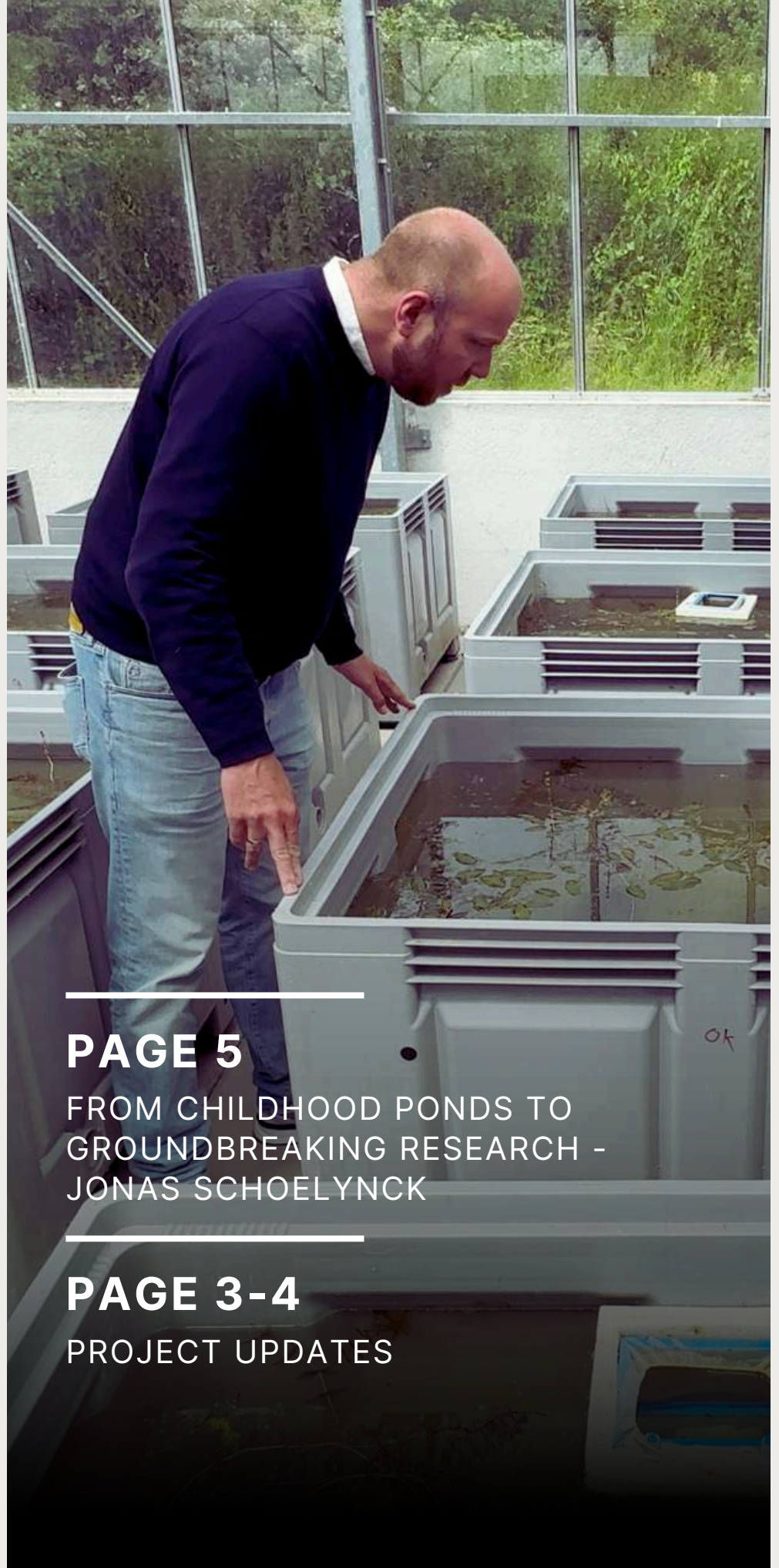


ANAEE-ERIC

NEWSLETTER :: AUTUMN 2024



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FROM CHILDHOOD PONDS TO
GROUNDBREAKING RESEARCH -
JONAS SCHOELYNCK

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PICTURE OF THE MONTH:



This month the Amanda Ölander - AnaEE-ERIC communications officer - had the opportunity to follow the AnaEE-France summer school on machine learning that took place at the Alpine location of Lautaret garden, France. In the picture above the site director Jean-Gabriel Valay is presenting research technology on site.

ABOUT ANAEE-ERIC

Keeping ecosystems healthy is vital for our planet's future, and AnaEE-ERIC is at the forefront of research to understand and protect them. By experimenting with real ecosystems under conditions like pollution and climate change, we provide crucial insights to help predict and mitigate environmental challenges.

Our work supports researchers, policymakers, industry, and agriculture in developing sustainable strategies to address global environmental issues.

AnaEE-ERIC (Analysis and Experimentation on Ecosystems) is a distributed research infrastructure that offers a network of experimental facilities across Europe, equipped with advanced tools for conducting experiments and collecting data on how ecosystems respond to changes like climate change.

We will help society to understand how it can adapt and which actions are the most impactful in reducing the climate change impact and mitigating changes in ecosystem functioning.



NEWS AND UPDATES

THE ANAEE SCIENCE CONFERENCE 2024

The first ever AnaEE Science Conference was held in Paris in October 2024. Roughly 50 people from within and outside the network participated and shared their latest research results. During the event important “next steps” for the organisation were discussed, and working groups brainstormed about how the services can be developed in the coming years.

POSITION PAPER WITH LS-RI

AnaEE-ERIC is proud to announce the publication of a new position paper by the European Life Science Research Infrastructures (LS-RI) cluster, where we are a key partner. This paper outlines critical recommendations for the upcoming Tenth Framework Programme (FP10), the next major funding initiative of the European Commission, shaping the future of research and innovation. Read the full paper on the [AnaEE-website](#).

NEW ISIA CATALOGUE

The [new ISIA catalogue](#) has been published and is accessible online. Several training sessions were given, one will soon be available online. The new ISIA is easier to use and contains an interactive map, showing the location of services and facilities.

NEW VIDEOS ON YOUTUBE

Several videos have been published on the AnaEE-ERIC youtube channel and we invite you to watch and share them with you network. We will build a collection of videos presenting the variety of services and geographic diversity in the network.

NEW TEAM MEMBERS

Joseph Timkovsky joined AnaEE-ERIC as Science Project Manager. He is now involved in the AquaServ, IRISCC, and MICROBES4CLIMATE projects. **Youssef Haidala**, our new IT engineer also joined the team recently, and he will focus mainly on developing the ISIA-catalogue. We will get to know them better on page 9.

JOIN THE PHENET & IPPN COFFEE SESSIONS!

Are you researching plant phenotyping or envirotyping? Want to learn how European research infrastructures can boost your work? Our Scientific Officer Biljana Đorđević will give a talk on exactly that, highlighting the AnaEE-ERIC services available. Don't miss out and register to the webinars now: https://www.phenet.eu/en/news-events/phenet_ippn_coffee_sessions

ELIXIR Oct 24, 10:00 CEST
EMPHASIS Oct 29, 15:00 CET
AnaEE-ERIC: Oct 31, 15:00 CET
eLTER Nov 4, 15:30 CET

WHAT DO YOU IMAGINE RESEARCH INFRASTRUCTURES TO BE IN 2050?

Early career scientists from around the world, with less than 10 years' experience in research infrastructure are encouraged to create a video and contribute to the development of RIs.

The presentations and videos will feature in a session at the International Conference on Research Infrastructures (ICRI) currently scheduled for Wednesday, 4 December 2024. [More details on their website.](#)



The participants of the AnaEE Science conference 2024

PROJECT UPDATES

AnaEE-ERIC is a member of the clusters of Life Sciences (LS-RI) and of Environmental Sciences (ENVRI). We are pleased that the expertise of the ERIC, and facilities across all members of the RI, will be shared with the larger community via several projects in the coming years.

**ALL PROJECTS FUNDED BY
THE EUROPEAN UNION**



Funded by
the European Union

AgroServ: 2022-27

UPDATES: AgroServ's second call is over and received about 40 proposals. Next call will open at the end October/November. AgroServ also arranged a successful Workshop "Research infrastructures towards Agroecological transition: How to boost our impact by working together?" in Bari, with key EU initiatives such as Agroecology Partnership, PATH2DEA EUFIC and more. Most partners and collaborators were also participating. AgroServ is also hosting a webinar series on how and why to apply to the project, registration through their website.



AnaEE-ERIC is the coordinator of AgroServ, funded by the EU under Horizon Europe (2022-27). The project supports agricultural research and innovation to tackle complex challenges like feeding a growing population combating climate change, and preserving biodiversity.

ERIC-Forum 2: 2023-27

UPDATES: AnaEE-ERIC's reference person on gender equality - Ogheneyoma Olisah, attended the ERIC Forum Gender Equality Workshop in Amsterdam. This autumn two more **webinars on Gender Equality, Diversity and Inclusion** will be organised by ERIC Forum 2, open to all ERIC personell. You can [register here](#). The ERIC Forum bi-annual meeting was held, where updates from the working groups was given.



The goal is to foster cooperation between the ERICs and to support the implementation of the ERICs' policy, shaping their community identity and consolidating their integration within the European Research Area. AnaEE-ERIC co-leads the Pillar II: "Reinforcing the internal communication". We also lead Work Package WP10: Strategy on building shared services between ERICs.

PHENET: 2023-27

UPDATES: A **postdoc position** will soon be launched, more updates to come. **TWO webinar** series will be launched this autumn, the first being the PHENET & IPPN Coffee Sessions mentioned on the previous page. The second webinar series beginning November 22nd, provide an overview of the nine PHENET use cases, addressing their scientific questions, presenting the tools that will be developed and providing a platform for a discussion and exchange with different stakeholders from academia and industry. The development of new tools and methods through 8 use cases is still in progress. These will contribute to new RI services.



In PHENET, several RI:s on plant phenotyping will join their forces to co-develop, with a diversity of innovative companies, new tools and methods - meant to contribute to new RI services - for the identification of future-proofed combinations of species, genotypes and management practices in front of the most likely climatic scenarios across Europe.

IRISCC: 2024-28

UPDATES: IRISCC has been presented in several events like EGU2024, EGI2024, AnaEE Science Conference, AgroServ workshop and is organizing a side event in the International Conference on Research Infrastructures (ICRI 2024) in December. Such opportunities are important for reaching out to potential users of the IRISCC services that include e.g. TNA and VA provision and to foster collaboration between RIs and related projects. To access publicly available deliverables, visit our website.



Integrated Research Infrastructure Services for Climate Change Risks (IRISCC) is a consortium of diverse and complementary leading research infrastructures (RIs) covering disciplines from natural sciences to social sciences, across different domains and sectors. IRISCC provides scientific and knowledge services to foster cutting-edge research and evidence-based policymaking to improve Europe's resilience to climate change.

FHERITALE: 2024-26

UPDATES: Fheritale showed the results of their survey, during the strategic meeting in Utrecht, Holland in October. The survey presented a landscape analysis of facilities that could be available to European researchers and analysed the impact of artificial materials on food, health, and the environment. This will inform the output of future work packages, such as WPs 5 and 6, which will seek to categorise available techniques and identify gaps in the techniques available to European researchers working in this area.



The EU-funded FHERITALE project aims to transform how European RIs address the difficulties posed by synthetic materials. To that end, it will systematically address the development, provision, and integration of services across the European RIs landscape, enabling the scientific community to study the effects of these materials. The project will compile a list of the services available in Europe for scientific research in diverse domains.

AQUASERV: 2024-29

UPDATES: AquaServ was featured in the latest issue of the European Aquaculture Society's (EAS) magazine following the Aquaculture Europe 2024 event, AQUASERV is highlighted as a key driver in transforming food systems, enhancing environmental stewardship, and offering innovative green solutions to meet global challenges. The AquaServ website was also launched.



The main goals of AQUASERV are to unify, enhance, and customize research infrastructures (facilities, instruments, and expertise). By providing both transnational (on-site or remote) and virtual access, AQUASERV aims to drive scientific progress and support the European Common Fisheries Policy, Farm to Fork Strategy, Sustainable Blue Economy, and European Green Deal.

Microbes-4-Climate: 2024-29



UPDATES: Several important milestones/deliverables have been submitted: Defining criteria to organize the catalogue of services [WP1] and Stakeholder and User Engagement Plan [WP7]. A few other deliverables are being actively worked on: catalogue of services, Guidelines for training and participating RIs. The M4C has also launched their newsletter and we encourage to join.



Microbial services addressing climate change risks for biodiversity and for agricultural and forestry ecosystems: enabling curiosity-driven research and advancing frontier knowledge. The project aims to deepen the comprehension of the complex relationships among microorganisms, plants, and soil within the framework of climate change.

FROM CHILDHOOD PONDS TO GROUNDBREAKING RESEARCH

JONAS' JOURNEY IN AQUATIC ECOLOGY AND TACKLING INVASIVE SPECIES

Why sparked your interest in Aquatic Ecology research?

My interest in aquatic ecology actually started when I was a kid, playing around with fish and frogs in my dad's pond. I kind of forgot about it for a while, but it came back during my MSc studies. I got really inspired by my professors at that time. What fascinates me most are the specific adaptations that species have developed to live in aquatic environments. Plus, I have to admit, I enjoy fieldwork in water more than on land—you can cool off on hot days!

What is your special field of interest?

I specialize in river ecosystem functioning. My research focuses on how aquatic plants influence water flow and quality, as well as how different factors, both biotic (living organisms) and abiotic (non-living components), affect plant growth. One key element in my research is silicon. It plays a big role in providing structural support for plants, helping them resist the forces of water flow, and it's also vital for the growth of diatoms, which are a crucial part of the aquatic food web and indicators of good water quality.

Can you share some findings from your research?

One interesting topic I've studied is the invasive Chinese mitten crab, which has become so numerous in some European waterways that it's causing damage to aquatic habitats, particularly water plants. We conducted experiments at the AnaEE-ERIC Mesodrome platform that showed [how these crabs affect ecosystems](#).

As a follow-up, we collaborated with the Flemish Environment Agency to develop a trap specifically designed to capture mitten crabs. This prototype was tested in the Mesodrome and has since been installed in over five waterways in Belgium, removing hundreds of thousands of crabs annually.

The project has expanded to other European countries like France, Germany, and Sweden through the [Interreg Clancy project](#). I'm really proud of how quickly we've been able to scale this solution across Europe.



WHO?

JONAS SCHOELYNCK

Professor of Aquatic Ecology at
University of Antwerp

Tell us about the AnaEE-ERIC Mesodrome facility. What kind of research can it support?

The Mesodrome is an incredible aquatic research facility. We have different setups to simulate a variety of aquatic environments—big ponds for standing water with fresh or saltwater, raceway flumes that mimic rivers, and even an aquaculture system for fish or other aquatic organisms. Our largest flume is basically a life-sized river that allows us to replicate flowing water conditions or even tidal environments. It's all about bridging the gap between small lab-scale experiments and real-world ecosystems.

With the Mesodrome, we can create more realistic setups where multiple species interact—fish, plants, zooplankton, and algae—simulating ecosystem-level responses to factors like climate change or pollution. This kind of setup gives us a much better understanding of how ecosystems as a whole respond to various stresses compared to studying individual species in isolation.



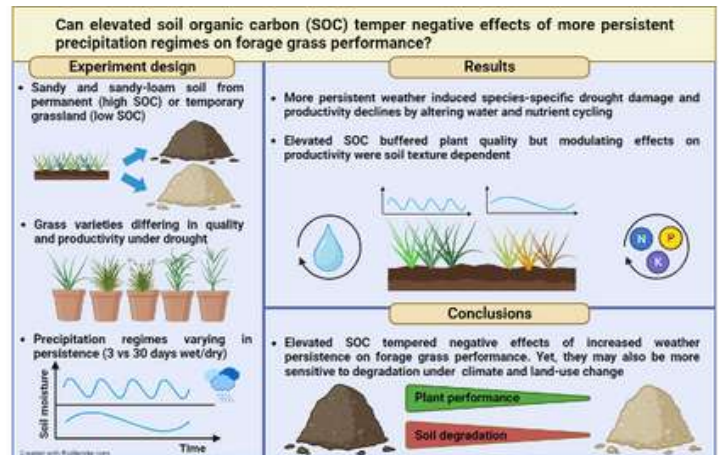
IN THE JOURNALS

ANAEE-ERIC FACILITIES FOR CLIMATE RESEARCH

PERMANENT GRASSLAND SOILS WITH ELEVATED ORGANIC CARBON BUFFER NEGATIVE EFFECTS OF MORE PERSISTENT PRECIPITATION REGIMES ON FORAGE GRASS PERFORMANCE

Agricultural practices that enhance soil organic carbon (OC) show potential in adapting to climate change. This new study in the FATI platform (University of Antwerp, Belgium) demonstrates that permanent grassland soils with historically elevated OC can buffer negative effects of altered precipitation variability in a range of forage grass species, but are also more sensitive to degradation under climate change.

First published: March 2024, Reynaert, S., et al.
 Science of the Total Environment:
<https://doi.org/10.1016/j.scitotenv.2024.170623>



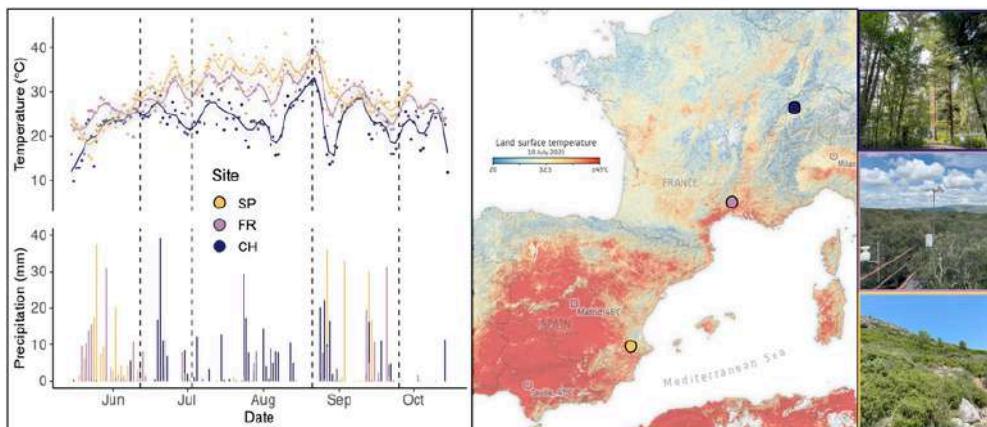
Facility: FATI (Uni of Antwerp)
 Contact: Hans De Boeck
hans.deboeck@uantwerpen.be

HIGH HEAT TOLERANCE, EVAPORATIVE COOLING, AND STOMATAL DECOUPLING REGULATE CANOPY TEMPERATURE AND THEIR SAFETY MARGINS IN THREE EUROPEAN OAK SPECIES

Heatwaves and soil droughts are becoming more frequent and intense, pushing many tree species beyond their thermal limits and causing widespread forest die-offs. To understand tree vulnerability to these conditions, we studied heat tolerance and canopy temperature regulation in three oak species across different climates (Switzerland, France, Spain). We measured leaf water potential, gas exchange, canopy temperature, and heat tolerance throughout the growing season. Results showed that increased air temperature and soil drying reduced gas exchange, causing stomatal closure. Despite extreme temperatures, trees maintained positive thermal safety margins due to high heat tolerance and stomatal decoupling, helping them avoid critical overheating. These findings highlight the importance of evaporative cooling, heat tolerance, and stomatal behavior in predicting tree survival during extreme heatwaves.

First published: Aug 2024, Gauthey, A., et al.
 Global Change Biology: <https://doi.org/10.1111/gcb.17439>

Facility: Puéchabon experimental site
 Contact: Jean-Marc Limousin
jean-marc.limousin@cefe.cnrs.fr



Left: Daily maximum temperature and total daily precipitation from May to November 2023. Dotted vertical lines indicate the start of our week-long four measurement campaigns for our three sites (SP: Dark blue, FR: Cyan, CH: Brown). Right: Map of Europe indicating the surface and pictures of each forest site.

NEWSBYTES FROM NATIONAL NODES

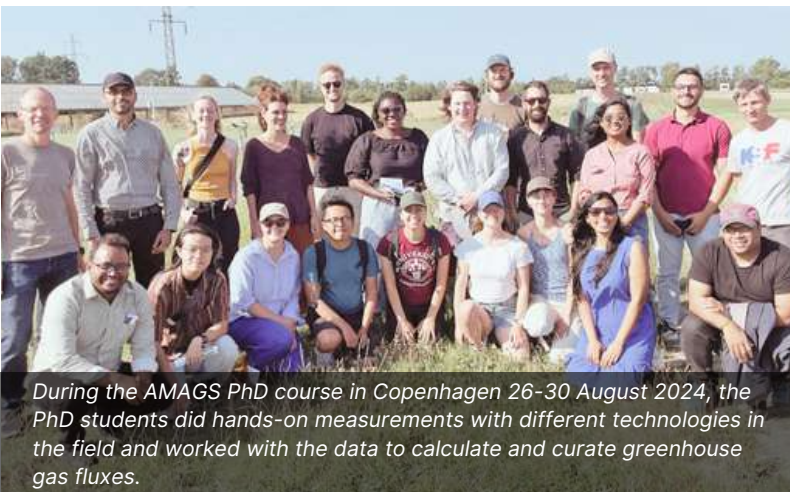
In every issue we give some updates from a selection of our National Nodes.

DENMARK

26-30 August 2024, AnaEE Denmark and AnaEE ERIC (AnaEE Technology Centre) hosted the PhD course Advanced measurements and analyses of greenhouse gas fluxes from soils and ecosystems (AMAGS) at University of Copenhagen for 17 PhD students from 5 countries.

On 6 September 2024, AnaEE Denmark also co-hosted a national Danish workshop on how to calculate and curate greenhouse gas measurements made with chamber technologies. The national Danish roadmap for research infrastructures is now open for update with a deadline for new proposals on 31 October 2024.

AnaEE Denmark is currently leading a larger national consortium proposal for continued funding and development of the environmental research infrastructures in Denmark.



During the AMAGS PhD course in Copenhagen 26-30 August 2024, the PhD students did hands-on measurements with different technologies in the field and worked with the data to calculate and curate greenhouse gas fluxes.



Water quality of pilot catchment's outflow will be monitored in WSSP-project. Photo: Joni Uusitalo

FINLAND

AnaEE Finland's research facilities at the University of Helsinki in Lammi has been participating in the Watershed Safety Plan (WSSP) project, which is funded by the EU Interreg Central Baltic program.

The Lammi Biological Station will actively contribute to the collaborative WSSP, which focuses on mitigating diffuse pollution and implementing effective, sustainable water protection measures. As part of this effort, the station will conduct source tracking campaigns utilizing advanced measuring instruments within the designated pilot catchment area.

Chemical analyses of the collected samples will be carried out at the station's water quality laboratory. In addition, the station will investigate the historical context of diffuse pollution in the region by analyzing its extensive long-term data series. The impact of common agricultural practices on the waters within the catchment will also be assessed using experimental facilities located near the catchment's outflow.



Renovation of the Macrocosms platform at the European Ecotron in Montpellier.

FRANCE

The AnaEE France community continued the upgrade of its facilities with dedicated investment on common instrumentation in 3 open-air forest experimentation installations, the development of a data portal and the remodeling of its catalog through the ISIA-CNRS application.

In September, the Lautaret Garden once again hosted the AnaEE France Summer School organized this time by University of Rennes. Participants were taught the basics of machine learning for the analysis of either sequences or images applied to ecology. AnaEE France scientists and installations were involved in the kick-off meeting of PEPR FORESTT project, a national research program that unites the scientific community to deal with forest resilience and their socio-ecological transition.

Upcoming events will include the organization of a workshop dedicated to the French lysimeter-network in Paris. AnaEE France will also be well represented at the PEPR FairCarboN days (25-27 November), another French research programme aimed at advancing our understanding of carbon dynamics in continental ecosystems.

ITALY

Established in 2015, the AnaEE Research platform FoR2N uses a field manipulative approach to study the impact of increased nitrogen deposition on nitrogen dynamics, forest health, and functioning.

The FoR2N has the advantage of evaluating the role of the canopy in intercepting and absorbing N. This approach leads to more realistic future scenarios on the long-term effects of nitrogen deposition on forest ecosystems. Furthermore, recent findings revealed processes at the canopy level that are fundamental for increasing knowledge of the N cycle in forest ecosystems.

The FoR2N research platform provides a better understanding of the forest N cycle and evidences its implications for forest carbon uptake capacity, climate change mitigation, forest management, and timber production.



FoR2N Network sites in Italian deciduous forests.

NEW TEAM MEMBERS

The AnaEE-ERIC staff has grown rapidly during the past years, and we are now counting to 11 members in the team. With the signing of the host agreement for the Data and Modelling Centre (IT) and Technology centre (DK) this year, or early in 2025, we will probably welcome a few more members shortly.



YOUSSEF HAIDALA - IT ENGINEER

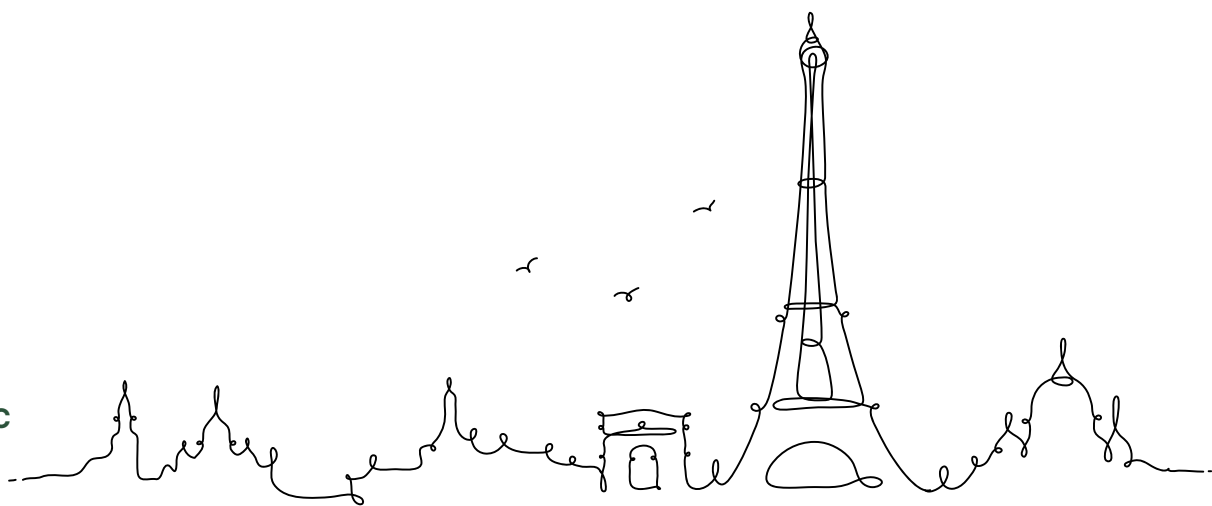
Before joining AnaEE, I worked as a software engineer intern, and now I'm beginning my first full-time role as an IT engineer. In my free time, I enjoy running and exploring nature.

The most exciting aspect of my role at AnaEE is the variety of tasks. I contribute to both software development and user needs analysis, helping to build a service catalogue that offers detailed information and makes it easier for users to discover providers and services.

JOSEPH TIMKOVSKY - SCIENCE PROJECT MANAGER

I have academic background – PhD in atmospheric chemistry (climate sciences). Plus I have gained business experience (strategy consulting, startup founder). Also, experience of connecting scientific questions to the real world applications through my role as R&D manager at a research company.

For me - the most exciting and interesting part of this position will be managing AnaEE-ERIC's contribution to cutting-edge Horizon Europe projects focused on critical global challenges. This includes managing high-level projects like Microbes4Climate, IRISCC, and AquaServ, all dealing with biodiversity, climate risks, and sustainable aquaculture. I am very excited about collaborating with experts, overseeing scientific contributions, and participation in impactful international collaborations, offering an opportunity to shape vital research and policy in environmental science.



OTHER NEWS

Working on solutions to climate change: adaptation plays a key role

“Cities have a critical role to play not only in protecting their own citizens, but in ensuring overall, long-term climate resilience and environmental sustainability. The triple crises of climate change, biodiversity loss and pollution are interlinked and reinforcing, and the impacts are even further exacerbated in densely built and densely populated urban areas.”

This says Ine Vandecasteele, expert on urban adaptation in the European Environment Agency.

[Read full interview on European Environment agency's website.](#)

An in depth interview with the The European Geosciences Union's (EGU's) Policy Manager Chloe Hill

“The science-policy interface has expanded dramatically since I first started working with EGU in 2017. It's clear that Europe's scientific and policy communities now understand the need to integrate scientific evidence into the policymaking process, and both are actively taking steps to help facilitate this. I believe this makes it easier for early-career researchers to justify their engagement in science-for-policy initiatives to their institutions and hopefully also be acknowledged for doing so!”

[Read full interview here.](#)

Nature: Feasibility concerns

The feasibility of certain climate actions needs to be carefully examined to address concerns over their practicality. Researchers across different climate change research fields are increasingly working on this topic.

Long-term mitigation pathways are the cornerstone for evaluating the climate impact of decarbonization efforts and assessing whether the current actions are consistent with temperature targets.

[Read full article here.](#)

BBC: how wildfires are changing face of the Mediterranean landscape.

The Mediterranean, historically shaped by natural fires, is now facing a critical tipping point as climate change accelerates heatwaves and intensifies wildfires. These fires, once essential for ecosystem renewal, are now burning more fiercely and frequently, threatening the long-term recovery and biodiversity of these regions.

While fire-adapted species have evolved to survive moderate wildfires, the increasing scale and intensity driven by global warming are surpassing ecosystems' ability to regenerate. Human encroachment further complicates recovery, making the Mediterranean vulnerable to permanent ecological changes.

[Read full article here.](#)

Reuters: Brazil state to consult Indigenous people on carbon credits sale

The government of the Brazilian state of Para in the Amazon will consult Indigenous communities on how they will benefit from the future sale of carbon offset credits that U.S. companies have agreed to buy to try to protect the rainforest.

In a statement received by Reuters on Monday, the Para government's environmental secretariat Semas said it "will begin a new phase of dialogue" with Indigenous peoples and other traditional communities in the rainforest. Amazon.com Inc. (AMZN.O) and a group of companies agreed last month in New York to purchase carbon credits through the LEAF Coalition conservation initiative, in a deal valued at \$180 million. Amazon helped establish this initiative in 2021, alongside other firms and the governments of the United States and the United Kingdom.

[Read full article here.](#)

AnaEE-ERIC is a distributed European-wide research infrastructure for experimental research on managed and unmanaged terrestrial and continental aquatic ecosystems.



ANAEE.EU



NETWORK OF FACILITIES



OPEN-AIR ECOSYSTEM FACILITIES

Cover various land uses; Transect Europe's climatic zones



ENCLOSED ECOSYSTEM FACILITIES

Enables higher level of environmental controls and measurements



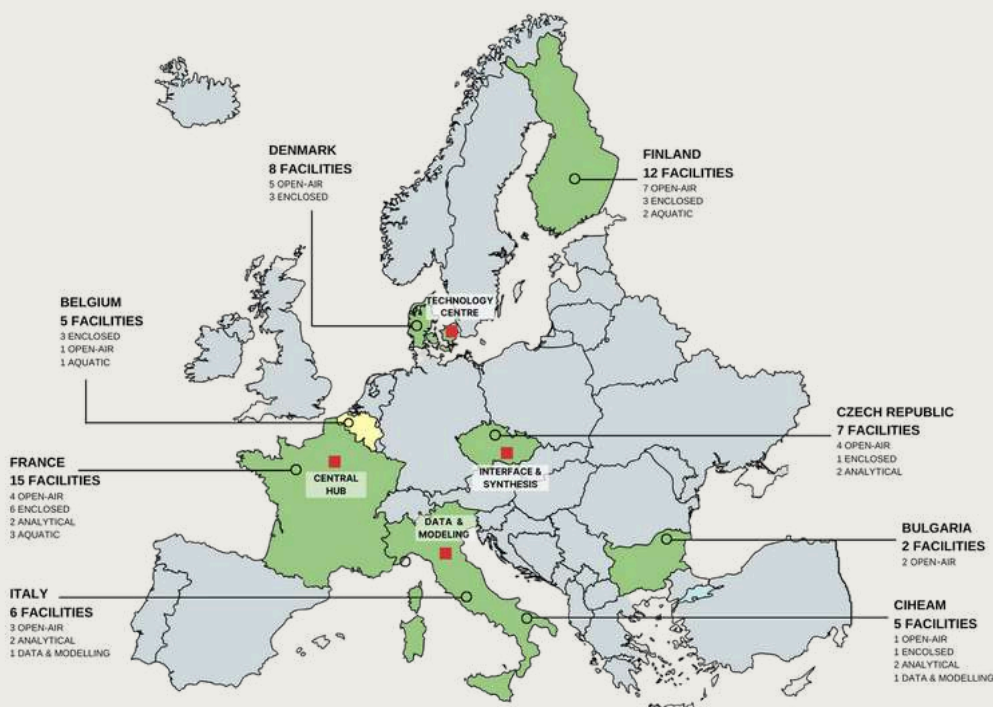
ANALYTICAL FACILITIES

Perform advanced analyses for deeper insight and robust conclusions



MODELLING FACILITIES

Provide models to improve analysis; make reliable predictions



NATIONAL NODE CONTACTS

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- Bulgaria: Irena Atanassova (ISSAPPNP)
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BROWSE THE ANAEE-ERIC FACILITY CATALOGUE