EMME-CARE

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D9.5 Second Annual Report contents of the PDER, knowledge and data management, and IPR protection, communication, outreach & public engagement

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Deliverable Number	Deliverable Title	Lead Beneficiary	Type	Dissemination Level	Due Date (in months)
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V1	28/06/2021	Initial version		CYI
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1.Introduction

This document refers to Deliverable "**D9.5: Second Annual Report contents of the PDER, knowledge and data management, and IPR protection, communication, outreach & public engagement**", and discusses deliverables, milestones and other activities that occurred during M13 – M24 (September 2020 – August 2021) of the EMME-CARE TEAMING-Phase-II Grant Agreement (Grant No. 856612). More specifically, this deliverable addresses the above in relation to the contents of the 'PDER – Plan for the Dissemination and Exploitation of Results', which is linked to Task 9.1.c: "Monitoring the different contents of the PDER (led by the Cyprus Institute [CyI])", knowledge and data management, and IPR protection linked to Task 9.2 of the same name (led by CyI), and communication, outreach & public engagement linked to Task 9.3 of the same name (also led by CyI).

The purpose of the Tasks described above, along with their associated deliverables, milestones and other relevant activities, as these are described in this deliverable, align with the wider objectives of Work Package 9 – Dissemination, Exploitation and Communication (led by CyI). Namely, they aim to:

- maximize the impact of the Center of Excellence (CoE) by setting up and leveraging appropriate channels to reach and engage potential users and stakeholders;
- secure high levels of scientific and industrial connectivity for the CoE (eco-innovation clusters, R&D boost projects; GA sections 1.1.2.8; 1.1.2.9) through appropriate, targeted dissemination and exploitation (GA sections 2.2.1; 2.2.2);
- establish a dynamic role in the surrounding innovation system (connectivity and clusters) GA Sections 1.3.7; 2.1.1.2; 2.1.1.3); and
- aim for a higher national and international profile with correspondingly greater visibility through a wide range of communication activities (GA section 2.2.3).

1.1 Summary of Deliverables and Milestone

In the frame of the abovementioned objectives of Work package (WP) 9, during M13 – M24, the EMME-CARE Consortium has completed the successful and timely re-submission of deliverable **D9.3: Data Management Plan (Open Data Pilot)** (linked to Task 9.2b, led by CyI) addressing the feedback received in the context of the First EMME-CARE Project Review Meeting. Further details regarding relevant updates and how these link to EMME-CARE's actions concerning Data Management can be found in section 3.1 of this document.

During the reporting period for this deliverable, the EMME-CARE Consortium has also marked notable progress in regards to the following Milestones:

- **MS36 EMME-CARE exhibition halls opened (led by CyI)** - *The Milestone relates to the Communication, Outreach and Public Engagement activities of Task 9.3, and in particular to the establishment and continued function of CoE permanent exhibition halls.*
  As outlined in the Grant Agreement (2.2.3.), the CoE will be creating a permanent exhibition area in its new building. Due to unforeseen circumstances and obstacles the new building planned to house the CARE-C Headquarters in Nicosia is not projected to be ready by M24 (expected by M52). Meanwhile, and to keep as much as practically feasible in line with its commitments, the CoE has planned the launch within 2021 of an interim exhibition area, appropriately situated in its current premises and specifically, at the Ground Floor of the Novel Technologies Building (NTL) in its Athalassa Campus. Further details provided in section 4.6 of this deliverable.

- **MS37 Publication of 100 scientific articles by the CoE (led by CyI)** - *The Milestone is associated with activities within the Plan for the Dissemination and Exploitation of the Project's Results (PDER) of Task 9.1, and in particular with the publishing of Scientific articles and publications.*
  It should be highlighted that this deliverable was achieved ahead of schedule (due in M30). Further supporting information and links to the CoE's detailed list of publications can be found in section 2.1 of this deliverable.

1.2 Impacts and implications from the COVID-19 pandemic

In the context of this Report, we must also acknowledge the continuing implications brought to EMME-CARE's dissemination, exploitation and communication activities by the global COVID-19 pandemic. As already noted in D9.4, the unfolding COVID-19 situation has had an impact on the format of the Consortium's activities, with the greatest shift observed from events with physical presence, to EMME-CARE embracing the organization and continuous participation in online and/ or hybrid activities (including webinars, online meetings and other remote collaboration and networking activities). In some cases, the global shift to online modes of meeting has opened up new opportunities for WP9 activities, allowing the CoE and the Consortium to reach audiences that it might not have been possible to reach through physical meetings (due to budgetary, travel or other restrictions). Details in in the upcoming sections of this deliverable.

In terms of the content, EMME-CARE has continued to align with the two-pronged approach adopted since the start of the pandemic in 2020, specifically, ensuring that through its activities it aims to:

- Help raise awareness for EMME-CARE activities that aim to contribute to better understanding the impacts of the pandemic, for example in relation to the effects of lockdown measures on air pollution (see section 2); and
- Align EMME-CARE's key messages to global discourses that highlight the connections between the pandemic and the climate emergency and emphasise the need for urgent climate action and Green Recovery to promote longer-term safety and prosperity.

Supporting information for this work can be found throughout the sections that follow.

2. Contents of the PDER

This section outlines the second annual report on the contents of EMME-CARE's PDER as these link to the CyI-led **Task 9.1.c: Monitoring the different contents of the PDER**, which includes:

- Scientific articles and publications, conferences and workshops.
- Brochures, leaflets and e-Newsletter.
- Website: consolidation and upgrading from Teaming-Phase-I into CoE, and annual maintenance.
- Dissemination activities related to national and regional clusters, and R&D and student mobility programmes.

In the context of the above, the Second Annual Report also includes mentions of any other relevant activities undertaken during the reporting period (M13 – M24).

2.1 Scientific articles and publications, conferences and workshops.

Scientific Articles and Publications

As already clarified in D9.4, for consistency purposes, the reporting convention followed by the CoE for scientific articles and publications is being conducted in line with the reporting timelines and requirements set forth by the Cyprus Institute. Accordingly, the CoE gathers information on scientific articles and publications in two intervals each year: January – June, and July – December. More specifically, for the numbers quoted in this section, information quoted for years up to 2020 represent scientific articles and publications for each respective *calendar* year, whilst for the year 2021 scientific articles and publications reported in this deliverable represent the period January – June 2021.

Regarding peer-reviewed scientific publications, as already stated in the Grant Agreement (section 2.2.2) and D9.3 Data Management Plan (Open Data Pilot) the CoE prioritizes being fully in-line with the relevant guidance contained in the Horizon 2020 online manual[1], and following a gold open access approach. Accordingly, a record of the CoE's publications is also readily available at any time through the CoE's website (https://emme-care.cyi.ac.cy/publications/). More information about Open Access and the CoE's **Data Management Plan (DMP)** on section 3.1 of this deliverable.

Publications through the years:

In 2019, the CoE has reported sixty (60) scientific articles and publications, while in 2020 it reported seventy-four (74) scientific articles and publications.

So-far in 2021 (January – June), the CoE is in a position to report eighty-two (82) scientific articles and publications that have either been published, accepted or submitted in relevant journals and other publications, **fifty-eight (58)** of which have already been **published or accepted for publication**.

Publications of the research teams of the now CoE, have been on an onward trend beginning from the time of the Atmosphere and Climate Division of the CyI in 2009, that the CoE is projected to continue to develop and further enhance based on the number of 2019 & 2020 publications and indications from so-far publications in 2021. When examining this overall (2009 – 2020), **over 50% of all publications have been published in top-10 cited journals** (according to the Scimago Journal & Country Rank). For reference, a bar chart visualizing this information for 2009 – 2020 is included below.

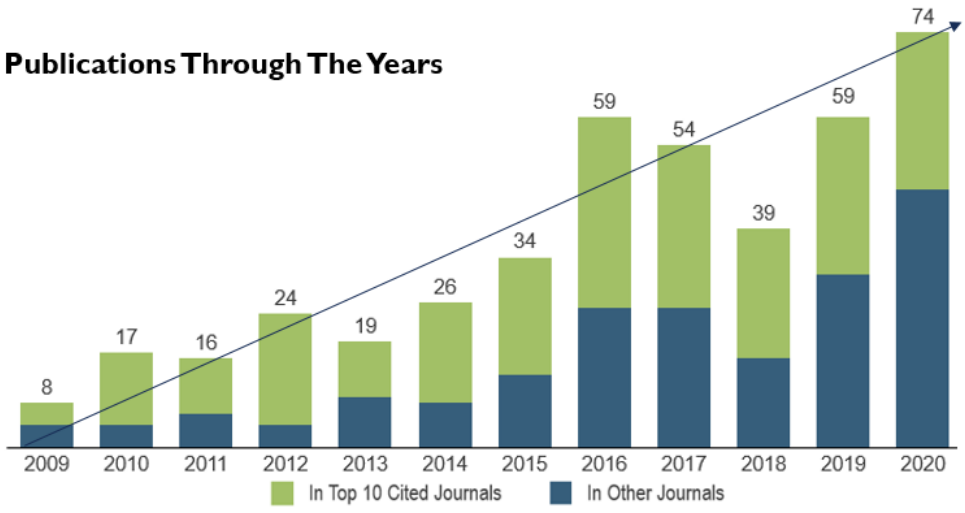


Figure 2.1.1: Publications through the years, with breakdown of publications in top-10 cited journals.

[1] http://ec.europa.eu/research/participants/docs/h2020-funding-guide/cross-cutting-issues/open-access-data-management/open-access_en.htm

The full list for so-far publications for the CoE can be found on the dedicated webpage on the EMME-CARE website (https://emme-care.cyi.ac.cy/publications/). This ensures that the latest information about CoE publications are openly accessible by all interested, and organized by year in a user-friendly way. The website also allows the user the functionality of searching through publications, hence enhancing their findability.

MS37 Publication of 100 scientific articles by the CoE (due M30 – led by CyI)

Based on the above reported numbers, the CoE has officially **achieved Milestone MS37** – **Publication of 100 scientific articles by the CoE** (led by CyI), ahead of its designated due date (M30), as the accumulative number of CoE scientific articles published or accepted for publication has reached one-hundred and thirty-two (132) as of M24.

Conferences and Workshops

During the reporting period (M13 – M24) the CoE has presented and participated in **thirty-three (33)** *scientific* conferences, workshops and trainings, out of which a total of **twenty-six (26)** took place in 2021 (January – June), contributing to the dissemination activities of the Center. The detailed list of these can be found in the Annex.

It should also be noted that the CoE has participated or led training on Research Management via its Research Innovation Support Operations (RISO) Unit. Details of these can be found in Annex I of D1.6: Second Annual Report on the CoE's operation.

The CoE has also successfully organized and hosted workshops and trainings aimed at raising the profile of the CoE and enhancing its visibility, network and reach within scientific and other specialist communities. Some highlights are included below.

Virtual Workshop: Innovation in Atmospheric Sciences, 18 May 2021

On May 18, 2021 EMME-CARE in collaboration with ACTRIS (The Aerosol, Clouds and Trace Gases Research Infrastructure - https://www.actris.eu/), co-hosted the **1st Innovation in Atmospheric Sciences Virtual Workshop**.

Through a full day of sessions, talks, and activities the workshop brought together atmospheric science communities to discuss the latest innovations in the sector. Participants had the opportunity to find out about the latest technologies, products, services, and instrumentation.

The Workshop's welcoming address was given by Prof Jean Sciare, Director of CARE-C and Coordinator of EMME-CARE, followed by a keynote by Prof Paolo Laj, Professor at the University of Grenoble Alpes and the University of Helsinki and Interim ACTRIS Science Chair. The Programme included 30 Oral Presentations reporting on the main innovations in the field of atmospheric sciences and a selection of 23 virtual PICO presentations with recent relevant advances in the field. Presenters came from universities, research institutions and private companies from across Europe and beyond. Details of the programme can be found on the event webpage here.

The Workshop brought together nearly **400 participants from 45 countries**, and created a unique platform for networking and knowledge-exchange between key contacts from academia, private companies, the public sector and NGO, including:

- Research Organizations operating EU Research Infrastructure (RI) or interested in RI data and services
- Private Companies offering scientific instrumentation or services to EU RIs

- Industrial End-Users looking for new technologies/services
- Air Quality Networks interested in enhancing their monitoring capacities.

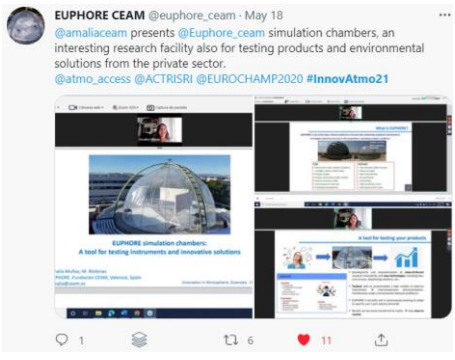
The workshop was hosted by EMME-CARE and ACTRIS and organized by CARE-C, the Cyprus Institute and the University of Helsinki, with the support of the Max Planck Institute for Chemistry in Mainz (MPG), the French Alternative Energies and Atomic Energy Commission (CEA), and the Atmosphere and Climate Competence Center (ACCC).

The workshop was also a **partner event of the 2021 EU Green Week** (https://www.eugreenweek.eu/).

Using the dedicated hashtag #InnovAtmo21 to promote the event on social media platforms, the Workshop managed to reach an even wider network of stakeholders, with many presenters and participants actively sharing their input and impressions of the event, and continuing the virtual "conversation" even after its conclusion. "Screenshots" of these can be found below.

The feedback received by Workshop speakers and participants during a live feedback session conducted over Sli.do was overwhelmingly positive, while it also demonstrated a clear need amongst key stakeholders for opportunities such as those provided by the Workshop to bring together academia and industry on matters of atmospheric research, technology and innovation. EMME-CARE aims to continue to play a central role in this space, in line with its strategic project objectives and dedicated role in addressing air pollution and the climate emergency.

Figure 2.1.2: Closing slide of Innovation in Atmospheric Sciences Virtual Workshop.



Figures 2.1.3, 2.1.4 & 2.1.5: Screenshots of tweets from participants of Innovation in Atmospheric Sciences Workshop

Online Workshop on MSCA Postdoctoral Fellowships Preparation, 15 July 2021

On 15 July 2021, CARE-C successfully hosted an Online Workshop on proposal writing for prospective applicants to the MSCA Postdoctoral Fellowships 2021 Call.

The workshop briefly introduced CARE-C as a prospective Host, and focused on providing practical advice and support to prospective applicants on key aspects of proposal preparation, including:

- Better comprehending the content & rules of the call
- Understanding the "reviewers' mind-set" and use it in proposal writing
- Deciphering what is the expected content per evaluation criteria;
- Utilizing practical "hints & tips" for competitive proposal writing

The workshop was attended by interested applicants and those looking to find out more about the 2021 Call.

The workshop's speaker was Pierantonios Papazoglou Manager of the Research-&-Innovation Support-Operations (RISO) Unit of the Climate and Atmosphere Research Centre-of-Excellence (CARE-C) at The Cyprus Institute (www.cyi.ac.cy), and former MSCA National Contact Point and Programme Committee Member for Cyprus, from 2008 to 2017. Especially for MSCA, he is known for being the initiator and main author of the unofficial support handbook "Survivor's Guide".

To provide the opportunity to engage with interest applicants that were not able to attend the online webinar live, a recording of the session can be accessed online, while more information about applying for an MSCA Postdoctoral Fellowship with CARE-C, The Cyprus Institute as a host organization, are available on the EMME-CARE website.

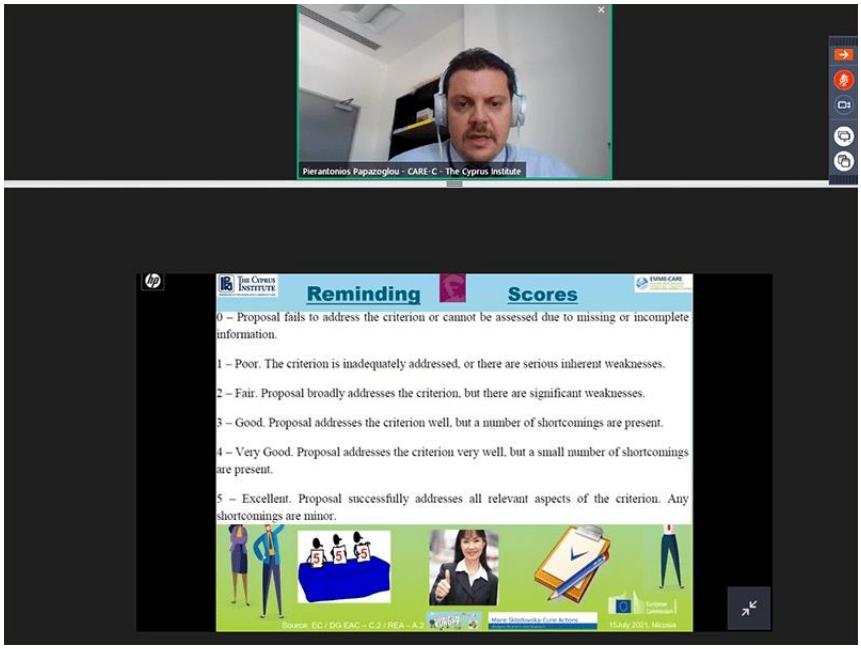


Figure 2.1.6: Screenshot of the Online Workshop on MSCA Postdoctoral Fellowships Preparation

CSP4Climate International Conference, 15 – 17 December 2020

The CSP4Climate 2020 International Conference was held online, between the 15th and 17th of December 2020. Two years after the successful organization of the 1st CSP4Climate conference, the need to take immediate action to address climate change, the most important global challenge of our times, is more urgent than ever. The adverse effects of climate change are getting more pronounced, especially in the Mediterranean basin.

In that context, CSP4Climate 2020 aimed to argue for global decarbonization by analyzing the knowledge accumulated since the last conference, and discussing progress during the time elapsed.

Due to abundant available solar energy in the Mediterranean and Middle East, Concentrated Solar Power (CSP) Technologies could play a very important role in the decarbonization of the Energy Sector. The challenges of CSP and the advancements of renewable energies were discussed in conjunction to mitigation and adaptation measures through renewable energies. Furthermore, challenges and opportunities that emerge from the European environmental and cost-effective policies and measures were presented and debated.

Conference topics covered a number of relevant areas including:

- General overview of the climate change challenges and strategies adapted to address them
- The role of energy transition in mitigating and adapting climate change in the Eastern Mediterranean and the Middle-East (EMME)
- The Technological Frontier as it applies to the EMME Region
- Hydrocarbons and Renewables: Conflicts and Opportunities
- Regional and International Approaches

CARE-C actively participated and contributed to the Conference that was organized and hosted by the Cyprus Institute. Indicatively, the Conference's Opening Session on Climate Change that was Chaired by CARE-C Director, Prof Jean Sciare, and presentations by Prof C N Papanicolas and Dr George Zittis of CARE-C's Impact & Policy Department and Environmental Predictions Department respectively.

The CSP4Climate 2020 International Conference was organized under the framework of the H2020 ERA Chair CySTEM Project

2.2 Brochures, leaflets and e-Newsletter.

Promotional material that highlight and showcase the vision, purpose and work of the CoE are extremely helpful in helping to raise its visibility among different audiences. Accordingly, a number of promotional material was produced during the First Reporting Period (M1 – M12) as set out in the PDER. Specifically, the EMME-CARE Brochure, CARE-C Brochure, MSc/MPhil Environmental Sciences Brochure and the CoE Research Infrastructure Leaflets were produced and made available in both print (in the CoE and other CyI premises, as well as being disseminated in relevant events and shared with appropriate visitors) and digital formats (found on the EMME-CARE and CyI site).

Further to these, the CoE has moved forward with expanding its promotional material library by producing 5 new short videos, highlighting its Research Infrastructure & Labs. Specifically, short videos of 4-5 mins in duration were professionally produced, narrated by CoE researchers, scientists and students. The videos showcased the facilities and described the purpose, functions and capacity of:

1. The Cyprus Atmospheric Observatory
2. The Unmanned Systems Research Laboratory
3. The Environmental Chemistry Laboratory
4. The Instrumentation Laboratory
5. The High Performance Computing Facility

The videos are hosted on a dedicated YouTube playlist, and embedded on the EMME-CARE website. All videos clearly credit EMME-CARE through prominently showcasing the designated funding acknowledgement and logos and feature the logos of the project and Advanced Partners. The videos are regularly used to promote the CoE and have been used to provide "virtual tours" of its premises to prospective collaborators, guests and other stakeholders at times where the pandemic has restricted in-person tours.

Figures 2.2.1 & 2.2.2.: Screenshot and End-Credits of the CoE Research Infrastructure Video for CAO.

Leaflets, brochures and videos of the CoE are accessible at all times in digital format through the CoE website (https://emme-care.cyi.ac.cy/news/ - Brochures & Reports, Gallery).

e-Newsletter

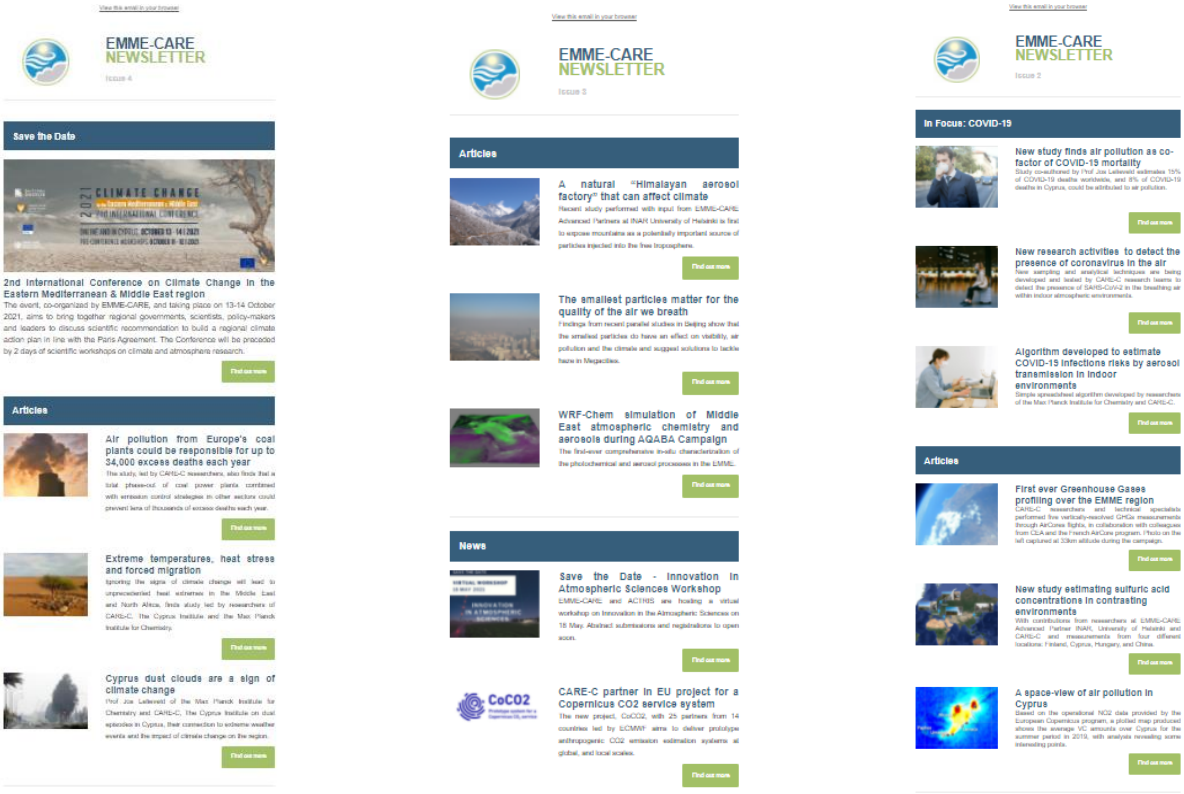
The EMME-CARE e-newsletter, using the EMME-CARE branded template created during the First Reporting Period, is produced and circulated termly and includes articles, news items and updates from the CoE and its Advanced Partners, focusing on showcasing the work and results produced by the Center..

The e-newsletter is shared with the CoE's mailing list, including CoE affiliates and Advanced Partners.

All issues of the e-newsletter are accessible at any time through the CoE website at https://emme-care.cyi.ac.cy/news/#nl.

To continue to expand the reach of the CoE and the EMME-CARE project, the newsletter is prominently featured on the EMME-CARE website, alongside an invitation for interested visitors of the website to subscribe to it and receive future issues of the newsletter by email. The invitation to join the EMME-CARE mailing list is also made visibly available in the context of workshops, webinars and other public events organized or co-organized by EMME-CARE. As a result of this approach the EMME-CARE mailing list has gathered nearly **150 new subscribers** during the reporting period of this deliverable.

As per GDPR requirements, a relevant declaration is included in the online newsletter sign-up form, informing potential subscribers of what they will be signing up to, how they can unsubscribe at any time and providing a link to the EMME-CARE Privacy Policy with information about what and how data will be gatherer, used and managed if they subscribe. "Screenshots" of recent e-newsletters can be found below.



Figures 2.2.3, 2.2.4 & 2.2.5.: Screenshots of past issues of the EMME-CARE e-newsletter.

2.3 Website

As per the scope and vision for the development of the CoE, its dedicated website (https://emme-care.cyi.ac.cy/) has gone through two phases of consolidation and upgrading during the First Reporting Period that were detailed in D9.4 (Consolidation and upgrading from Teaming-Phase-I into CoE; and Further upgrading and annual maintenance of the CoE website done in M1 – M12).

This sections outlines:

a) Website Performance Metrics
b) Annual maintenance upgrades (M13 – M24)

More details for each point can be found below.

a) Performance metrics of the CoE website

As already outlined in D9.4, the CoE tracks website traffic and related visitor metrics for its site, that are analysed to optimize the CoE's approach to marketing, user experience and server performance. Indicatively, the site has been visited by c. 4, 700 new users during the reporting period, the majority of which has been drawn to the website during promotional campaigns for events or other notable activities hosted or organized by the CoE. This analysis allows the CoE to determine the visits per day to the website that can be compared with CoE promotional activities, contributing to measuring and assessing their impact, and adjusting them in real time for maximum effect

In line with GDPR the functionality of this tool is covered in the Privacy Policy and Cookie Policy readily available and easily accessible at all times through the footer of the EMME-CARE site.

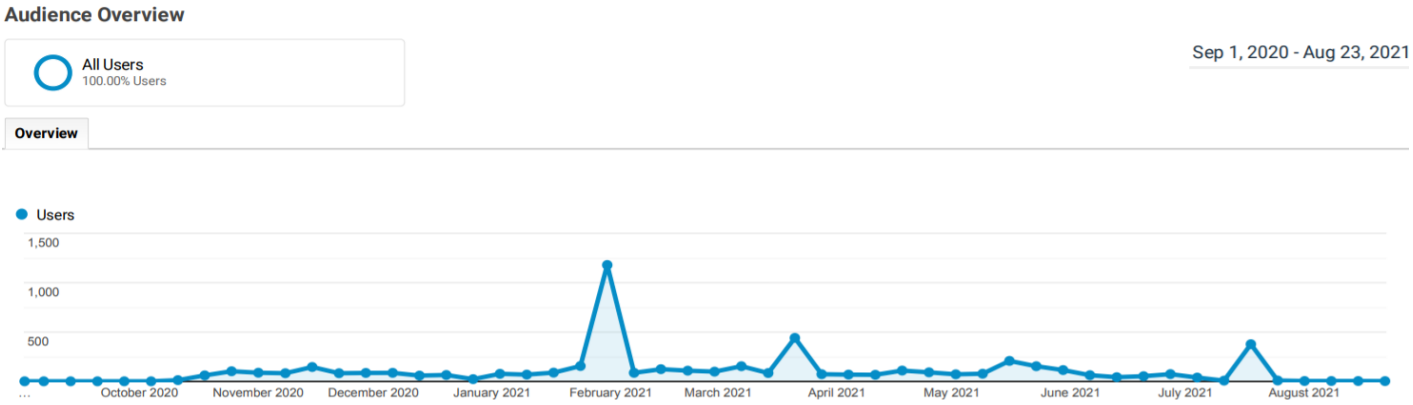


Figure 2.3.1: Screenshot of CoE website traffic metrics dashboard

b) Annual maintenance upgrades (M13 – M24)

As outlined in D9.4, a number of further upgrades were planned to be brought to the EMME-CARE website during M13 – M24. These have been planned in line with what has been provisioned in the Grant Agreement and in alignment with plans outlined in D9.1, and were carried out as follows:

- **Environmental Data Webpage**, EMME-CARE Website
  A new page was created, accessible through the high-level menu of the CoE site, to signpost and provide access to Environmental Data measured, captured or managed by the CoE. Several attractive contents are under construction to be displayed here such as data visualization tools to display weather and air pollutant observations in close to real-time. Collaborations with the Department of Labour Inspection (Air Quality Stations Network) and Department of Environment (Weather Stations Network) are aimed to enable the fast and efficient implementation of such data visualisation applications. The longer-term ambition here is to become established as the go-to Online Resource for Environmental Observations in Cyprus. The page currently catalogues some of the types of data available by the CoE, with Interactive Charts from Regional Background station on Agia Marina Xyliatou. It should also be noted that the intention is the development of this work will align with the creation of an adjacent app, with real-time weather and air quality monitoring data as outlined in the Grant Agreement (sections 2.2.1, 2.2.2 & 2.2.3).

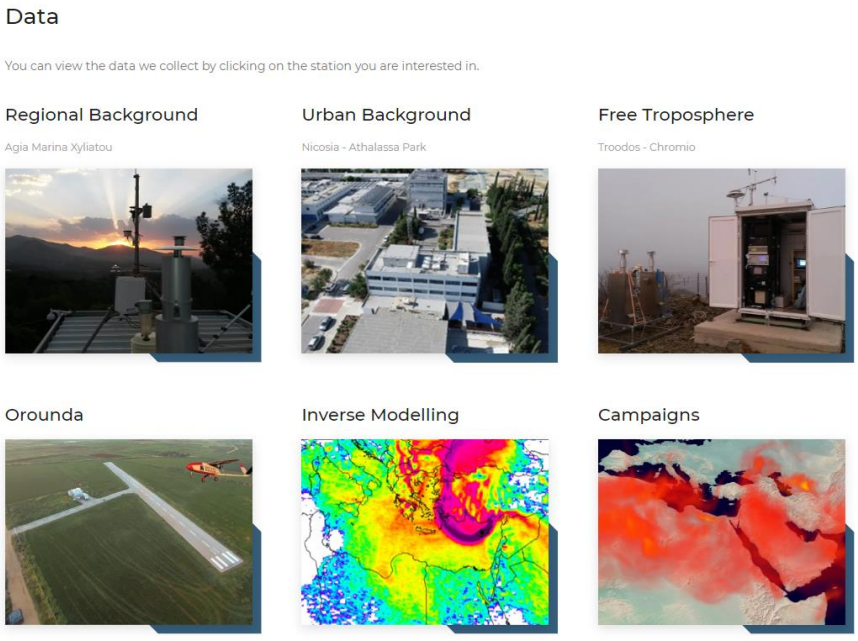


Figure 2.3.2.: Screenshot of Environmental Data Webpage (https://emme-care.cyi.ac.cy/data/)

- The **Cyprus Atmospheric Observatory (CAO)** website. This flagship facility is a major selling point of CARE-C as it will provide new High-Quality environmental observations that are not available currently in the EMME region. The dedicated CAO website (https://cao.cyi.ac.cy) /has been completely re-organized in line with the structure of the Unmanned Systems Research Laboratory (USRL) website (https://usrl.cyi.ac.cy/), with increased multi-media contents, technical information and links to the main EMME-CARE site. Among other information, the website displays information about CAO's three stations in Cyprus (Agia Marina Xyliatou, Nicosia, Troodos), as well as a full list of the Projects and Regional and International Networks that CAO actively contributes to. The site also features a list of CAO team members (Researchers, Technical Support, Students and Project Officers) and publications. It also features a dedicated section with the latest news and updates from the group. Last, but not least, the site has a dedicated "Data" page which currently displays near-live air quality measurements relating to the Agia Marina Xyliatou and Nicosia CAO stations. The intention is that as the site continues to develop, it will display an exhaustive list of near-real-time environmental observations (atmospheric parameters) and a list of scientific instruments (to be) purchased in the context of EMME-CARE (Cyprus Governmental funds) to inform the scientific community about our competitive research capacity and the relevance of our long-term monitoring strategy.

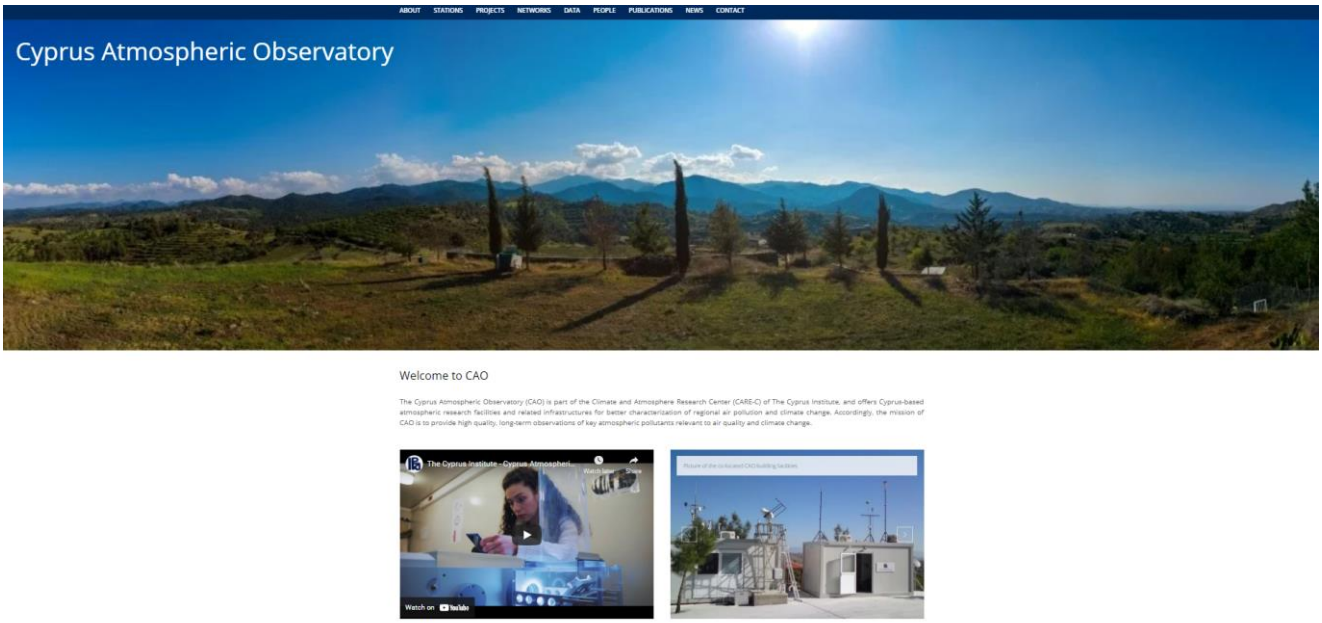


Figure 2.3.3: Screenshot of the CAO website.

2.4 Other dissemination activities related to national and regional clusters, and R&D and student mobility programmes.

During the reporting period for this deliverable (M13 – M24), the CoE has further strengthened and expanded its growing network of national, regional and international clusters with a variety of stakeholders from academia, the public and private sectors as well as NGOs and International Organizations, as these were first established and reported in D9.4 (for M1-M12).

To further enhance its efforts to specifically target the diverse range of stakeholder types that are involved with EMME-CARE, and taking into account recommendations provided in the context of EMME-CARE's First Annual Review Meeting, the Consortium has proceeded to conduct a stakeholder mapping exercise.

Accordingly, the below sections outline the updated national, regional and international clusters of the CoE, and highlight relevant outcomes resulting from the Consortium's stakeholder mapping exercise.

Updates on EMME-CARE National Clusters

Below, is a visualization of selected stakeholders included in the CoE's updated national clusters, valid as of M24, including:

- **Academia and other "Teaming" CoEs in Cyprus**, for collaboration and joint exchanges in terms of research projects and publications.
- **Associations and NGOs**, for dissemination of CoE activities and results and networking.
- **Government Departments of the Republic of Cyprus**, regarding staff affiliations, education and training, services provision, establishing MoUs, the implementation of National Action Plans and in areas of policy consultancy.
- **Private Stakeholders**, including innovation projects and services and access to research infrastructures.

Figure 2.4.1: Visualization of CoE national clusters

Updates on Regional and International Clusters

EMME-CARE Regional Professorship Programme

EMME-CARE's Regional Professorship Programme aims to strengthen, expand and enhance collaboration networks in the EMME region to tackle air pollution and climate change and their impacts, through establishing formal collaborations with top Universities in the countries of the EMME region. In the reporting period of this deliverable, the EMME-CARE Professorship Programme was joined by QEERI - Qatar Environment and Energy Research Institute in Qatar, expanding the network to include organizations from **6 countries**.

Figure 2.4.2.: Visualization of updated EMME-CARE Professorship Programme network

Regional Climate Change Initiative

The Cyprus Government Initiative for Coordinating Climate Change Actions in the Eastern Mediterranean and Middle East (EMME) aims at the development of a Regional Action Plan to address the specific needs and challenges countries are facing in the EMME region, to address and ameliorate the impact of climate change and advance mitigation actions in accordance with the Paris Agreement. As part of the Initiative, the Cyprus Institute is coordinating the work of 13 Scientific Task forces, one of which is being led by the CoE, which also plays an integral role in the network of over **200 scientists** and experts, from over **30 organizations** and over **25 countries** from the EMME region & beyond, that is being brought together by the Initiative.

Affiliation scheme with top European Experts to boost R&D capabilities

The CoE boasts a total of 16 affiliated and part-time Faculty / Researchers (4 of which through EMME-CARE Advanced Partners), to enable staff mobility and leverage knowledge, expertise and networks exchange to boost the CoE's R&D capabilities. More specifically this includes 9 Faculty and 7 Researchers from 7 different countries across the four Research Departments of the CoE. Details are included in the Annex.

Other International Networks

In addition to the abovementioned national, regional and international clusters, the CoE also takes advantage of its participation in a number of other internationally esteemed scientific and research networks. More specifically:

- ACTRIS: Aerosol, Clouds and Trace Gases Research Infrastructure
- AERONET: Aerosol Robotic Network
- Earth Networks
- EURAXESS: Researchers in Motion
- European Monitoring and Evaluation Programme
- Future Earth: Research for Global Sustainability
- ICOS: Integrated Carbon Observation System
- MedECC: Mediterranean Experts on Climate and environmental Change
- MENA CORDEX: Middle East North Africa Coordinated Regional Climate Downscaling Experiment
- WMO-GAW, World Meteorological Organization – Global Atmospheric Watch

Student Mobility Programmes

As already mentioned in D9.4, and outlined in section 1.1.4.2 of the Grant Agreement, and in accordance with the scope and objectives of WP3 Education and Training, with the support of its Advanced Partners, the CoE aims to become a regional hub for student exchanges between EU and the EMME region, as well as promote wider international exchanges. During M13-M24, the CoE has continued to build on the initiatives established in the first reporting period, to promote international mobility. Specifically:

- **International Dual Degree PhD** (Cotutelle): enabling greater student mobility and enhancing the attractiveness and competitiveness of the CoE in attracting top-tier PhD candidates to study in Cyprus. Current Cotutelle CoE collaborations include the University of Paris-Saclay, the University of Helsinki and the University of Lille.
- **Training Opportunities**: leveraging existing tools and opportunities the CoE already subscribes to, such as COST actions and ERASMUS+ (supported by the CyI Graduate School). The list of trainings attended by the CoE in section 2.1 of this deliverable.
- **EMME-CARE Professorship Programme**: providing additional opportunities are being offered for increased mobility within the EMME region

Stakeholder Mapping

As an outcome of its Stakeholder mapping exercise, the Consortium has created a template format that has allowed it to review and categorize its relations with all actors (beyond the Consortium) that are *directly* engaged with the CoE and the EMME-CARE project. The intention is for this to act as a "live record" regularly reviewed and updated by the Consortium in line with relevant EMME-CARE reporting periods.

In line with this, it is also serving as a tool for ensuring relevance and efficiency of audience segmentation and planning efforts for dissemination and exploitation activities, and further enhancing the impact of the Consortium's activities for maximizing the uptake of project results and its overarching impact potential.

For mapping purposes, stakeholders were organized in the following categories:

- **Consortium Partner**, partners in funded project
- **Partner**, have signed an MoU
- **Collaborator**, purpose-driven collaboration / collaboration agreement
- **Regional Professorship Program**, part of the EMME-CARE RPP
- **Service users**, recipients of CoE services or products
- **Other**, any other type of relationship for stakeholders directly engaged with EMME-CARE

Overall, at the time of writing of this deliverable, EMME-CARE's directly engages with stakeholders from **117 organizations**, across **33 countries**, from academia, international organizations, public sector & government, third sector / NGOs as well as private companies. A breakdown per type of organization is included below.

Type of Organization	**Number per Organization type**	**Percentage per Organization type**
Academic	59	50%
Public	31	26%
Private	17	15%
NGO	8	7%
International Organizations	2	2%

The above information is guiding the dissemination, and exploitation activities of the Consortium in planning its activities for the next reporting period, while it will also act as a helpful basis in further developing its exploitation plan within the context of WP8 activities.

3. Knowledge and Data Management and IPR Protection

This section outlines relevant updates relating to **Task 9.2 Knowledge and Data Management, and IPR Protection**, led by the Cyprus Institute**.** More specifically to Task 9.2. this includes, activities related to:

- Formulation of the Data Management Plan and Formulation and revision of FAIR Strategy (D9.2).
- Formulation and revision of IPR – Intellectual Property Rights strategy, particularly in relation to product and services transfer/commercialisation; standardisation/accreditation activities; spin-off creation.
- Management of national and regional clusters with relevant communities/end-users/policy makers.

This section will further elaborate on the first two activities outlined in Task 9.2, as the management of national and regional clusters has already been expanded at large in section 2.4 of this deliverable.

3.1 Data Management Plan and FAIR Strategy

D9.3: Data Management Plan (Open Data Pilot)

D9.3: Data Management Plan (Open Data Pilot), submitted in February 2020, outlined version 1.0 of the Data Management Plan (DMP), describing the overall approach for producing, collecting and processing research data for EMME-CARE and the Research Departments and Infrastructure Units

that have been consolidated in the context of the CoE, including the CoE's FAIR Strategy. Following feedback received in the context of EMME-CARE's First Annual Review, Deliverable 9.3 - Open Data Pilot, was updated to include improvements related to DMP and was re-submitted in March 2021.

The below summarize the key updates that were made to the DMP and D9.3 (revised) within that context:

- Expanded on and refined DMP "section 2.2. Making data accessible": several updates were made to further specify which CoE data will be made accessible, how and when. In particular, it was detailed that scientific data and other relevant digital information are classified into three categories in regards to accessibility: i) openly/publicly accessible (O), ii) private (P), and iii) sensitive/confidential/restricted (R) data. A distinct accessibility process was laid out for each category, alongside an implementation timeframe.

- Incorporated DMP updates reported in D9.4 into the revised D9.3 document: the DMP is a live document, and as such relevant updates to v1.0 submitted in February 2020 as part of D9.3, were reported in D9.4, including in regards to the establishment of the Data Access Committee, the design of Facility-Specific databases, the preparation of a data repository infrastructure to accommodate the CoE's increasing volume of weather model data, and the Nextcloud open source project.

For more information, please refer to the revised submission of D9.3.

Other updates

To host the ever-increasing workload and storage needs of the CoE, a new server infrastructure was installed. This infrastructure consists of a dedicated, refurbished, HP ProLiant DL380 G9 G, with two Intel Xeon E5-2650V4 CPUs, 128GB Registered ECC DDR4 SDRAM and 3,84TB mirrored SSD storage, which can be easily expanded if deemed necessary in the future.

All core data management services have been moved to this new server and new services have been designed to assist scientists in their efforts to monitor and manage the quality of the gathered data. Specifically, a Grafana installation has been set up and several dashboards are designed to provide an easy way to inspect data for anomalies and sort out instrument malfunctions. Furthermore, the use of adminer web application allows authorized users to export or update data, by using custom and pre-defined sql queries.

For efficiently uploading the gathered data in our sql databases, while providing a first level of error recognition, custom unix micro-services had to be written. Matlab was selected as the development platform for those micro-services and a gitlab sourcecode repository was implemented to allow scientists and developers to collaborate efficiently on the relevant code. These micro-services are designed to run efficiently on dedicated virtual servers, the "workers", which for security reasons, are totally isolated from the rest of the institute's network, and several KPIs are defined so we can monitor the execution time of each process and the available capacity.

By implementing this worker – microservice architecture, we can provide near - real time (60-90 minutes after data capture) data access, while we can expand our infrastructure's capacity and computational power by simply adding more hosts as soon as it becomes necessary.

The database security model is implemented, and several different access levels are defined, so each function (web publishing, micro-service, developer, API, or scientist) has only access where it is necessary, to protect our data from erroneous actions and unauthorized connections.

Currently the whole process of transferring the raw data files, uploading the data into the database, and archiving the files with proper naming has been completed for 6 instruments, with more to follow.

3.2 Formulation and revision of IPR strategy, specifically in the context of exploitation activities (incl. commercialization, spin-off creation etc.)

Activities relating to the revision of the CoE's IPR strategy are informed by the work of the CoE's Innovation Department, with support, when appropriate, from the CyI's central Entrepreneurship & Innovation Unit, as well as know-how from Advanced Partners, and available resources on IPR.

Initial formulation and revision of the CoE-IPR-strategy's exploitation activities took place during the First Reporting Period as reported in D9.4. During M13 – M24, specific provision in regards to the formulation and revision of IPR have been made tailored to the needs of specific projects and initiatives, such as EMME-CARE Boost Projects, as defined, agreed and signed by its consortium.

4.Communication, Outreach & Public Engagement

This section outlines the Second Annual report on EMME-CARE Communication, Outreach & Public Engagement as these link to **Task 9.3 Communication, Outreach and Public Engagement**, led by the Cyprus Institute. More specifically, this includes:

- Creation of the CoE's social media profile and public forum.
- Creation of giveaways, memorabilia and distribution of promotional material.
- Organisation of climate change conference series (see Section 2.2.3.3) every two to three years.
- Creation and update of web and mobile app, with real-time weather and air quality monitoring.
- Implementation of boost project on science training for journalists.
- Establishment and continued function of permanent exhibition halls

In the context of the above, the Second Annual Report also includes other communication, outreach and public engagement activities including press releases and features.

4.1 Creation of social media profiles and public forum

As already reported in D9.4, CoE social media accounts were created to speak to various stakeholders in the following channels:

- **Facebook** - https://www.facebook.com/EMMECARE/
  Acting as a generalist channel, with a growing follower base, geared towards interested groups in academia and the science community, as well as industry and the wider public.

- **Twitter** - https://twitter.com/emmecare
  As, arguably, the prefered social media platform for the press, as well as a popular platfrom

amongst policymakers, and industry figureheads, twitter has a specific focus on these areas, alongside content geared towards the wider science community and the public.

- **LinkedIn** - https://www.linkedin.com/company/emme-care/
  As the professional social network, LinkedIn is leveraged by EMME-CARE to raise the CoE's profile in the professional community primarily for dissemniation and exploiation purposes, and to support recruitemnt.

- **Research Gate** - https://www.researchgate.net/project/EMME-CARE-Eastern-Mediterranean-Middle-East-Climate-Atmosphere-Research-Centre
  Dedicated to the science and academic community, relevant research networks and clusters that leverage the platform for dissemination purposes.

The CoE has employed a targeted social media content strategy, with specific focus on Facebook and Twitter to expand its reach in its target audiences. Content primarily focuses on news, events and accomplishments of the CoE and EMME-CARE Consortium as well as sharing and engaging with content from internationally reputable sources, such as United Nations Departments, the European Commission and others. The CoE also benefits from the active support of its partners and networks, in sharing and re-tweeting its content.

These efforts have culminated in a steady expansion of the CoE's online community, with **1,470 followers for CoE social media platforms and over 22,000 monthly impressions for content relevant to the CoE** (at the time of writing of this deliverable), which the CoE aims to continue to grow. Indicatively, at the time of writing (August 2021) the EMME-CARE twitter account has attracted **149 new followers** during the period reported in this deliverable, bringing the total follower count to **546 followers**, and marking a notable **38% increase in twitter followers since August 2020**. Similarly, the CoE's Facebook Page has gathered a sizeable support of **637 followers**, a **13% increase** since August 2020. These efforts on social media, in combination with the CoE's website and e-newsletter have thoroughly contributed to the continuous expansion of the CoE's public forum, in line with the commitments made by the CoE (GA 2.2.3).

Figures 4.1.1 & 4.1.2: Screenshots of CoE social media posts on Facebook (left) and Twitter (right)

4.2 Creation of giveaways, memorabilia and distribution of promotional material

In line with the goals set out in the Grant Agreement (2.2.3) and the CoE PDER plan (whose updates were outlined in detail in D9.2) for leveraging branding and communication approaches for maximizing the impact of EMME-CARE, the CoE has designed and produced a range of promotional materials, giveaways and memorabilia. These were outlined in details in D9.4, so this mention will not be duplicated here. The CoE continues to make good use of this material to promote the Center, including through creating "briefing packs" and giveaway mementos to delegations of formal visits to the CoE (e.g. by Departments of the Government of Cyprus), as well as ensuring wide distribution of such material in all formal meetings with external contacts, and in the context of other events hosted by the CoE as appropriate.

4.3 Outreach and Public Engagement Events

Over the period reported in this deliverable, the CoE has organized, actively participated and attended a number of outreach and public engagement events to enhance its visibility and impact.

These contributed to the growth of the public forum created with the EMME-CARE stakeholder community and the wider public at large, primarily through interaction in digital events (due to the pandemic) and in conversations taking place on social media platforms during, and following said events.

More information and selected highlights from outreach and public engagement events the CoE has organized or participated during the reporting period of this deliverable, are outlined below. The latest information about upcoming CoE events can be found on the dedicated webpage of the CoE website (https://emme-care.cyi.ac.cy/news) as well as at the Cyprus Institute's website (www.cyi.ac.cy).

European Researchers Night

Organized by the Research and Innovation Foundation (RIF), European Researchers' Night 2020 was organized virtually, due to the pandemic on Friday, 27th of November 2020.

The European Researchers' Night, funded under the Marie Skłodowska-Curie actions (MSCA), is a Europe-wide public event that brings researchers closer to the public. The Night provides researchers the opportunity to showcase the diversity of science and its impact on citizens' daily lives, and to stimulate interest in research careers – especially among young people. The events, held annually in 400+ cities in Europe and beyond, highlight how researchers contribute to our society by displaying their work in an interactive and engaging forum.

The central theme for Researchers' Night 2020 was "Green and Smart Cities" promoting biodiversity, climate, health, wellness and air quality, as well as social cohesion and sustainable development, while also encompassing activities from all scientific fields, in line with the event's motto "Science is for all".

CARE-C participated with a dedicated booth in the Exhibition Hall with the title "Science in the Green Zone" and the participation of 18 researchers from across the Center. Visitors were able to find out more about how climate and atmosphere research and innovation contribute to the protection of the Cyprus environment and help CyI researchers and scientists build "green" and smart cities. Visitors also had the opportunity to see the drones developed at the Unmanned Systems Research Laboratory (USRL) in action and learn more about the smart technologies that are being developed at CARE-C. Finally, visitors were able to see experiments that, through the use of everyday objects and scientific

instruments, showcase natural phenomena relevant to research activities, as well as to discover climate models developed by CARE-C researchers that demonstrate why and how, our cities need to change for a “greener” and safer future.

Visitors were also able to ask questions and interact with CARE-C researchers via live chat, that was available throughout the day. The participation of CARE-C was made possible through the contributions of Prof. Jean Sciare, Director of Climate and Atmosphere Research Centre (CARE-C), Prof. Jos Lelieveld, Associate Professor George Biskos, Associate Professor Panos Hadjinicolaou, Managing Coordinator Yiannis Proestos, Associate Research Scientist in Regional Climate Change Modelling George Zittis, Associate / Post-Doctoral Fellow Spyros Bezentakos, Associate Research Scientist Anne Maisser, Research and Development Scientist Christos Keleshis, Electrical/Electronic Engineer for Unmanned Aerial Systems (UAS) Panayiota Antoniou, Associate Research Scientist in Experimental Atmospheric Sciences Michalis Pikridas, Technical Research Specialist in Atmospheric Sciences Maximilien Desservettaz, Research Assistant in Air Quality Instrumentation Marinos Costi, Research Assistant in Aerosol Science and Technology Roubina Papaconstantinou, Nanotechnology Research Laboratory Technician Kleanthis Erotokritou, Post-Doctoral Research Fellow Katiana Constantinidou, PhD Student Athanasios Ntoumos, PhD Student Anna Tzyrkalli, and Intern Nikoleta Lekaki.

Figures 4.3.1 & 4.3.2: CARE-C at European Researchers Night 2020. On the right, CARE-C researchers participating virtually, on the left the CARE-C virtual exhibition booth.

Virtual sCYence Fair

Following the postponement of the 2020 sCYence Fair due to the exceptional circumstances of the COVID-19 pandemic, The Cyprus Institute organized the 2021 Virtual sCYence Fair on 19-20 April 2021. The event was under the auspices of the Minister of Education, Culture, Youth and Sports, the Deputy Minister of Research, Innovation, and Digital Policy of the Republic of Cyprus, the Chief Scientist for Research & Innovation of the Republic of Cyprus, and the Mayor of Aglantzia.

The event provided an opportunity for young students to increase their awareness of the wonders of science, add to their knowledge, and broaden their scientific horizons. Participants had the opportunity to explore scientific and technological advancements in an entertaining, innovative and interactive manner.

The event was held virtually and was open to all school science groups, ages 9-18, from both the private and public sectors. Groups of students from Elementary, Gymnasiums and Lyceums were invited to

prepare and create their own videos with maximum duration 10 minutes each, presenting innovative ideas and scientific research, using technology. The submissions by Gymnasiums and Lyceums were evaluated both by voting on Social Media (50% of the total mark) and by The Cyprus Institute's evaluation committee (50% of the total mark). For elementary schools, due to age restrictions on social media, The Cyprus Institute's evaluation committee exclusively selected the best 3 videos. Students got the chance to demonstrate their scientific projects to the public and to the evaluation committee, to enter a contest for the best 3 presentations in each category, and to participate in online scientific-related quizzes. The event was an overwhelming success with a total of 99 teams participating (53 teams from Primary Schools, 22 teams from Gymnasiums and 24 teams from Lyceums).

CARE-C actively participated in shaping the programme and the activities of the sCYence Fair while also part of the evaluation committee grading and advising students on their submitted projects. Last but not least, CARE-C projects, research infrastructure and activities were highlighted through the 2-day event. This was done through various online demonstrations and a participatory session with students run as part of the "Antibodies to Misinformation" project operating as part of the CoE, which aims to tackle misinformation when it comes to climate science.

Figure 4.3.3: Snippet from the broadcast of the 2021 Virtual sCYence fair

Cyprus Launch of Horizon Europe

The Deputy Ministry of Research, Innovation and Digital Policy of the Republic of Cyprus organized the National Launch Event for Horizon Europe, which was held virtual on April 7, 2021.

The event, celebrating the official launch of the next Framework – Programme in Cyprus, brought together speakers from the European Commission (EC) and the national R&I ecosystem and included interventions by political and governmental officials with the aim of mobilizing the local research and entrepreneurial community for Horizon Europe and its articulation with national R&I initiatives.

In the context of the event, EMME-CARE project Coordinator and CARE-C Director Prof Jean Sciare, was invited to present EMME-CARE as a Horizon 2020 Teaming success story. We are honoured to have been part of this successful event, and we look forward to continuing to contribute to the R&I ecosystem through Horizon Europe.

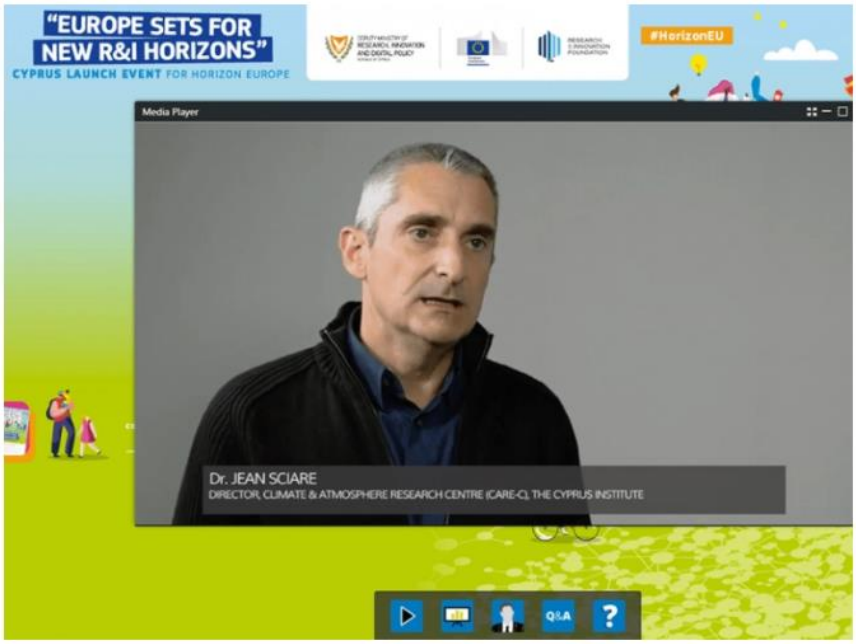


Figure 4.3.4: Screenshot of Prof Jean Sciare presenting EMME-CARE at the Cyprus Launch of Horizon Europe

The Cyprus Institute Graduate School Virtual Open Days

Figure 4.3.5: The virtual banner for the Open Day on Environmental Sciences Postgraduate Programmes led by the CoE

On June 17, 2021, a Virtual Open Day took place focused on the Postgraduate Programs of the CoE organized by the Cyprus Institute Graduate School. Specifically, during the session Program Coordinators and Program Instructors presented the MSc/MPhil in Environmental Sciences and the PhD in Energy, Environment and Atmospheric Sciences to groups of interested potential applicants that attended the virtual event. During the online session, Graduate School Staff also provided information on admissions & scholarship opportunities, while existing students were available to share their experiences. The session culminated with a Q&A session with interested applicants.

Science & Society – Climate Change

The Cyprus Institute (CyI) and the Cyprus Broadcasting Corporation (CyBC) have launched a TV series of discussions on issues that concern the scientific community and society at large. The TV show "Science and Society" («Επιστήμη και Κοινωνία») is conducted in Greek and is aimed at the general public. Distinguished academics analyse current issues through selected presentations and research findings, while giving comprehensive answers to important questions, in accessible

language. The discussions are moderated by Professor Costas N. Papanicolas and Natasa Kafkalia.

On Friday the 9th of October and Friday the 23rd of October 2020, a two-part special episode was featured on Climate Change, its impacts on Cyprus and the Eastern Mediterranean & Middle East region, and the mitigation and adaptation actions necessary to address the unfolding crisis. The discussions heavily featured the CoE and its work, and had amongst its interviewees researchers and professors affiliated with the CoE and EMME-CARE including Panos Hadjinicolaou, Associate Professor at CARE-C, and Prof Costas Cartalis, Professor of Environmental and Climate Physics at National and Kapodistrian University of Athens and member of the EMME-CARE Regional Professorship Programme.

Figure 4.3.6: Snippets from Science & Society – Climate Change

4.4 CoE Website Upgrade and scoping of web and mobile-app creation

As outlined in the Grant Agreement (2.2.3) and further elaborated in D9.2 and D9.4 the CoE will develop an application, as part of its communication, outreach and public engagement efforts that will include the display of real-time weather and air quality monitoring data and forecasting products for Cyprus and the EMME region. As outlined in section 2, steps have been taken to enable real-time data monitoring display – including visualizations of instrument measurements. A relevant "Data" section has been created in the EMME-CARE website with the associated high-level menu item, to be populated with real-time data monitoring visualizations from the CoE as a pre-cursor to the full-blown application.

4.5 Implementation of boost project on science training for journalists (Boost Change).

The Boost Change project has been currently restructured and postponed to be completed at a later stage. Some of the activities, particularly relating to public engagement, will be realised in a different modality in the framework of and as a follow up to the 2nd International Conference "Climate Change in the Eastern Mediterranean and the Middle East", due to take place on the 13 & 14 October 2021, in a hybrid format – online and in Cyprus. It has also been foreseen, that to maximize the impact of the Boost Project, its activities should link up to the outcomes of the Conference that are expected to be of high significance for addressing climate change in the EMME region.

As already outlined in the context of the First EMME-CARE Annual Project Review process, the above mitigating shift in timeline and activities has been necessitated by the redirection of funds within the Government budgeted funds for the project supporting operational needs of the CoE and by the decrease in the central CyI Budget for 2021.

4.6 Establishment and continued function of permanent exhibition halls

As outlined in the Grant Agreement (2.2.3.), the CoE will be creating a permanent exhibition area in the new building of the CoE Headquarters in Nicosia (Athalassa). The exhibition will display the latest innovation, products and services of the CoE, including lively multi-media content illustrating its scientific excellence, as well as accessible education material for school visits and the wider public.

Due to unforeseen circumstances and obstacles the new building planned to house the CARE-C Headquarters in Nicosia is not projected to be ready by M24 (expected by M52). Meanwhile, and to keep as much as practically feasible in line with its commitments, the CoE has planned the launch within 2021 of an interim exhibition area, appropriately situated in its current premises and specifically, at the Ground Floor of the Novel Technologies Building (NTL) in its Athalassa Campus.

During the reporting period, under the guidance of the CoE Director, the Communications & Outreach Office has coordinated an effort for gathering exhibit ideas from the CoE's different departments and infrastructure groups, and has consolidated them to a collection that portrays the breadth of activity conducted by the CoE.

Accordingly, the Exhibition Hall has been designed to include the following:

- Display of EMME-CARE video
- Display of CoE Research Infrastructure videos
- Display of drones, miniaturized sensors and other instruments either created or used by the CoE
- Displays of climate models and other data visualizations from the CoE's Environmental Predictions Departments
- Where feasible, digital demonstrations of instrument measurements or practical applications in climate and atmosphere research

A floor plan and flow for the Exhibition Hall has been designed with the support of the Cyprus Institute's Infrastructure and Facilities Department, which has provided general guidance from an architectural and spatial design perspective. Relevant works have been commissioned to adjust the layout of the NTL Ground Floor to meet the requirements of the Exhibition Hall floor plan, and relevant equipment ordered to facilitate the creation of the digital (display screens) and physical displays (display cases and cabinets).

4.7 CoE Press Coverage

As part of its communication, outreach and public engagement activities, the CoE plans for targeted, and timely press releases, features in articles and news items as well as public appearances leading to coverage by the traditional print and broadcast media (incl. articles in newspapers and magazines, and features on radio or TV) to maximize its visibility and impact.

During the reporting period of this deliverable, EMME-CARE has had **over one-hundred and thirty (130) press mentions,** including interviews and dedicated features**,** in various digital and print outlets in at least **seven (7) different countries**.

Indicatively, below are highlights from the press coverage the CoE has received during the reporting period of this deliverable. A constantly updated comprehensive list of the press mentions of the CoE can be found on the News & Events page of its website (https://emme-care.cyi.ac.cy/news/).

Press Highlights

- 14 August 2021 – Cyprus and the wider area are a climate change hotspot. Interview article with CARE-C researchers, in response to the heatwaves and forest fires Cyprus has been experiencing in summer 2021.

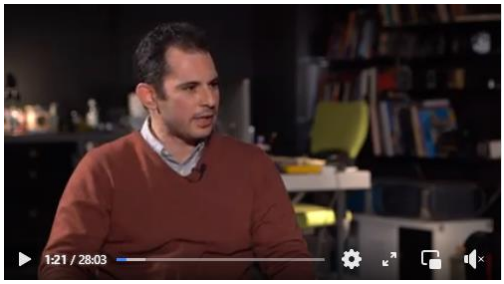
- 2 June 2021 - Pollution from Europe's Coal Plants Responsible for 'up to 34,000 Deaths Each Year', press coverage on publication with lead author CARE-C's Dr Jonilda Kunshta. International coverage, including in the UK's The Independent

- 28 April & 29 March 2021 - Middle East and North Africa: Heatwaves of up to 56 degrees Celsius without Climate Action; extreme temperatures, heat stress and forced migration. Coverage of publication with lead author CARE-C's Dr George Zittis that was published in npj Climate and Atmospheric Sciences. Multiple international press mentions and interviews. Released in collaboration with MPG.

CARE-C Associate Research Scientist George Zittis on Climate Change - ALPHA TV 29-03-2021

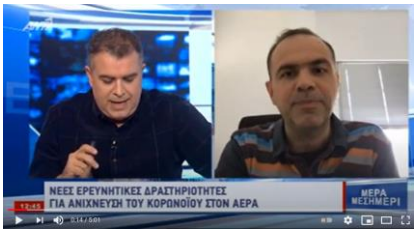
- 11 March 2021 - QEERI and CARE-C Establish Research Collaboration to Strengthen Environmental Hazard Risk Assessment in the Middle East. Press release published in collaboration with QEERI and featured in Cyprus and Qatar press outlets.

- 22 February 2021 – CARE-C's Assistant Professor Theodoros Christoudias gave an interview at Digital TV in "Agenda" TV show on the Akkuyu Nuclear Power Plant and its Dangers



- 16 January 2021 – CyBC environmental TV show "*Spiti sti fysi*" aired a 30-mins long episode dedicated to EMME-CARE and our work on climate and atmosphere research. Several members of the CoE were interviewed presenting the work being done by the Center and the Consortium to address climate change and air pollution in the Eastern Mediterranean & Middle East region.

- 6 November 2020 - CARE-C's Associate Professor George Biskos interviewed on ANT1 TV news on the new methods for detecting the presence of coronavirus in the air that are being developed by CoE researhcers



- 27 October 2020 - New Study Co-authored by CARE-C and MPG Prof. Jos Lelieveld estimates exposure to air pollution increases COVID-19 deaths by 15% worldwide. Press release published in collaboration with MPG in the frameowrk of EMME-CARE attracting international attention.

Press Coverage Documentation

A continuously updated list of the CoE's press coverage is publicly accessible at any time on the CoE's website (https://emme-care.cyi.ac.cy/news/ - In the Press). Hosting this information on the website as a digital, publicly accessible archive has been selected as it not only ensures the relevance of the information provided but also offers an online resource for journalists, the media or other interested parties to easily access information about the CoE, hence helping to promote the expansion of its visibility and reach.

5. Contribution of EMME-CARE Advanced Partners to PDER, Communication, Outreach & Public Engagement Activities

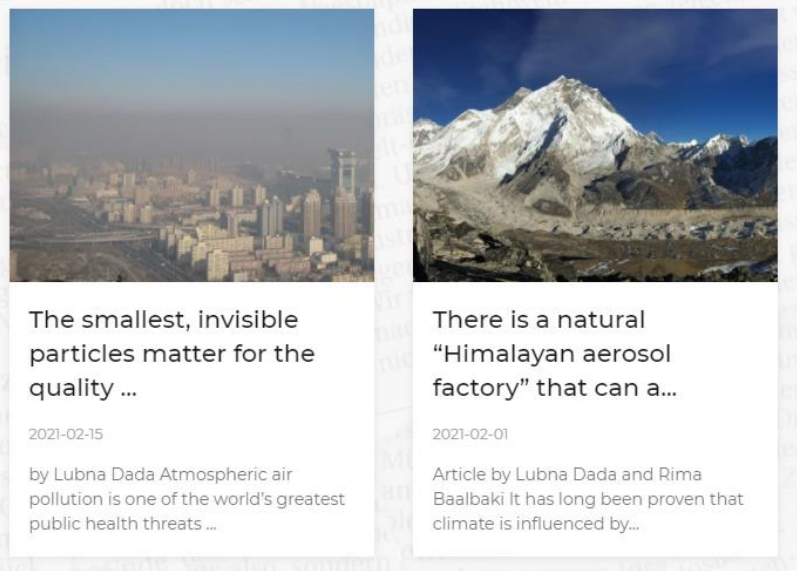
To support the contribution of EMME-CARE Advanced Partners to PDER, Communication, Outreach & Public Engagement Activities, the CoE coordinated the definition and appointment of communication contact points for each of its Advanced Partners.

The CoE is ensuring the continuous, regular and close collaboration with Advanced Partners in matters of communication, through organizing regular catch-up, planning and coordination meetings with contact points.

An indicative record of some of the activities that have been undertaken by Advanced Partners is outlined below.

University of Helsinki

- News items for the EMME-CARE website and e-newsletter
  - 15 February 2021 - The smallest, invisible particles matter for the quality of the air we breathe: findings from parallel studies in Beijing by Lubna Dada https://emme-care.cyi.ac.cy/the-smallest-invisible-particles-matter-for-the-quality-of-the-air-we-breathe-findings-from-parallel-studies-in-beijing/
  - 1 February 2021 – There is a natural “Himalayan aerosol factory” that can affect climate by Lubna Dada and Rima Baalbaki https://emme-care.cyi.ac.cy/there-is-a-natural-himalayan-aerosol-factory-that-can-affect-climate/



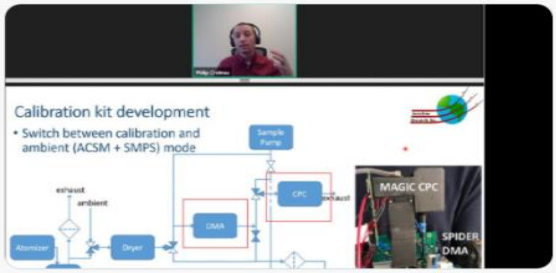
- Advertising, participating and communicating the “Innovation in atmospheric science workshop” The workshop took place virtually on May 18, 2021. UH team actively engaged in advertising for this workshop through direct email invites within its network, through the INAR newsletter and on the ACCC and INAR websites. In addition, the workshop was promoted on twitter. The tweets from only one person from UH earned around 7.1K impressions. Screenshots from the online activities are shown below.

Rima Baalbaki @BaalbakiRima · May 18
Does the inversion of data from PSD measuring instruments puzzle you? Check out the new method developed by @NpfPanda to be presented at the **#InnovAtmo21** workshop. This method will improve our understanding of new particle formation and many other aerosol dynamics.

PEEX_HQ @PEEX_News · May 18
.@HannaLappalai2 is presenting the value of @GlobalSMEAR type stations to collect environmental big data needed to solve challenges like the SDGs, and the work of the new Finnish Flagship @ACCC_FS at the **#InnovAtmo21** workshop.

#EUGreenWeek #SDG

Rima Baalbaki @BaalbakiRima · May 18
@AerodyneRes uses the 'spider DMA' developed at @CaltechCCE and the 'magic CPC' of 'Aerosol Dynamics' to calibrate their ACSMs. What a nice example of how innovations from different groups contribute to developing new systems!
#InnovAtmo21
@EMMECARE
@ACTRISRI

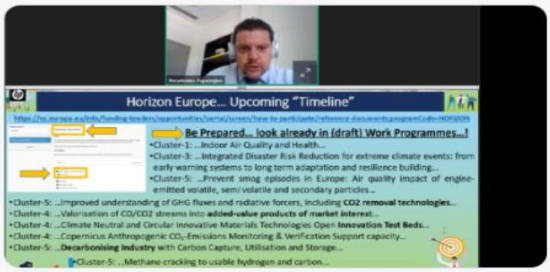


INAR Retweeted

EMME-CARE @EMMECARE · Apr 5
Save the date - 18 May Virtual Workshop on Innovation in Atmospheric Sciences for the latest in the sector and unique networking opportunities.
Registrations & abstract submission: buff.ly/3wB2gCz
Hosted by us & @ACTRISRI with organizers @CyprusInstitute @INAR_fin

INAR Retweeted

Rima Baalbaki @BaalbakiRima · May 18
Great tips and insights from @ppapazog at the #InnovAtmo21 on how to prepare early for the EU's research and innovation funding programme of 2021-2027!



Institute for Atmospheric and Earth System Research - UHel
INAR Newsletter Nr.78. 23.Apr.2021

View this email in your browser

INAR Newsletter

Bite-sized news across INAR - UHel

Share recent publications, upcoming seminars/courses, group news, or say hi if you're new!

HEADLINES:
Horizon Europe info session, 22.Apr by Research Funding Services. See Flamma.
Open Science Spring Conference 2021: 4-5.May, by Cooridnaton of Open Science, Uni Oulu. Read more.
Virtual workshop on Innovation in Atmospheric Sciences, on 18.May. Register here.
ERC Advanced grant 2021: Call opens on 20.May. Read more.

JOB POSTS:
PhD: at Faculty of Science and Forestry, University of Eastern Finland, Apply by 05.May.
Postdoc: Ecosystem-Atmosphere Interactions, Uni Copenhagen. Apply by 02.May.
Postdoc: role of soil biodiversity in forest resilience, Basque Centre for Climate Change. Apply by 05.May.
Professor: Micrometeorology and land-atmos exchange, Uni Copenhagen. Apply by 09.May here.
Researh Assoc.: initial-value problem for global weather forecasting. Uni Hamburg. Apply by 14.May here.
PostDoc: eddy coverience flux data analysis, MPI.Biogeochemistry, Apply by 31.May to personal(a)bgc-jena.mpg.de

CEA

- Promotion of EMME-CARE events and recruitment opportunities through social media and other digital means. Indicative examples included below.

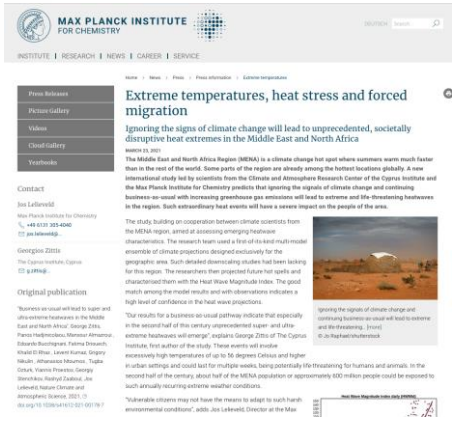
MPG

- Jointly released press releases further promoted through social media.
  News release distribution via providers: EurekAlert, idw, Max Planck Newsletter and MPG E-Mail distribution list to approx. 15.000 contacts
  MPG Facebook (c.1170 followers) + Instagram Posts (c.1900 followers)

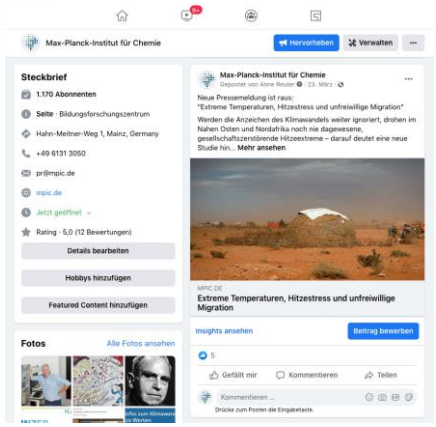
- MPG Newsletter Article, shared with c. 380 recipients and included on the EMME-CARE website

Indicative screenshots from the above activities below.

March 23, 2021 - Extreme temperatures, heat stress and forced migration, Ignoring the signs of climate change will lead to unprecedented, societally disruptive heat extremes in the Middle East and North Africa



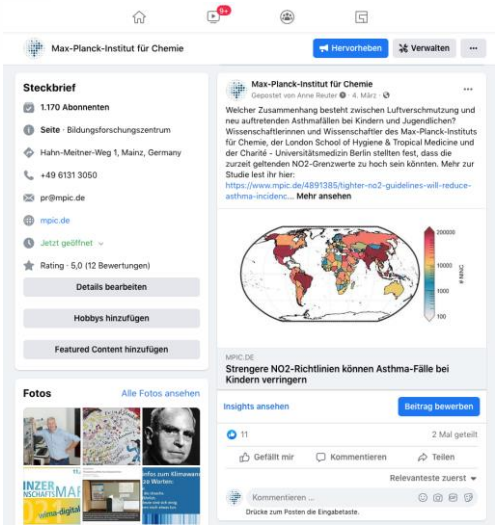
Screenshot press release on MPG website



Screenshot Facebook Post

February 24, 2021 - Tighter NO2 guidelines will reduce asthma incidence among children, New study suggests that revisiting the annual air pollution guideline for nitrogen dioxide is necessary

Screenshot press release on MPG website



Screenshot Facebook Post

MPG Newsletter Article, Visualization of smog in the Arabian Basin

(Quelle: EMME CARE Newsletter/Überarbeitung AR)

Die Kampagne „Air Quality and Climate Change in the Arabian Basin" (AQABA) war eine im Jahr 2017 organisierte Schiffskampagne des Max-Planck-Instituts für Chemie (Mainz) in Zusammenarbeit mit dem Cyprus Institute (Nikosia) und anderen Universitäten und Forschungszentren weltweit. Ein aktuelles Video zeigt eine Simulation der atmosphärischen Chemie und Aerosole über dem Nahen Osten während der AQABA-Kampagne. Die Animation verdeutlicht die drei wichtigsten Aerosole in der Region: Staub, Sulfat und organische: https://www.youtube.com/watch?v=KF12n3gJxjU
Programmiert wurde die Visualisierung von Sergey Osipov (Gruppe Pozzer) am MPI für Chemie.

The Air Quality and Climate Change in the Arabian Basin (AQABA) campaign was a shipborne campaign in 2017 organized by Max Planck Institute for Chemistry in Mainz in collaboration with the Cyprus Institute and other universities and research centers worldwide. An interesting video shows a simulation of the atmospheric chemistry and aerosols over the Middle East during the AQABA campaign: https://www.youtube.com/watch?v=KF12n3gJxjU

The visualization was done by Sergey Osipov (Pozzer group) at the MPI for Chemistry. The volume rendering shows three major aerosols in the region: dust, sulfate, and organics.

6. Key Performance Indicators

In order to measure the effectiveness and impact of the CoE's planned communication, dissemination and exploitation activities, Key Performance Indicators (KPIs) are set, monitored and reviewed.

Overarching metrics

In order to measure the effectiveness of PDER and outreach and publication engagement activities the following KPIs list has been compiled based on the Grant Agreement (section 2.1.2), as part of the continuous evaluation and progress updates of the System for Grant Management of the European Commission (SyGMA) and the measureable objectives outlined in D9.2. It should be noted that 2019 figures have been added for reference purposes.

To avoid confusion between reporting periods (EMME-CARE annual evaluations vs the reporting period of this deliverable), 2021 figures will be reported for the entirety of the year (Jan – Dec 2021) in the context of EMME-CARE's Second Reporting and Review Period report.

Dimension	Key Performance Indicator	2019 (for reference)	2020	Objective 2026
Effectiveness	Scientific publications (per year)	59	74	200
	% scientific publications in TOP-25% impact factor journals of the field (per year)	56% [33]	56% [41]	>75%
	% scientific publications in TOP-10 journals of the field (per year)	47% [28]	38% [28]	>60%
	% scientific publications in TOP-5% impact factor journals of the field (per year)	5% [3]	12% [9]	[8]
	EMME-CARE Citation Index	[-]		
	Plenary/ Invited talks at international conferences	1	5	15
	International conference presentations and workshops	30	56	100
Outcome	Number of CoE public events (per year)	10	5	15
	Estimated number of CoE press coverage (per year)	72	111	325
Efficiency	Number of following in CoE digital platforms (at end of year)	1061	1238	2500
	Estimated number of persons reached through events – including digital (per year)	1080	2940	4000

Network	Number of joint publications with regional partners	18	16	>40
	Number of joint publications with Advanced partners	21	40	>50
	Impact factor of joint publications with Advanced Partners	3	6.53	>4

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 856612 and the Cyprus Government

Annex

List of Conferences, Workshops and Trainings the CoE presented / participated in during the reporting period (M13 – M24)

Conferences:

1. Mobile measurement of carbon dioxide and methane emissions in Cyprus Yunsong Liu, Jean-Daniel Paris, Mihalis Vrekoussis, Panayiota Antoniou, Marios Argyrides, Christos Constantinides, Dylan Desbree, Neoclis Hadjigeorgiou, Christos Keleshis, Olivier Laurent, Andreas Leonidou, Carole Philippon, Panagiotis Vouterakos, Pierre-Yves Quehe, Philippe Bousquet, Jean Sciare , ICOS Science Conference 2020, 15-17 September 2020
2. Performance Evaluation of Partector 2 for use Onboard Unmanned Aerial Vehicles R. Papaconstantinou, S. Bezantakos, M. Fierz, G. Biskos, European Aerosol Conference, Aachen, Germany, September 2020
3. Miniature Sensors for Probing the Size and Concentration of Atmospheric Aerosol Particles, S. Bezantakos, R. Papaconstantinou, N. Hadjigeorgiou, K. Erotokritou, G. Biskos, European Aerosol Conference, Aachen, Germany, September 2020
4. Improved Performance of Differential Mobility Analyzers using 3D-printed Flow Straighteners, C. Loizides, M. Costi, N. Lekaki, S. Bezantakos, G. Biskos European, Aerosol Conference, Aachen, Germany, September 2020
5. Increasing the Throughput of Spark Discharge Nanoparticle Generators by using Small-Diameter Electrodes C. Loizides, A. Maisser, F. Schmidt-Ott, T. Pfieffer, A. Schmidt-Ott, G. Biskos European Aerosol Conference, Aachen, Germany, September 2020
6. Atomic Cluster Generation using Spark Ablation – Mass Spectrometer Analysis A. Maisser, K. Barmpounis, S. Holm, J. Kangaslouma, M. Attoui, A. Schmidt-Ott, G. Biskos, European Aerosol Conference, Aachen, Germany, September 2020
7. One year of TCCON observations in Cyprus: Data Variability and Validation/Calibration, Rousogenous C., Petri C., Warneke T., Quéhé P.Y., Laemmel Th., Ramonet M., Notholt J., Vrekoussis M., Sciare, J. (2020), OCO-2/OCO-3 Validation Group Meeting, October 2020, US (online)
8. Clmate Change and Impacts G. Zittis, CSP4Climate, 15 December 2020
9. Vector borne diseases, T. Christoudias, C3S Conference & General Assembly, 18 May 2021
10. GPU Optimizations for Atmospheric Chemical Kinetics, Theodoros Christoudias, Timo Kirfel, Astrid Kerkweg, Domenico Taraborrelli, Georges-Emmanuel Moulard, Erwan Raffin, Victor Azizi, Gijs van den Oord, Ben van Werkhoven, The International Conference on High Performance Computing in Asia-Pacific Region, 20 Jan 2021
11. Shared-Space Autoencoders with Randomized Skip Connections for Building Footprint Detection with Missing Views Giannis Ashiotis, James Oldfield, Charalambos Chrysostomou, Theodoros Christoudias, Mihalis A. Nicolaou, Pattern Recognition, ICPR International Workshops and Challenges, 21 Feb 2021
12. Assessment of the projected temperature extremes over the MENA region from CIMP5 scenario runs Athanasios Ntoumos, Panos Hadjinicolaou, George Zittis, Jos Lelieveld, EGU General Assembly 2021, 27 April 2021
13. Comprehensive Methodology for the Evaluation of High-Resolution WRF Multi-Physics Precipitation Simulations for Small, Topographically Complex Domains Sofokleous, I., Bruggeman, A., Michaelides, S., Hadjinicolaou, P., Zittis, G. Camera, C. EGU, General Assembly 2021, 27 April 2021
14. Varying horizontal resolution and land surface schemes in soil moisture – air temperature coupling, calculated with the WRF model for the MENA-CORDEX domain Katiana

Constantinidou, Panos Hadjinicolaou, George Zittis, and Jos Lelieveld, EGU General Assembly 2021, 27 April 2021

15. UTLS new particle formation with the NAN submodel, T. Christoudias, EMAC Symposium 2021, 31 May 2021
16. Climate change projections for the eastern Mediterranean and the Middle East based on CORDEX-CORE simulations., Zittis G., Hadjinicolaou P., Lelieveld J., EGU General Assembly 2021
17. TIN-Copula bias correction of climate modeled daily maximum temperature in the MENA region, G Lazoglou, G Zittis, P Hadjinicolaou, J Lelieveld, EGU General Assembly 2021
18. Portable and Cost-Effective Ultrafine and Coarse Particle Sizing Instruments, Anne Maisser, Spyros Bezantakos, Nikoleta Lekaki, Marinos Costi and George Biskos, Cambridge Particle Meeting, 25 June 2021
19. Comparison of modelled atmospheric radionuclides from the Fukushima Dai-ichi nuclear accident with CTBTO station measurements, T. Christoudias, CTBT Science and Technology Conference 2021 (SnT2021), 30 Jun 2021

Workshops:

1. Integration of instruments on the UAV-balloon system of the Cyprus Institute for ASKOS campaign, Kezoudi M., Keleshis C., Constantinides C., Desservettaz M., Unga F. and Sciare J., 18 January 2021
2. CLOUD Modelling Workshop, T. Christoudias, J. Lelieveld, 26 Apr 2021
3. Eastern Mediterranean and Middle East Climate Change Initiative 2nd Organizational Webinar, Marco Neira, 22 and 23 March 2021
4. Tackling the effects of climate change on health in the Mediterranean and surrounding regions, Marco Neira, 6 May 2021
5. Eastern Mediterranean and Middle East Climate Change Initiative 3nd Organizational Webinar, Marco Neira, 14 June 2021
6. Research & Innovation Funding Opportunities in Atmospheric Sciences, P. Papazoglou, Innovation in Atmospheric Sciences Virtual Workshop, 18 May 2021
7. A new mobile platform of ACTRIS for UAV-based atmospheric profiling, M. Kezoudi, C. Keleshis, M. Vrekoussis, and J. Sciare, Innovation in Atmospheric Sciences Virtual Workshop, 18 May 2021
8. Miniaturized Sensors for Probing Air Quality: Potential Applications and Methods for Assessing their Performance, S. Bezantakos, Innovation in Atmospheric Sciences Virtual Workshop, 18 May 2021

Training:

1. 11th ESA Training School on Earth Observation, 22-26 March, 2021, online
2. Online Training Course, Spreading Pollen: Scaling up community engagement for the protection of wild pollinators, 14-16 & 21-23 May, 2021, organized by YEE/JRC
3. Mapping and Monitoring Lakes and Reservoirs with Satellite Observations, 9, 16, & 23, February 2021, online, organized by ARSET, NASA
4. Using Google Earth Engine for Land Monitoring Applications, 16, 23, & 30, June 2021, online, organized by ARSET, NASA
5. MESSy / EMAC training course for beginners, 16 April 2021, online
6. Training on ebas flagging for aerosol instrumentation, 24-25 June, online, organized by NILU

Affiliation scheme with top European Experts to boost R&D capabilities

Affiliations per department:

- Environmental Observations
  - Prof N. Mihalopoulos, Greece
  - Prof A. Schmidt-Ott, TUDelft, the Netherlands
  - Prof M. Vrekoussis, University of Bremen, Germany
  - Associate Prof C. Afif, Saint-Joseph University of Beirut, Lebanon
  - Prof J. Williams, MPG, Germany
  - Research Scientist R. Sarda – Esteve, CEA, France
  - Research Scientist, J. D. Paris, CEA, France
- Environmental Predictions
  - Prof J. Lelieveld, MPG, Germany
  - Prof S. Michaelides, Cyprus Department of Meteorology, Cyprus
  - Senior Researcher F. Tymvios, Cyprus Department of Meteorology, Cyprus
  - Senior Researcher, D Charalambous, Cyprus Department of Meteorology, Cyprus
- Impacts & Policy
  - Prof C Cartalis, National and Kapodistrian University of Athens, Greece
  - Research Scientist A. Martinou, Cyprus
- Innovation
  - Prof. V. Serghides, Frederick University, Cyprus
  - Research Scientist G. Mocnik, University of Nova Gorica, Slovenia
  - Research Scientist, Koutras, ADITESS, Cyprus

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 856612 and the Cyprus Government