



## NEWSLETTER N°5, December 2021

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### Foreword by Michel Boér, AnaEE DG



Dear readers,

This year has been a very intense one for AnaEE. In January, we have sent the final application for the ERIC, of which we should know the outcome soon. Then, we have coordinated a very large application, called AgroServ, for the INFRA call on agroecology, with about 50 beneficiaries, and a total of 70 partners. Though we don't know yet what will be the fate of this large application, I believe that it has proved our capacity to coordinate a large team, and that it is well inside our strategic orientations and transdisciplinary approach in the area of sustainable food systems, farm to fork strategy, and the One Health approach. We have also a substantial participation in the ENRISK proposal within the framework of the call for climate-related risks on the environment. Of course, both topics are closely related.

This demonstrates the dynamism of AnaEE and its capacity in providing services in the domain of experimental ecology to a large community, while collaborating with a wide range of fellow infrastructures, with high impact on the society, especially in view of the current threats on climate and biodiversity.

This high profile has been recently acknowledged by the European Support Forum on Research Infrastructures (ESFRI), who has labelled AnaEE as a "Landmark". This recognizes a decade of efforts by many colleagues, first in proposing the concept of an original distributed RI on experimental ecology, getting the ESFRI status of "Project", then in maturing the project, reaching the "Landmark" status. This was work intensive, with a difficult learning curve, but everybody was committed to work with enthusiasm towards the result we have achieved now. The "Landmark" status acknowledges the excellent scientific added value, its impact on science but also on the society, and the quality of the implementation.

The story starts now in fact, as we have to finalize all the legal, institutional and administrative steps, and, more importantly, provide integrated services at the highest quality level. We are now committed to provide the best tools to the international scientific community for excellent research.

As we are turning towards the end of the year, I wish you all a Merry Christmas and a wonderful end-of-year celebration.

### AnaEE labelled Landmark by ESFRI !

## ESFRI Roadmap 2021

### List of operational RIs (Landmarks) – formal ESFRI PROJECTS 2010/16

	ACRONYM	TITLE	POLITICAL SUPPORT
HEALTH & FOOD	AnaEE	Infrastructure for Analysis and Experimentation on Ecosystems	FR, BE, CZ, DK, FI
	MIRRI	Microbial Resource Research Infrastructure	PT, ES, BE, EL, FR, LV, NL, RU, RO
ENVIR.	ACTRIS	Aerosol, Cloud and Trace gases Research Infrastructure	FI, AT, BE, BG, CY, CZ, FR, EL, IT, NL, NO, PL, RO, ES, CH
ENERGY	EU-SOLARIS	European Solar Research Infrastructure for Concentrated Solar Power	ES, CY, DE, EL, FR, TR, PT

After two years of evaluation, monitoring and collaborative work, ESFRI released its 2021 Roadmap for Research Infrastructures in Europe. Opening the day, Simona Kustec, Slovenian Ministry of Education, Science and Sports recalled that the ESFRI Roadmap is a key element in shaping the Research & Innovation ecosystem for the new European Research Area (ERA). Not only, it selects research infrastructures of pan-European importance, and monitor the advancements of already selected ESFRI projects, it also provides a landscape analysis of the Research & Innovation ecosystem in Europe.

The ESFRI report contains a list of 11 new research infrastructure projects, which after design and evaluation process, were considered as of pan-European relevance for research & innovation. **In addition, the ESFRI granted the status of Landmark to four well-established Research Infrastructures, MIRRI, ACTRIS, EU-Solaris, and AnaEE !** Jan Hrušák shared that all these ESFRI RIs have proven to move science forward, for the society and for the corresponding scientific communities and are truly the backbone of the ERA. He also added that all the RIs are strategic investments and their impacts exceed their scientific domains.

The panellists also recalled that ESFRI Research Infrastructures have a role to play in positioning European science on top at the international level. As they address global issues, they also need to further develop international collaborations. More efforts in communicating the RIs impacts on society should be provided, and working hand in hand with stakeholders is highly encouraged. Jean-Eric Paquet highlighted that the socioeconomic impact and innovation-driven role that RIs provide, will be of high importance for the delivery of the European missions' objectives. He also encourages Research Infrastructures to look at the environmental impacts of their activities and welcomes the effort of ESFRI to support the steps towards the sustainability of the RIs.

With the Landmark label, AnaEE is taking another big step towards operationalisation, and soon to be ERIC!

## Save the date: AnaEE Conference 2022 "Ecosystems services under pressure: the role of experimentation"



The first AnaEE Conference, organized in collaboration with CzechGlobe and the Czech University of Life Sciences, will be held in Prague, Czech Republic, from 27 to 30 June, 2022.

carbon sequestration, ensure drinking water quality and quantity, and sustain or develop food production. Experimentation and modelling are of uttermost importance to understand the functioning of ecosystems and their behaviour under anthropogenic pressures such as climate change, pollution, land use and management practices.

The goals of the AnaEE Conference 2022 are to discuss the role of agriculture, forests and natural ecosystems in reducing GHG emissions and increasing carbon sequestration, as well as to discuss the importance of holistic approaches that integrate across ecosystem boundaries spanning from terrestrial to freshwater ecosystems. A stakeholder session will be held to summarize the outcomes of the conference and initiate a discussion aimed at policy makers, practitioners, farmers and industry, as well as other related scientific communities, to leverage the added value of the AnaEE infrastructure and find answers to the most pressing ecosystem challenges. At the end of the conference, a full day will be devoted to an internal AnaEE business meeting, and training for platform managers and other interested parties.

Registration and abstract submission will open in January at: <https://anaeeconf2022.sciencesconf.org/>

## Save the date: 1st AnaEE Technology Foresight Workshop, 10-11 May 2022, France

AnaEE will hold its first official Technology Foresight Workshop in Montpellier, France, on 10-11 May 2022 under the title “**Using ecotrons in ecosystem research and integrating them in multi-site ecological experiments**”.

Ecotrons are advanced experimental platforms for studying ecosystem processes under highly controlled climate conditions – including potential future climate scenarios that cannot technically be simulated under open-air conditions. AnaEE aims to promote integrative studies that combine the strengths of the high control and greater range of potential simulations in ecotrons and the more natural conditions and climate/ecosystem variability in open-air platforms. Such integrative approaches will increase the overall confidence in and applicability of the results obtained.

The aim of the first AnaEE Technology Foresight Workshop is therefore to learn about and explore the range of possible usages of ecotrons in experimental ecosystem research and to discuss the best ways to integrate ecotrons and open-air platforms in coordinated studies.

More info on the workshop and how to register will follow in January 2022.

## Focus on Platform: Experimental Station Domaninek, Czech Republic



Domaninek is located 60 km away from the city of Brno in Czech Republic. The facility is under operation since 2012 and is used to simulate future climate conditions, especially the effects of elevated CO<sub>2</sub> concentration, drought stress, the influence of UV radiation, nitrogen nutrition and increased temperatures in agricultural ecosystems.

Domaninek is an experimental facility, which is at the interface between open and closed platforms. It consists of 24 automatic field chambers - so called Open top chambers (OTC) with lamellar roof. These chambers allow to manipulate atmospheric **CO<sub>2</sub> concentration**, **air temperature** by passive warming (automatic increase of temperature by +3-10°C using the ventilation system and opening or closing the roof lamellas), **water availability** by automatic reduction of precipitation (roof lamellas opening or closing during rainfall) and by automatic irrigation, **UV radiation filters**, **N nutrition** or **genotypes**.

This platform is closely connected with analytical (metabolomics and isotopic) and remote sensing platforms and it can serve for more deeper studies on plant resistance/tolerance mechanisms, the role of primary and secondary metabolism, searching for metabolic markers usable for plant breeding and development of remote sensing methods for monitoring of disease distribution within the field.

# Zoom on two new instruments of Horizon Europe: Partnerships and Missions



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## What is a partnership?

European Partnerships bring the European Commission and private and/or public partners together to address some of Europe's most pressing challenges through concerted research and innovation initiatives. As part of the strategic approach to European Partnerships, a new governance framework - the strategic coordinating process - is established. The goal of the process is to support an evidence-based policy for EU research and innovation partnerships and a strategic vision of their landscape. The portfolio of European Partnerships includes 49 candidates which have now been taken into the next step of preparations. There are three types of partnerships

- **Co-Programmed European Partnerships:** between the Commission and mostly private (and sometimes public) partners.
- **Co-funded European Partnerships using a programme co-fund action:** These are partnerships involving EU countries, with research funders and other public authorities at the core of the consortium.
- **Institutionalised European Partnerships:** These are partnerships in the field of research and innovation between the Union, EU member states and/or industry. These partnerships require legislative proposals from the Commission and are based on a Council Regulation ([Article 187](#)) or a Decision by the European Parliament and Council ([Article 185](#)). [EIT Knowledge and Innovation Communities](#) (KICs) are also institutionalised partnerships.

In the area of food, bioeconomy, natural resources, agriculture and environment, the following partnerships are of interest for the AnaEE community:

- **European Partnership accelerating farming systems transition: agroecology living labs and research infrastructures:** Calls with opening dates in 2023-24
- **Agriculture of data:** Calls with opening dates in 2023-24
- **Horizon Europe Partnership on Biodiversity (Biodiversa+)**
- **European Partnership for Safe and Sustainable Food Systems:** Calls with opening dates in 2023-24
- **European Partnership for a Circular bio-based Europe**
- **European Partnership Water Security for the Planet (Water4All)**

For more information, you will find the draft partnerships proposals [on the EC website](#).

## What is a mission?

One of the main novelties of Horizon Europe is the introduction of missions, aiming to achieve a measurable goal within a set timeframe, with impact for science and technology and/or society and citizens that could not be achieved through individual actions. **Missions are highly territorial and specifically call for partnerships with local actors**, with the objective of developing science and delivering solutions to respond to the global challenges in the different European regions.

The following mission areas, which have been defined in the Horizon Europe agreement by Council and Parliament in April 2019 are:

- **Adaptation to Climate Change, including Societal Transformation:** support at least 150 European regions and communities to become climate resilient by 2030.
- **Cancer:** improving the lives of more than 3 million people by 2030 through prevention, cure and for those affected by cancer including their families, to live longer and better.
- **Healthy Oceans, Seas, Coastal and Inland Waters:** Restore our Oceans and Waters by 2030
- **Climate-neutral and Smart Cities:** 100 Climate-Neutral and Smart Cities by 2030
- **Soil Health and Food:** 100 living labs and lighthouses to lead the transition towards healthy soils by 2030

To start the implementation of the five missions the Commission will make EUR 1.89 billion available from the Horizon Europe programme for the period 2021-23.

## NEWS FROM NATIONAL NODES

@AnaEE Belgium



In the running project "Shifting rainfall regimes: a multi-scale analysis of ecosystem response (REGIME SHIFT)", researchers harvested end-of-season plant biomass in the third consecutive year of this experiment in the Antwerp FATI. Four Phd students are involved in this multi-disciplinary project, looking into responses to



regimes (shorter or longer periods with consecutive dry or rainy days) using a gradient approach. In the 2021 growing season, we additionally imposed warming with infrared heaters. More details on the set-up and first results can be found in Reynaert et al. 2021 (Global Change Biology).

## @AnaEE France

- **AnaEE France, renewed on the national roadmap for research infrastructure until 2025:** Resulting from the merge of AnaEE France Ecotrons and AnaEE France Natura, AnaEE France brings together 33 original sites, enabling ecosystems manipulation (from alpine ecosystems to tropical forests), either in controlled conditions, less controlled or in an open environment. AnaEE France platforms offer cutting-edge ecosystem characterization tools in order to simultaneously understand the state variables relating to living organisms and environments, and the flows of matter and energy. The capacity to characterize ecosystems is increased within the infrastructure by providing 7 analytical platforms in the laboratory or in situ in the field of environmental genomics, soil biochemistry and gas analysis.
- **Summer school AnaEE France, Lautaret Garden, 26-30 september 2022:** After the 2021 edition dedicated to remote sensing, a summer school on carbon and nitrogen fluxes in ecosystems will be organised in 2022, under the coordination of the coordination of Samuel Abiven, scientific director of Ecotron Ile de France and Professor at the Ecole normale supérieure. Registration will open in the first quarter of 2022 on the [AnaEE France website](#).
- **Publication: Analysis of complex trophic networks reveals the signature of land-use intensification on soil communities in agroecosystems.** Soil samples from 16 experimental plots at 4 agro-ecosystems sites of the AnaEE France ACBB (Lusignan, Theix, Laqueille and Mons) were compared using methods of Environmental DNA to characterize food webs and biodiversity. The analysis shows that the intensification of the management of agro-ecosystems leads to a loss of functional diversity by modifying the networks of interactions between living organisms. A study which illustrates the interest of long-term experiments in documenting changes in biodiversity with new analysis techniques. The study is available here: Bloor, J.M.G., Si-Moussi, S., Taberlet, P. et al. Analysis of complex trophic networks reveals the signature of land-use intensification on soil communities in agroecosystems. *Sci Rep* 11, 18260 (2021). <https://doi.org/10.1038/s41598-021-97300-9>

## OPEN CALLS

**HORIZON EUROPE** – Deadline for Cluster 5 & 6 calls: 15 February 2022. More information [here](#)

*Please, if you are aware of any announcement of opportunity, share with us. If you plan to participate to one of these calls and use the AnaEE RI, please, tell us in advance, and follow the AnaEE access rules.*

## EVENTS CALENDAR

**ENVRI Week 2022**, 31 January - 4 February 2022, Dresden (GE). [More information here](#).

**AnaEE Technology Foresight Workshop**, 10-11 May 2022, Montpellier (FR).

**International Data Week**, 20-23 June 2022, Seoul (KR). [More information here](#).

**AnaEE Conference 2022**, 27-30 June 2022, Prague (CZ). [More information here](#).

**Summer school AnaEE France**, 26-30 September 2022, Lautaret Garden (FR).

**International conference on research infrastructures (ICRI 2022)**: 19-21 October 2022, Brno (CZ). [More information here](#).

## About ENVRI Community

### • ENVRI Week 2022, January 31 - February 4

This will be a hybrid event organized online and in Dresden, Germany. ENVRI week is a week dedicated to Environmental Research Infrastructures. ENVRI week hosts ENVRI-FAIR project-related sessions as well as several other sessions targeting different groups of stakeholders. More information and registration [here](#).



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