment.ec.europa.eu/publications/proposal-directive-soil-monitoring-and-resilience\\_en](https://environment.ec.europa.eu/publications/proposal-directive-soil-monitoring-and-resilience_en)

Mission soil. European Commission. <https://mission-soil-platform.ec.europa.eu/>

EU Soil Observatory. European Commission. <https://esdac.jrc.ec.europa.eu/euso>

# Nature has to come ~~last~~ first

Myth

## Nature has to come last

Speaker

**Milena Pereira Kozłowski**  
**Generation Climate Europe**

Coordinator of the Biodiversity Working Group at Generation Climate Europe (GCE) and Research Assistant at the Research Institute for Development (IRD) in Montpellier, France.

Generation Climate Europe is working on challenging the mindset that nature should come last. Today decisions will shape the future. and we are now experiencing the consequences –wildfires, floods– of not considering nature as a first priority for the last centuries.

Generation Climate Europe is the largest youth-led coalition addressing environmental and climate issues in Europe. The organization participates in high-

level meetings, COP delegations, works on advocacy, while also informing youth. Their aim is to ensure youth voices are heard in shaping policies that put nature first, as they are the one who will experience them in the future.

It is up to all of us in our daily lives, and also in our work, to remember to bring the value of nature first. Youth will do it, so it's only a matter of time!



# Everything, including nature can ~~Only people~~ have rights

Myth

## Only people have rights

Speaker

**Sjanne Quellhorst**

**PRO Eijsden-Margraten**

List Leader of the Dutch PRO Eijsden-Margraten Party. She focuses mainly on social issues, and got involved in the adoption of a motion for the Rights for Nature.

Even if someone can think that only people have rights, recognizing the rights of nature is not a new concept and has been successfully implemented globally. The world is structured into laws and into jurisdictions that are generally not considering nature as a first priority.

Some people argue that nature cannot have rights, as it does not have a voice, but granting nature rights would give it a voice through guardians or representatives, similar to how companies (non-human entities) and children are legally represented. It is also common to listen that at the current moment society is not ready for this, but this argument was also used when abolishing slavery or giving women the right to vote.

Like in these cases, hopefully in the future, it will seem absurd that there was a time when nature didn't have rights.

In fact, there are global examples of rights of nature. The Whanganui River (New Zealand) has been granted legal personhood, by the Māori people. In Ecuador, nature's rights have been integrated into its constitution, mandating considering nature when making decisions or developing new industrial activities. In Europe, we do have Mar Menor (Spanish lagoon) rights. Eijsden-Margraten (a municipality in The Netherlands) is now researching how to implement them, protecting nature from potentially harming activities such as tourism or agriculture.



Rechten voor de Natuur, Jessica den Outer, 2023. Rechtsgeleijkheid voor de natuur, Erik Kaptein, 2021 <https://www.garn.org/> <https://www.rechtenvandenatuur.org/>

Legal Personality for the Mar Menor Lagoon in Spain. Carolijn Terwindt and Jessica den Outer <https://www.embassyofthenorthsea.com/legal-personality-for-the-mar-menor-lagoon-in-spain/>

Landelijke primeur Eijsden-Margraten: natuur krijgt een voogd [https://www.limburger.nl/cnt/dmf20231109\\_97537451](https://www.limburger.nl/cnt/dmf20231109_97537451)

# Discussion:

## Valuing nature

### Key barriers

- Nature's value is often assessed without considering the beneficiaries and the reasons for valuation.
- Charismatic ecosystems, such as soil, are often undervalued despite their critical importance.
- Caring about certain ecosystems (e.g., soil) is frequently seen as a concern for experts rather than something relevant to everyone.
- Lack of representation of key stakeholders such as youth, nature and climate representatives.
- Democratic systems sometimes fail to adequately reflect the will of voters, with elected representatives sometimes promoting policies that diverge from public opinion.
- Fear of being the first to take bold actions, such as recognizing nature's rights, due to concerns about potential consequences, including economic impacts.

### How to address them

- As valuation is constantly done, greater attention is needed on how, why and for whom nature is being valued, while integrating multiple disciplines and forms of knowledge
- Consider developing new markets, but with caution: Highly profitable markets currently often drive environmental

degradation. Again, it is crucial to rethink who will benefit from these markets, learning from carbon credits' lessons

- Communicate the link between ecosystem health and human wellbeing through simple and clear messages
- Engage new actors such as youth and consider intergenerational justice in discussions on nature valuation.

### Other discussions

Existing laws such as rights for nature and the Soil Law are not disconnected from valuation and from taking into account intergenerational justice. There are no market functions without a legal environment. Top-down regulations may not be politically accepted, but the problem cannot be solved neither by voluntary schemes. It is therefore needed to provide legal and economic incentives.

Rights of nature allow to give power to communities affected by environmental degradation. This is the case of Machángara river in Ecuador, where local communities sued Quito municipality for dumping wastewater into the river and now the municipality is obliged to avoid water pollution.

# **The value of nature: Economy for and with nature**

# Is it ~~It's~~ all about immediate profit?

Myth

## It's all about immediate profit

Speaker

**John Garvey**

**BioFin, University of Limerick**

Associate Professor of Risk and Finance at the University of Limerick in Dublin, Ireland, and is coordinating the EU-funded project BIOFIN-EU, which aims at providing support for making financial decisions that promote positive impacts on nature.

For over two decades, “immediacy” has dominated society, particularly the financial system by prioritizing rapid capital flows across borders and industries. This paradigm, which translates the idea of bypassing mediation or intermediary processes, has frequently come at the expense of planetary health. Yet, 75% of corporate loan exposure in Europe depends on at least one ecosystem service (Boldini et al. 2023), highlighting the need to mainstream nature within financial systems.

The drive for immediacy poses unique operational challenges in financial institutions like banks. For instance, if a bank slows down loan processing to assess environmental impacts, borrowers may simply seek faster alternatives.

Such challenges are also illustrated in loans' process. When requesting a green loan, two cases can occur:

1. “Immediacy” loans: A farmer borrows for new equipment or technologies to improve nutrient circularity.

2. “Mediacy” loans: A farmer borrows to reduce his herd size and invest in a new business, or to restore degraded land and produce food.

The first case only supports incremental changes, failing to drive transformative outcomes for biodiversity. In contrast, the second one offers the opportunity for intermediary steps, for instance support in integrating nature-based solutions into the farmer's new business model, or in securing funding for restoration actions.

Therefore, mainstreaming nature in the financial systems requires a deep understanding of existing processes and operational bottlenecks. Initiatives like BioFin are paving the way by developing a Nature-based Solutions (NbS) Opportunity Map. This tool supports capital allocation and lending by documenting how funds are used and demonstrating positive environmental impacts to shareholders, fostering a financial system aligned with long-term sustainability goals.



# Ecosystem insurance is ~~not~~ workable

Chandellier, J., Malacain, M., 2021. Biodiversity and Re/insurance: An Ecosystem at Risk. Muséum national d'Histoire naturelle, Paris.

Kousky, C., 2022. Insurance-sector tools to combat biodiversity loss. *Science* 377, 714–716. <https://doi.org/10.1126/science.abo7282>

Kousky, C., Light, S.E., 2019. Insuring nature. *Duke Law Journal* 69, 323–376.

Reguero, B.G., Beck, M.W., Schmidt, D., Stadtmüller, D., Raeppe, J., Schüssele, S., Pflieger, K., 2020. Financing coastal resilience by combining nature-based risk reduction with insurance. *Ecological Economics* 169, 106487. <https://doi.org/10.1016/j.ecolecon.2019.106487>

Sudmeier-Rieux, K., Arce-Mojica, T., Boehmer, H.J., Doswald, N., Emerton, L., Friess, D.A., Galvin, S., Hagenlocher, M., James, H., Laban, P., Lacambra, C., Lange, W., McAdoo, B.G., Moos, C., Mysiak, J., Narvaez, L., Nehren, U., Peduzzi, P., Renaud, F.G., Sandholz, S., Schreyers, L., Sebesvari, Z., Tom, T., Triyanti, A., van Eijk, P., van Staveren, M., Vicarelli, M., Walz, Y., 2021. Scientific evidence for ecosystem-based disaster risk reduction. *Nature Sustainability*. <https://doi.org/10.1038/s41893-021-00732-4>

Vicarelli, M., Sudmeier-Rieux, K., Alsadadi, A., Shrestha, A., Schütze, S., Kang, M.M., Leue, M., Wasielewski, D., Mysiak, J., 2024. On the cost-effectiveness of Nature-based Solutions for reducing disaster risk. *Science of the Total Environment* 947. <https://doi.org/10.1016/j.scitotenv.2024.174524>

## Myth

### Ecosystem insurance is not workable

#### Speaker

**Jaroslav Mysiak**  
Naturance | CMCC

Director of the research division 'Risk assessment and adaptation strategies' at the Euro-Mediterranean Centre on Climate Change (EMCC) in Italy. He coordinates the NATURANCE Horizon project.

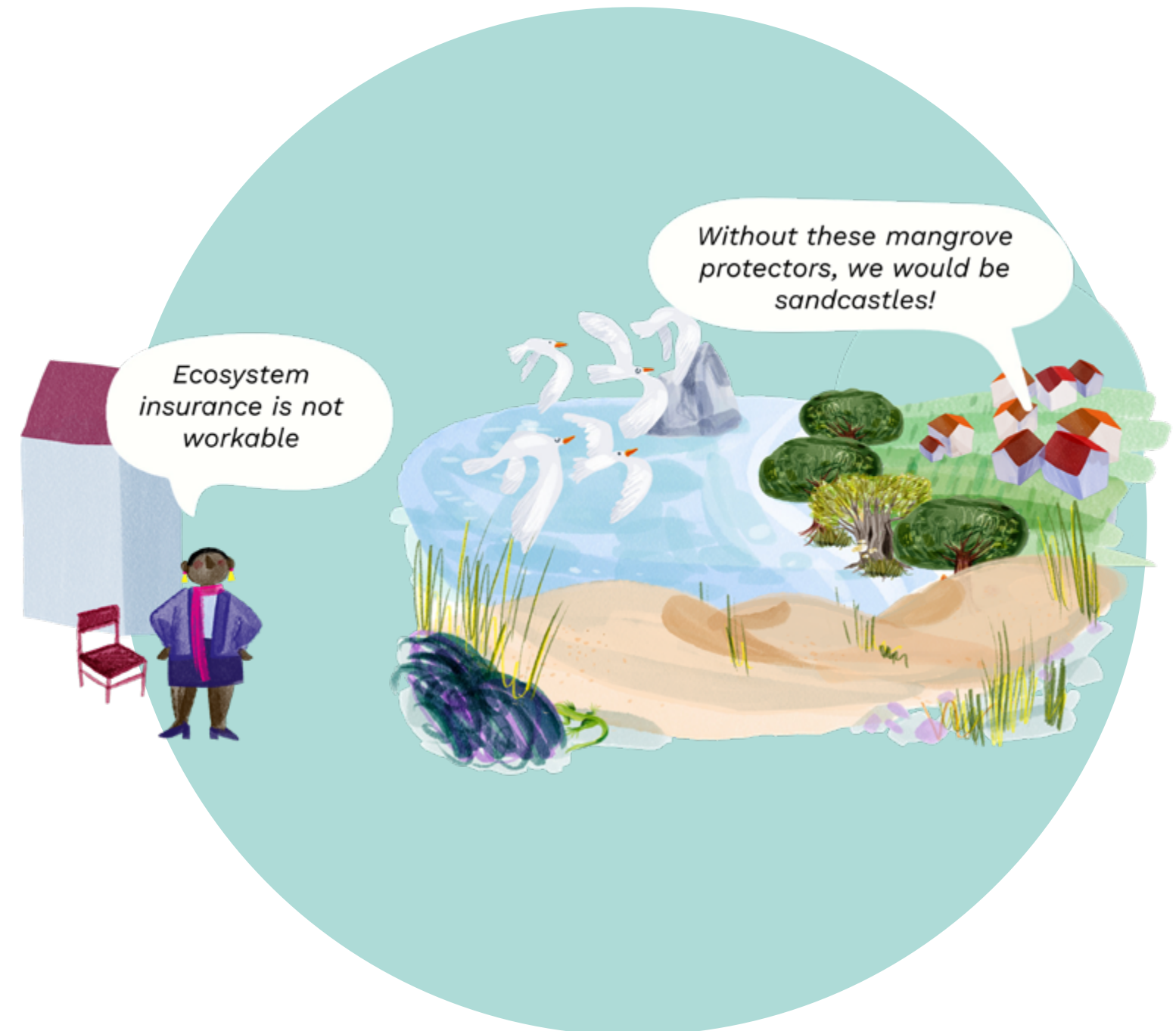
Despite the recognized economic value of ecosystem services like water and air purification, pollination, and climate regulation, a common misconception persists that ecosystem insurance falls outside the private sector's core interests. However, businesses depend on healthy ecosystems for resources, making the private sector crucial for sustainable ecosystem management. Besides, ignoring ecosystem degradation in risk models also overlooks a key driver of risk, likely leading to underpriced policies.

Insurance systems can address this gap in several ways. With their expertise in risk assessment and their significant capital, insurers are able to offer financial protection, reduce uncertainty and support post-disaster ecosystem recovery. Moreover, insurance

hold the potential to incentivise conservation through reduced premiums for sustainable practices and secure funding for the planning, implementation, and maintenance of large-scale restoration projects.

For instance, the Mesoamerican Reef (MAR) Insurance Program funds post-disaster restoration of coral reefs, which combat coastal erosion, support biodiversity, and sustain local economies.

Building a strong business case for ecosystem insurance requires evidence and collaboration across disciplines. The NATURANCE project is exploring this by developing and testing solutions that combine disaster risk financing with nature-based solutions (NbS) through innovation labs.



# Biodiversity makes ~~or~~ profit

## Myth Biodiversity or profit

Speaker  
**Carlos Ruiz**  
**Olivares Vivos, SEO/BirdLife**

Coordinator of the Olivares Vivos LIFE project at SEO/BirdLife in Spain. He focuses on the implementation of conservation strategies based on transferring the added value of conservation and proper resource management to the market and consumers.

For centuries, agriculture has aimed to tame nature and biodiversity. To maximise yields, industrial farming practices, such as heavy use of fertilizers and herbicides, prioritized provisioning services as the expense of regulating ecosystem services like pest control and pollination.

It is possible to increase economic profit through biodiversity enhancement, as shown by the Olivares Vivos project in Spain. The project is supporting farmers to increase profit through agri-environmental CAP schemes, through reducing costs of external inputs and through labelling. The Olivares Vivos Certification allows farmers to capitalize on biodiversity restoration by adding value to their product.

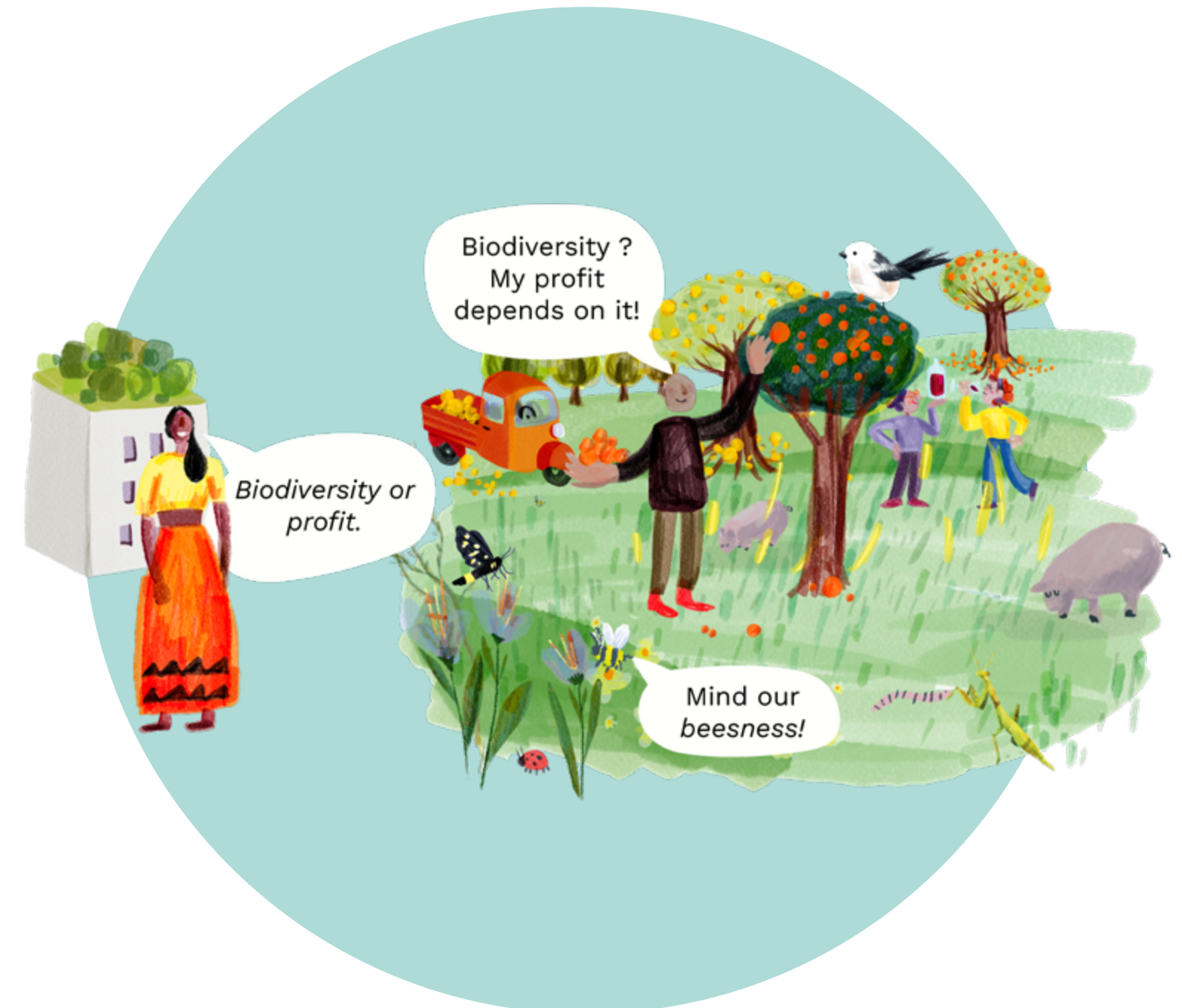
Recommended readings:  
Olivares Vivos Project. Olivares Vivos. <https://www.olivaresvivos.com/>

Recommendations for the design of the post-2020 cap concerning olive farming Recomendaciones PAC\_en, [https://www.olivaresvivos.com/pdf/RecomendacionesPAC\\_Eng\\_.pdf](https://www.olivaresvivos.com/pdf/RecomendacionesPAC_Eng_.pdf)

Small floral patches are resistant reservoirs of wild floral visitor insects and the pollination service in agricultural landscapes. Cano, D., Martínez-Núñez, C., Pérez, A.J., Salido T. and Rey, P.J. 2022. Biological Conservation, Volume 276, 109789, ISSN 0006-3207, <https://doi.org/10.1016/j.biocon.2022.109789>.

Low-intensity management benefits solitary bees in olive groves. Martínez-Núñez, C.; Manzaneda, A.J.; Isla, J.; Tarifa, R.; Calvo, G.; Molina, J.L.; Salido, T.; Ruiz, C.; Gutiérrez, J.E.; Rey, P.J. J. Appl. Ecol. 2020, 57, 111–120. <https://doi.org/10.1111/1365-2664.13511>

Landscape-moderated biodiversity effects of ground herb cover in olive groves: Implications for regional biodiversity. Rey P.J., Manzaneda, A.J., Valera, F., Alcántara, J.M., Tarifa, R., Isla, J., Molina-Pardo, J.L., Calvo, G., Salido, T., Gutiérrez, J.E., and Ruiz, C. 2019. Conservation Agriculture, Ecosystems and Environment, 277, pp. 61-73. <http://doi.org/10.1016/j.agee.2019.03.007>



This approach involves suitably managing natural herbaceous cover, restoring nonproductive areas, and installing biodiversity-friendly elements like ponds. Within only 3 years, these measures significantly boosted bird, ants, pollinator, and plant populations, in the olive groves. By restoring ecosystem services, this also reduced the inputs needs.

Finally, such models provide a foundation to inform policy and encourage financial support from public policies, through CAP payments, ensuring real opportunities for profitability while promoting biodiversity-friendly farming practices.



# Stability can ~~only~~ be guaranteed when ~~the economy is growing~~ people and planet are prioritised

Sustainable Property Policy Database, by the ZOE Institute for Future-fit Economies: <https://sustainable-prosperity.eu/policy-database/>

Raworth K. Doughnut economics : seven ways to think like a 21st-century economist. White River Junction, Vermont: Chelsea Green Publishing; 2017.

Partnership for Action on Green Economy. Green Economy Toolkit for Policymakers. 2014. Available from: <http://www.un-page.org/green-economy-toolkit-policy-makers>

United Nations Industrial Development Organization, Deutsche Gesellschaft für Internationale Zusammenarbeit. Enhancing the Quality of Industrial Policies. Designing a transformative industrial policy package. 2017.

Parrique T., Barth J., Briens F., C. Kerschner, Kraus-Polk A., Kuokkanen A., Spangenberg J.H., 2019. Decoupling debunked: Evidence and arguments against green growth as a sole strategy for sustainability. European Environmental Bureau, [https://www.researchgate.net/publication/334453443\\_Decoupling\\_Debunked\\_Evidence\\_and\\_arguments\\_against\\_green\\_growth\\_as\\_a\\_sole\\_strategy\\_for\\_sustainability\\_A\\_study\\_edited\\_by\\_the\\_European\\_Environment\\_Bureau\\_EEB](https://www.researchgate.net/publication/334453443_Decoupling_Debunked_Evidence_and_arguments_against_green_growth_as_a_sole_strategy_for_sustainability_A_study_edited_by_the_European_Environment_Bureau_EEB)

Brockway et al., 2021. Energy efficiency and economy-wide rebound effects: A review of the evidence and its implications, Renewable and Sustainable Energy Reviews, Volume 141., <https://doi.org/10.1016/j.rser.2021.110781>

Lucas Chancel, Thomas Piketty, Emmanuel Saez, Gabriel Zucman, et al. World Inequality Report 2022. World Inequality Lab, 2021, 234 p., Open Access. <https://doi.org/10.1111/padr.12547>

Myth

**Stability can only be guaranteed when the economy is growing**

Speaker

**Lydia Korinek**

**ZOE Institute for future-fit economies**

Policy Consultant at the ZOE Institute in Bonn, Germany. As a political economist, she has a keen interest the development of integrated policy approaches for socio-ecological transformations.

There is a common belief that a healthy economy must grow through a constant increase in the GDP. However, relying on growth as the main goal leads to several pitfalls. First, the assumption that productivity can increase while simultaneously decarbonizing (Green Growth), overlooks other critical planetary boundaries, such as biosphere integrity. Secondly, technological solutions are often overestimated due to the Rebound Effect, where efficiency gains lead to higher consumption. Third, the belief that growth ensures prosperity for all is disproven by rising inequality: in 2021, the richest 10% received 52% of total income, showing growth does not equate to equitable wealth distribution.

Therefore, shifting to a new economic paradigm focused on long-term socio-ecological prosperity is needed. This alternative compass emphasizes ecological stability by minimizing environmental pressure, social resilience through the provision of goods and services, and economic stability by reducing reliance on growth.

Policies aligned with this vision, such as abolishing fossil fuel subsidies, implementing universal basic services, or increasing wealth and fossil fuel taxes, can ensure stability while respecting planetary boundaries.



# Discussion: Economy for and with nature

## Key barriers

- Lack of understanding of biodiversity impacts on business and financial models
- Operational challenges in green loans systems
- Small scale of NbS projects and high transaction costs hinders insurance involvement
- Farmers often remain trapped in conventional practices
- High prices of biodiversity-friendly products: Organic and local food often reflects ecosystem services but is not accessible to low-income households.
- The impact of activities on ecosystem services are not sufficiently translated at the consumer level

## How to address them:

- Provide education to financial institutions
- Encourage financial institutions to consider biodiversity impacts and implement nature-positive lending practices through green loans regulation
- Scale up demonstration projects to show the feasibility and viability of nature-based solutions in farming and insurance
- Advocate for biodiversity-friendly products by developing market mechanisms like biodiversity credits that support small-scale landowners
- Encourage policies that allow lower income households to have access to such products
- Develop alternatives that are tailored to the farmers' needs
- Shift economic policy away from growth-focused goals toward sustainable prosperity that respects planetary boundaries

# Conclusions

In the context of an increasingly polarized political situation where myths are dominating arguments that disregard or oppose nature, the NetworkNature Annual Event debunked 24 key myths, allowing a conversation on the barriers and opportunities to address these misconceptions. By building on existing research, policies, case studies, economic opportunities, networks, ideas, and practices that are being implemented across Europe, the event demonstrated that debunking myths is possible across regions and sectors, bringing people and nature together.

From local to national and European levels, successful examples were presented, showcasing the importance of better communicating ecological knowledge across disciplines and scales. Discussions emphasized the need to engage with all stakeholders, align biodiversity goals with current economic, social and environmental challenges and to address the political dimension of nature, together with democratic and decision-making processes.

## **Shifting mindsets**

A recurring theme was the challenge of changing mindsets, as science-based information alone does not necessarily alter stakeholders' views. Discussions highlighted a reluctance to change, stemming from inertia and persistent confidence in outdated knowledge which perpetuates deeply rooted beliefs and identities. Promoting dialogues that acknowledge the implications of data and societal concerns raised by different stakeholders, rather than solely fact checking, was proposed as a possible way to challenge myths.

## **Education and knowledge**

Disconnection from nature, lack of nature's knowledge and values, as well as the "shifting baseline syndrome" were also identified at the root of generational and regional divergences in perceptions on the need to take action. Addressing these issues requires clear messaging that links nature and human health; fostering awareness through education initiatives, in particular place-based learning and outdoor classrooms; and showcasing successful examples of transformative practices to inspire confidence and drive change. The discussions underscored the need to understand science as embedded in a moral and political context, to critically analyse data, acknowledging that it is not possible to escape politics.

## **Policy and governance**

Recognizing humanity's dependency on nature, the event outlined the need to bring everybody onboard, activating both individual and collective actions. Discussions highlighted the importance of combining voluntary with legally binding measures to drive effective change. Citizens' assemblies were showcased as a great example of how democratic systems can trust citizens to create brave, bold, mind-shifting environmental policies. Such policies should be inclusive (considering underrepresented groups such as youth), cross-sectorial (e.g. further strengthening biodiversity targets in the Common Agricultural Policy CAP) and mindful of their social implications while avoiding siloed approaches. Additionally, the recognition of nature's rights - an emerging trend in Europe - was pointed out as a promising paradigm shift in nature's governance.

## **Business and Economy**

Beyond the demonstration of how NbS can outperform traditional grey infrastructure both in effectiveness and financial viability, recent modifications to EU policies have supported initiatives that align economy and biodiversity. Other financial mechanisms - such as ecosystem insurances, biodiversity credits and aligning financial tools with long term biodiversity goals - are being explored. Finally, the event underscored the need to rethink the current growth-based economic model, advocating instead for a system focused on the wellbeing of both people and the planet.

## **Valuation of nature**

A key takeaway was the need to consider nature valuation as a political issue. While nature valuation is widely practiced across sectors, its political implications are not always clearly acknowledged. Discussions emphasized the clear and growing links between nature, justice, health, and human well-being. Rethinking nature's valuation is vital in making change happen.



NetworkNature is an expanding 'network of networks' working together to raise awareness, share knowledge and build capacity about nature-based solutions to accelerate their uptake in business, science, policy and practice along the policy priorities of the European Green Deal. It will maintain and add to a diverse and science-based repository of evidence on NbS, strengthen partnerships and foster new relationships around a clear, strategic framework for action. This work is underpinned by an up-to-date EU Research & Innovation NBS Roadmap and NetworkNature's six priority themes: Biodiversity enhancement and ecosystem restoration; Sustainable food systems; Zero Pollution; Climate adaptation, mitigation and resilience; Sustainable finance, investment and just transition; Sustainable urban and regional transformation.



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