



NEWSLETTER N°2, December 2020

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Happy holidays

From AnaEE

Foreword by Michel Boër, AnaEE DG



Dear readers,

2020, the year of the coronavirus outbreak and the global sanitary crisis, is coming to its end and should be considered as a wake-up call. As pointed in the last [IPBES report](#), prevention is better than cure; critical knowledge gaps have to be closed, such as “the understanding of the relationship between ecosystem degradation and restoration, and the risk of emergence of pandemics”, or “the impact of climate change and related extreme weather events”. Thanks to its experimental approach, AnaEE can be a major contributor to this research.

On a more positive note, 2020 has been also a critical year for our implementation activities: we have answered to the ESFRI questionnaire to become a landmark on the European Research Infrastructure 2021 roadmap, and finalized our application for the ERIC, with the approval of the statutes and of the last version of the Scientific and Technical Document. Recently, we organized the first AnaEE webinar, part of the AgroEco2020 conference (see report below). The difficulties experienced this year did not prevent us to prepare our infrastructure towards operability.

2021 will be a year rich in events, with the last steps for the landmark label and for the ERIC, and, moreover, the first call for proposals to use our European infrastructure. AnaEE, with its service centres, will also organize training activities and workshops. In 2021, the first calls for the new Horizon Europe program will be released, and we should prepare outstanding applications that, first, will enable the research community around AnaEE to perform cutting edge research, and, second, will bring sustainability and visibility to our infrastructure.

I wish you all a merry Christmas and a great end of year vacation, while keeping safe from the Covid.

AnaEE on the path to become an ERIC and a European Landmark

The STD is an important strategic document that describes the infrastructure and its business model, and presents its scientific priorities.

In this document, AnaEE has identified key scientific priorities that actively support the European Green Deal strategy:

- Plant health and ecosystem functioning
- Greenhouse gas emissions in ecosystems, especially in agriculture
- Ecosystem carbon storage

The Ministry of Higher Education, Research and Innovation of the host country (France) prepares now the formal application for the ERIC status to be sent shortly to the European Commission. A period of 6 months is expected to complete the procedure.

AnaEE in the ENVRI community and ENVRI-FAIR

AnaEE is one of the RI contributing to the ESFRI Cluster of Environmental Research Infrastructures (ENVRI) which aims at identifying common issues and at developing integrated and shared solutions in environmental research.



The ongoing ENVRI-FAIR project (2019 -2022) is the connection of ENVRI to the European Open Science Cloud (EOSC). The solutions prototyped in the previous ENVRI-plus project (2015 -2019) are deployed for, data/metadata and services interoperability and for the feeding of the EOSC portal.

The participating RIs cover the different domains of the Earth system: Atmosphere, Marine, Solid Earth and Biodiversity / Ecosystems.

The ENVRI-FAIR organisation consists in cross-cutting WorkPackages (WPs) about project management, communication, policy, training, common requirements, implementation technical solutions and 4 domain specific WPs. AnaEE, which is represented by the CREA (Italy), CNRS and INRAE (France), is part of the "Biodiversity and Ecosystem domain" (Figure 1) together with eLTER, LifeWatch and ICOS.

AnaEE mainly contributes to the development of technical and semantic interoperability and is involved in interoperability use-cases such as "the description of sites for experimentation or observation" and "the soil water content".

The ongoing implementation of the AnaEE RI benefits from this participation in ENVRI-FAIR, particularly for the establishment of the Data and Modeling Centre and the services it will host. Engineers in charge of the identification and integration of provenance metadata elements in the characterization of AnaEE resources (data and services), as well as the implementation of semantic modeling and deployment pipelines for standardized data sets and metadata records, have been hired, thanks to the support provided by the EC through ENVRI-FAIR.

A look back at the AgroECO conference and AnaEE day



3rd International Scientific Virtual Conference AGROECOSYSTEM SUSTAINABILITY

Links between Carbon Sequestration in Soils, Food Security and Climate Change

Vytautas Magnus University Agriculture Academy, Lithuania, 2–3 December, 2020

The Vytautas Magnus University, Agriculture Academy, Lithuania, and the Lithuanian Academy of Sciences, organized the 2nd and 3rd December the AgroEco2020 conference featuring the 1st AnaEE webinar. The event gathered about 200 participants from several countries in the world, and it was a great success.

Aušra Blinstrubienė, Vytautas Magnus University Agriculture Academy, Lithuania and Zenonas Dabkevičius, Lithuanian Academy of Sciences opened the event by recalling that international cooperation is key to strengthen knowledge and research. The first day a plenary session was followed by three parallel thematic sessions.

Cees Veerman, Chairperson of the board of the Mission for Soil Health and Food of Horizon Europe, and former Minister for Agriculture of the Netherland, opened the plenary session. He highlighted the critical EU objective of 75% of healthy soils by 2030, and the need for the collaboration between academia and the society to reach this objective. He emphasized the role of living labs as a tool to gather both researchers and farmers, in a co-creation approach. Michel Boër, DG of AnaEE, presented an overall review of AnaEE, its objectives, its strategy, and the specificity of the approach to forecast the future of ecosystems, and the impact of the infrastructure on agriculture, industry, and the society at large, notably within an evidence-based policy approach.

During the plenary, participants discussed about agroecology, the BIOEAST initiative, precision agriculture, environmental management, the influence of organic production on bioactive substances in food product, circular bioeconomy. The three parallel sessions tackled soil health and C sequestration for sustainability, food quality and safety, soil and crop management towards a chemical pesticide-free agriculture, the role of circular bioeconomy in climate change mitigation, biodiversity, crop and production diversification, precision farming and digital technologies.

The second day of the conference was dedicated to AnaEE. It was the occasion to share an overview of the services currently under development. Web services such as the AnaEE website, the proposal portal and SEISM application were presented as well as funding opportunities. The representatives of Services Centres gave out presentations about the missions and stages of development of the Data and Modelling Centre, the Technological Centre and the Interface and Synthesis Centre. It was also the opportunity to show the role of AnaEE in ENVRI-Fair; as an example, AnaEE Denmark presented its method for the FAIRification of data acquired at Danish platforms. These presentations were followed by a focus on the unique features of Ecotrons in AnaEE, and of the FATI-Platform in Belgium. Finally, the collaborative approach in Finland was presented, with a national infrastructure that manages together the three local nodes of AnaEE, ICOS and eLTER.

Our Lithuanian partners presented their rich landscape of facilities, with presentations of the various types of platforms they propose: analytical, enclosed, forestry, aquacosc, agro-ecosystem, plant phenotyping.

AnaEE warmly thanks the Lithuanian organizers for holding this conference, and thanks all participants to this very successful event. We look forward seeing you all to the next events organized by AnaEE.

[AnaEE day presentations are available here.](#)

NEWS FROM NATIONAL NODES

@AnaEE Denmark

- **FAIR and data management:** AnaEE Denmark has finalized its first FAIRification roadmap and currently collaborates with the AnaEE Data & Modelling Centre to make FAIRified data available directly via the AnaEE data hub.
- **Event:** An online workshop to work on common data analysis from the ECO2flux greenhouse gas exchange chambers used across three Danish platforms will be held 4 January 2021.

@AnaEE France

- **FAIR and data management:** AnaEE France organized a virtual workshop dedicated to data management and semantic annotation of data with AnaEE thesaurus and ontology in November 2020. A total of ca. 40 staff members from AnaEE France joined this workshop to learn the best practices in FAIR data management and train with the AnaEE France workflows.
- **Technology:** Thanks to funding from the national program *Investissement d'Avenir*, AnaEE France will invest in a new single-cell genomics equipment which will be available at the Environmental Genomics platform in Rennes in 2021 and open to the AnaEE community. The tools will make it possible to perform advanced genomic analyses of entire microbial communities, for example.
- **Science :**
 - Publication of *Ecotrons: powerful and versatile ecosystem analysers for ecology, agronomy and environmental science* [accessible here](#)
 - Mobile PTR-MS platform: Microorganisms in soil are known to be both a source and a sink of volatile organic compounds (VOCs). Nevertheless, little is known about the influence of the microbial soil community structure and diversity on VOC emissions. One of the first experiment using the AnaEE France PTR-MS analytical mobile instrument demonstrates that Proteobacteria, Bacteroidetes and fungi are VOC producers while the other prokaryotic phyla are consumers. This study opens a new era of research on this topic. [Accessible here.](#)
- **Job opportunity:** The CNRS and AnaEE France are looking for an engineer to develop an information system dedicated to access and use of AnaEE France platforms in compliance with ERIC AnaEE procedures. The job announcement in French is [available here](#).

@AnaEE Finland

- **Building the Research Infrastructure:** AnaEE Finland on the new national RI roadmap of Finland. AnaEE FI is part of the INAR RI (Integrated Atmospheric and Earth System Research Infrastructure) umbrella consortium that was nominated on the new national RI roadmap of Finland for 2021- 2024 by the Academy of Finland. In addition to AnaEE-FI INAR RI consortium consist of ICOS-FI, ACTRIS-FI and eLTER-FI. Several of AnaEE platforms are co-located with sister RI in Finland.

OPEN CALLS

- [Area 6: From farm to fork](#)
- [Area 7: Restoration of biodiversity](#)
- [Area 9: European Research Infrastructures capacities and services to address European Green Deal challenges](#) (mostly GHG observation and air quality in cities)

[ERC grants](#): Closing dates for Starting Grants 12/01/2021, Consolidator Grants 21/1/2021, Advanced Grants 20/05/2021, POC 14/01/2021

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

Workshop on Impact Assessment, Evaluation and Monitoring of Research Infrastructures by ACCELERATE, ERIC Forum and RI-PATHS:

December 16 - December 17, 2020

ENVRI Week: February 1, 2021 - February 5, 2021

EGU 2021: April 19, 2021 - April 30, 2021. More information to submit your abstract [here](#)

ICRI 2021, International Conference on Research Infrastructures: June 2-4, 2021, Ottawa, Canada



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