

# LIFE MEDEA NEWSLETTER



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## We want to hear from you

We value the opinion of our readers and we are looking forward to receive your feedback about this newsletter.

Please send us a personal email with your suggestions or comments to the following address:

Attn: Paraskevi Kinni  
info-cy@life-medea.eu



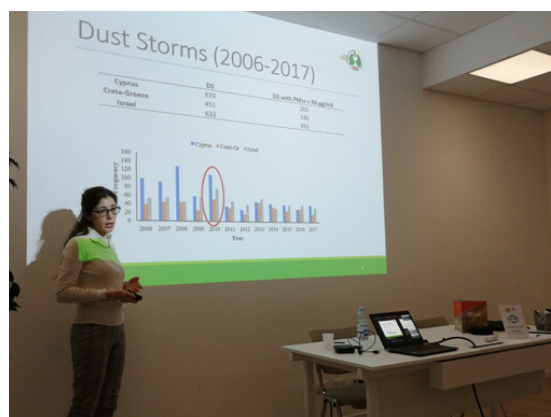
The LIFE16 CCA/CY/000041 MEDEA project is co-financed by EU within the framework of LIFE program



## LIFE MEDEA participates in the 2nd InDust workshop on dust exposure events and associated Health Effects

The 2nd inDust (International Network to Encourage the Use of Monitoring and Forecasting Dust Products) COST meeting on Dust Exposure Events and Products and Health Effects took place on the 24th February in Rome, Italy. A multidisciplinary group of European experts on aerosol measurements, regional aerosol modelling, epidemiologists and WHO representatives presented their work. The workshop focused on forecasting and monitoring tools that can be used in health assessment studies focusing on desert dust events.

Two members of LIFE MEDEA project, Dr Souzana Achilleos and Dr Panayiotis Kouis participated in this workshop and had the opportunity to present the MEDEA project and its preliminary results. The participation in this COST meeting aimed to facilitate the dissemination of early project results and facilitate the replication and transfer of the LIFE MEDEA exposure reduction guidelines across other EU member states.





## Message from the Project Coordinator

*Welcome to the 5th edition of the LIFE MEDEA newsletter.*

*This edition describes the difficulties our project faced during the first months of 2020 that were characterised by the COVID-19 pandemic and the enforcement of public health measures by national governments in LIFE MEDEA participating countries. These difficulties led to modifications of our work-plan and timeline in an effort to not jeopardise the successful implementation of the project.*

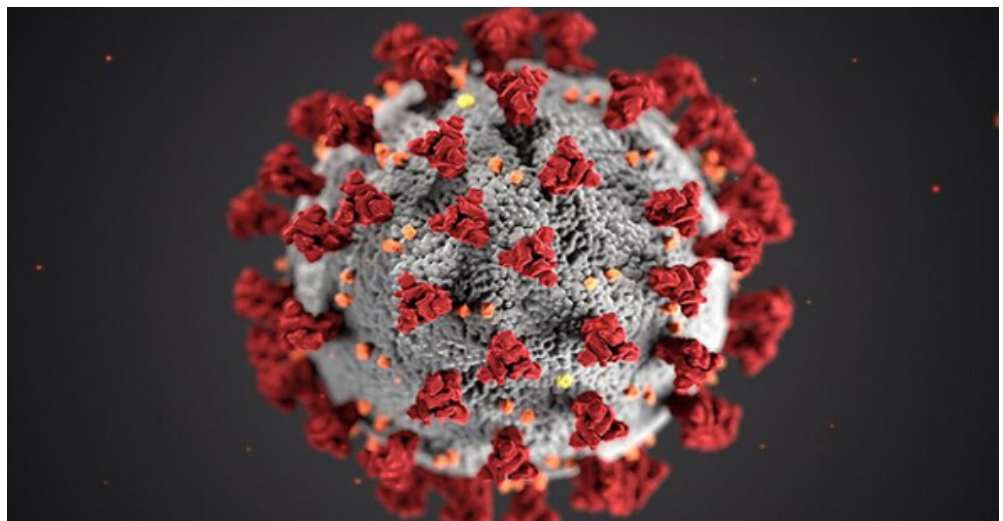
*The current edition also features the dissemination activities that members of the LIFE MEDEA project participated in between January and June 2020. These include the inDust meeting on air quality products and early warning systems for Desert dust storms in Malta as well as the inDust meeting on Dust exposure events and products and health effects in Italy. Additionally, our participation in the 12th International Conference on Air Quality and Science is also highlighted.*

*We hope that you will enjoy reading this edition.*

*Professor  
Panayiotis Yiallourous,  
Coordinator of LIFE MEDEA*

## COVID-19 and the impact on LIFE MEDEA

In December 2019, a novel strain of human coronavirus was found to be the cause of a cluster of severe pneumonia cases with high fatality rates in Wuhan, China. The World Health Organization (WHO) designated the virus severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and the disease coronavirus disease 2019 (COVID-19). On 11 March 2020, WHO declared the COVID-19 as a pandemic. Israel, Greece and Cyprus confirmed their first COVID-19 cases on February 21st, 26th and March 9th respectively. In all three countries, the increasing numbers of cases in the following days led national health authorities to enforce escalated levels of public health interventions, including social-distancing measures and schools' closure as well as the implementation of mobility restrictions for all citizens. Particular emphasis was placed in the implementation of these measures by susceptible population groups, including people with chronic cardiovascular and respiratory diseases. MEDEA participants, asthmatic children and atrial fibrillation (AF) patients, are included in the susceptible groups for COVID-19.



The LIFE-MEDEA asthma panel study was inevitably affected by the public health interventions as schools were closed and all extracurricular activities were suspended. In the same time, hospitals in all three countries offer only restricted access to patients and thus limited our ability to invite AF patients for arrhythmia monitoring for the purposes of the AF panel study. Towards mitigating the negative impact of this situation to project outputs, MEDEA personnel continued patient monitoring to the best possible degree through telephone interviews and remote data collection from wearable devices and air particulate sensors.



## Asthma panel study

The 2nd year of the Asthma panel study was launched in Cyprus and Greece in early February according to schedule. A total of 64 asthmatic children in Cyprus and 71 in Greece were enrolled in the study and received training on LIFE MEDEA guidelines and the use of wearable devices. In total, 20 primary schools (both public and private) took part in the study and more than 300 teachers in both countries received relevant training by MEDEA personnel. During the baseline visit, apart from providing training to children and parents, MEDEA personnel assessed lung function, airway inflammation and medical history of the participants. Due to the COVID-19 pandemic, on-site school visits for repeat assessments of lung function and airway inflammation were not possible. Nevertheless, the assessment of asthma symptoms through the Asthma Control Test (ACT), which constitutes the primary endpoint for the study, was carried out via telephone interviews as originally planned and was not affected by the pandemic.



## Atrial Fibrillation panel study

The 2nd year of the Atrial Fibrillation (AF) panel study was initiated in Fall 2019 and continued in Spring 2020. By March 2020 a total of 45 AF patients took part in the study in Cyprus and Greece. These patients received training during their routine hospital visit in February and baseline measurements of arrhythmia episodes were carried out via pacemaker interrogation. Following the enforcement of public health interventions in both countries as a result of the COVID-19 pandemic, AF patients had to stay at home and were restricted from visiting the hospital with the exception for emergency reasons. Following the relaxation of public health interventions in both countries, patients were invited to the hospital in May and June 2020 and repeat measurements of arrhythmia episodes were carried out in order to assess the AF burden during the follow-up period. In the meantime, assessment of symptoms, quality of life and medication use was assessed using the AFEQT questionnaire via telephone interview. The 2nd year of the AF panel study has been completed on June 21st. All participating patients will be re-invited to participate in the study for the period Fall 2020 and Spring 2021.

# LIFE-MEDEA outreach and participation in events



## **12th International Conference, Air Quality Science and Application, Online Conference 2020**

Dr Souzana Achilleos, post doctoral associate at the Cyprus University of Technology participated in the 12th International Conference on Air Quality Science and Application that was carried out online as a result of the spread of COVID-19. The conference offered the opportunity for international dissemination of the latest research on air quality science and attracted participants from the air quality and climate change sector as well as health professionals and a host of other stakeholders.

## **inDust workshop on Air Quality Products, 4&5 February 2020, St. Julians, Malta**

Dr Chrysanthos Savvides, Head of Air Quality Sector of the Department of Labor Inspection in Cyprus and collaborator of the LIFE MEDEA project, participated in the international workshop on "Desert Dust impacts on Air Quality in Europe: co designing an early warning system with and for the users" that was held in Malta in February. During the workshop, Dr Savvides gave a thorough presentation on the early warning system that is currently established in Cyprus and described the set-up of the LIFE MEDEA early warning system for desert dust storm events. The meeting allowed for an open dialogue between representatives of air quality agencies from all over Europe. The representatives were able to share suggestions on possible early warning system prototypes that could be applicable for different EU countries.

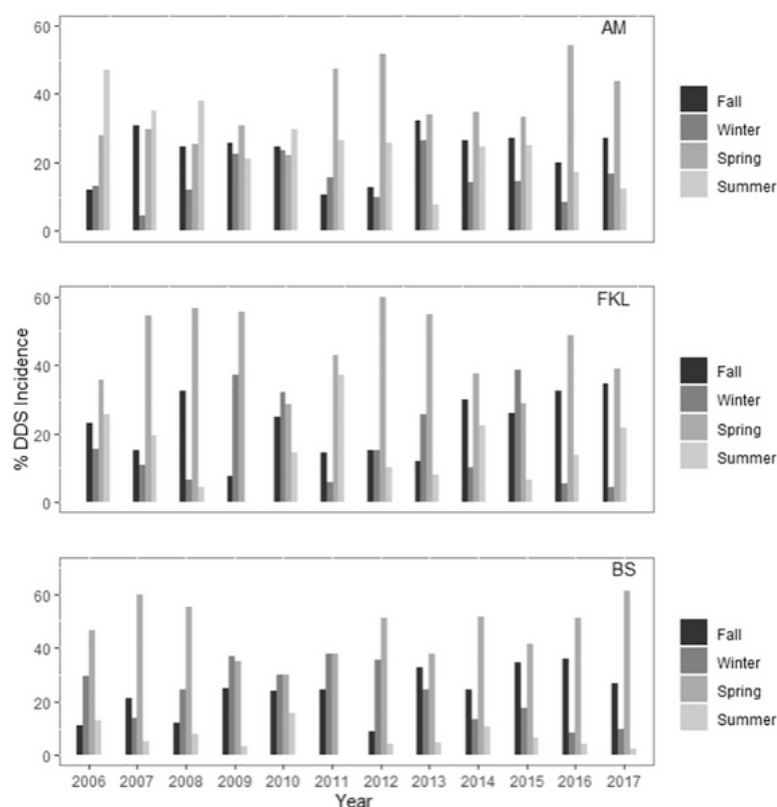




# LIFE-MEDEA Scientific Publications

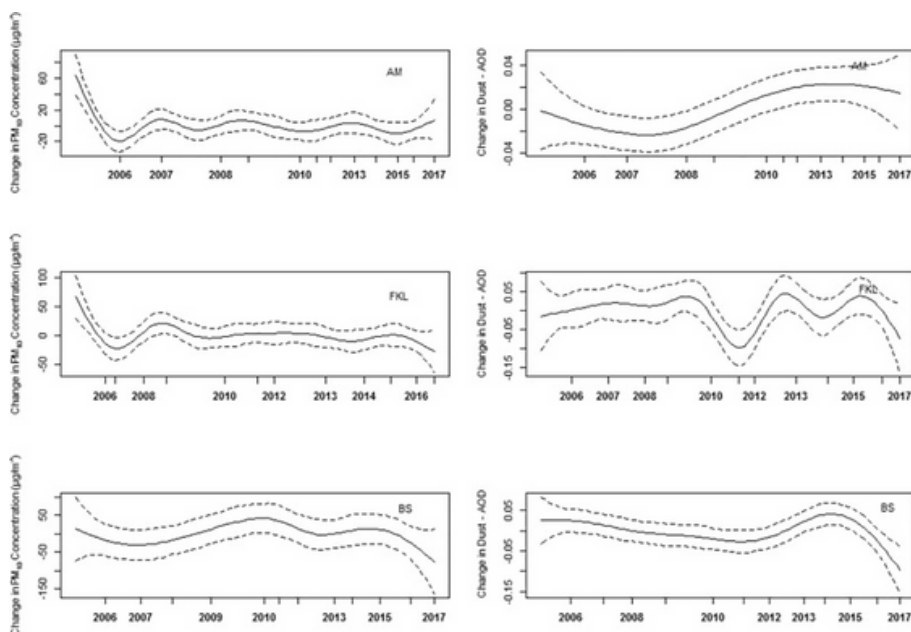
## Spatio-temporal variability of desert dust storms in Eastern Mediterranean (Crete, Cyprus, Israel) between 2006 and 2017 using a uniform methodology

During the implementation of LIFE MEDEA preparatory actions, project scientists and environmental exposure experts, compiled a detailed dataset of ground level particulate matter (PM) measurements and satellite observations (Aerosol Optical Depth-AOD) from Crete, Cyprus and Israel. The dataset included observations from a period spanning more than 10 years and using a uniform methodology for the first time, the LIFE MEDEA scientists were able to accurately identify DDS events and evaluate temporal and spatial trends.



**Figure on top:** Annual incidence of Desert Dust Storms (%) per season and year at the three sites.

**Figure to the right:** Time trends of Desert Dust Storms-PM<sub>10</sub> and Desert Dust Storms-Aerosol Optical Depth for Aya Marina-Cyprus (AM), Finokalia-Crete (FKL), and Beer Sheva-Israel (BS) stations. Dashed lines represent the 95% confidence intervals for the estimate, and marks on x-axis represent the end of the year.



The report was published on April in the Science of the Total Environment journal on 20th of April 2020. Main findings included the observation that desert dust events were **more frequently observed in Cyprus although Israel experienced events of higher intensity**. All three areas were at times simultaneously affected by DDS, and this occurred for 10–20% of the DDS at each site. Israel and Cyprus had more common DDS as they are both influenced from **North Africa and Arabian Peninsula deserts; Crete is rarely impacted by deserts from the East**. Inter-annual variability of DDS frequency and intensity followed a **relatively steady trend**. In Israel and Cyprus though, **the year with the highest DDS frequency and intensity was the year with the lowest precipitation**.

Full text research article at [here](#)

# LIFE MEDEA Webinar

Towards further expanding the LIFE MEDEA dissemination activities, the Medical School of University of Crete (UOC) organized the timely webinar titled "Climate change and health. Desert dust and pandemic" on Wednesday 17th June 2020. The webinar was multidisciplinary in nature and the audience was comprised of students, scientists, experts, government officials and other environmental, health or educational professionals from Cyprus and Greece. In total, more than 100 participants joined the webinar.

**To lockdown έκανε καλό στο κλίμα, ερώτημα η συνέχεια**

Επιτεύχθηκαν μειώσεις ανάλογες με τους στόχους που πρέπει να πετύχουμε για να κρατηθεί η αύξηση της θερμοκρασίας κάτω των 1,5-2 βαθμούς. Το εμπόδιο είναι βέβαια εάν αυτές οι θετικές τάσεις θα μεταφραστούν σε συστηματικές πολιτικές παρεμβάσεις.

ΜΕΙΩΣΗ ΕΚΠΟΜΠΩΝ ΑΕΡΙΩΝ ΤΟΥ ΘΕΡΜΟΚΗΠΙΟΥ ΤΗΝ ΠΕΡΙΟΔΟ ΤΗΣ ΚΑΡΑΝΤΙΝΑΣ

**Ελλάδα**

ΑΘΗΝΑ εκπομπές	Μεθάνιο	ΦΘΙΝΟΚΑΛΑ ΚΡΗΤΗΣ (στοιβάς υποβόθρου)
-43%	-8%	+0,5%

**Σε παγκόσμιο επίπεδο**

Μείωση εκπομπών τριτογενούς Ιανουαρίου - Μαρτίου 2020	Συμμετοχή στη μείωση:
-8%	50% μεταφορές (κυρίως Ι.Κ.)
	20% -25% βιομηχανία
	20% παραγωγή ενέργειας
	Εκτίμηση για μείωση εκπομπών το 2020: -4% έως -6%

1 δόλ. τόνου CO<sub>2</sub> λιγότερα το τρίμηνο (όσο εκπέμπει η Γαλλία σε ένα χρόνο)

Καθημερινή 7/6

The 2nd session was primarily focused on the most recent results of the LIFE MEDEA panel studies as these were presented by Dr Kalivitis (focusing on the the spatio-temporal variability of desert dust storms in Eastern Mediterranean and Prof Dimitriou who presented the survey results on the perceptions and current practices of social stakeholders and regulatory authorities in the region. The webinar was concluded with talks by Dr Anastasiou and Dr Michaelidou who provided updates on the progress of the LIFE MEDEA Atrial Fibrillation and Asthma panel studies respectively.

Overall, the webinar was engaging and feedback from the participants was very positive. As a result, some of the future LIFE MEDEA meetings and dissemination activities may also employ this webinar format.



The webinar was hosted by Prof Galanakis and Prof Dimitriou of UOC and first speakers included Prof Galanakis who talked about the interrelation of air pollution measurements and COVID-19 cases, Prof Michalopoulos who presented data on the effect of lockdown measures on air pollution levels and Prof Vergadi who described the association of desert dust with several infectious diseases. The 1st session of the webinar was completed with the presentation of LIFE MEDEA project design by Prof Perdikiogianni.

**Λοιμώξεις, σκόνη και πανδημία - ίσως**

**Παθογόνα που μεταφέρονται με σκόνη :**

- γρίπη (και H5N1)
- RSV - αναπνευστικός συγκυτιακός ιός
- Διαβό (πιο πολύ με ↑ θερμοκρασία, ↑ ταχύτητα ανέμου, ↑ υγρασία)

Chen PS, et al. Ambient Influenza and Avian Influenza Virus during Dust Storm Days and Background Days. Environ Health Perspect. 2010 Sep; 118(9): 1211-1216

Ye Q, et al. Haze Is a Risk Factor Contributing to the Rapid Spread of Respiratory Syncytial Virus in Children. Environ Sci Pollut Res Int. 2016 Oct; 23(20): 20178-20185

Chen G, et al. Is Short-Term Exposure to

**Η σκόνη και ο πυρετός της κοιλάδας**

- Ο πυρετός της κοιλάδας (Valley fever) ή κοκκιδιομύκωση σε Νοτιο-Δυτική Αμερική
- Μύκητας Coccidioides
- Αύξηση κατά 800% το 2000-2001, όπου υπήρχε επίταση των καταγλιών σκόνης

Tong QJ, et al. Geophyte Res Lett. 2017;44:4304-4312

Valley Fever ("Coccid" Infection)

CDPH's Valley fever website

## LIFE MEDEA on TV

Professor Emmanouil Galanakis of the University of Crete Medical School, and local project coordinator gave an interview to Creta TV network in June 2020. The subject of the interview was the effect of dust on health as well as the interrelation of dust and outbreaks of respiratory viruses. The full video of the interview has been upload on LIFE MEDEA Facebook page and can be viewed [here](#).



An interesting news bulletin regarding upcoming Desert Dust events in Cyprus was prepared by Alpha Channel TV in March 2020. The bulletin featured an interview of LIFE MEDEA researcher and head meteorologist Dr Phillipos Tymvios of the Department of Meteorology, as well as comments by Dr Charis Armeftis, pulmonologist and secretary of the Cyprus Respiratory Society who participates in the LIFE MEDEA Advisory Committee. The news bulletin can be viewed [here](#).



## Find us online

**FIND US ON THE LIFE-MEDEA OFFICIAL WEBSITE**

