



# ERA-ENVHEALTH

## NEWSFLASH



### NEWS:

1<sup>st</sup> SEMESTER 2021

**EDITORIAL: ANNOUNCEMENT  
2021 OPEN CONFERENCE**

**OTHER EVENTS**

**MERCURY IN HAIR - A 23 YEAR  
LONG TIME TREND STUDY**

**UNEQUAL ACCESS TO URBAN  
PUBLIC GREEN SPACES  
WITHIN CHILDREN AND  
ADOLESCENTS: EVIDENCE  
FROM THE GERMAN  
ENVIRONMENTAL SURVEY**

**CITIZEN-INCLUSIVE AIR  
QUALITY AND CARBON  
POLICIES IN THE AVEIRO  
REGION, PORTUGAL**

**HERA - HEALTH  
ENVIRONMENT RESEARCH  
AGENDA FOR EUROPE**

**HERA STAKEHOLDERS  
WORKSHOPS - SHAPING THE  
RESEARCH AGENDA FOR THE  
ENVIRONMENT, CLIMATE AND  
HEALTH NEXUS IN EUROPE  
FOR THE NEXT DECADE**

**ENVIRONMENT AND HEALTH  
IN CONTAMINATED SITES**

**THE ERA-ENVHEALTH  
NETWORK**

### EDITORIAL

Since COVID-19 appeared in 2020 and disrupted our lives, scientific knowledge and expertise at the interface between human and animal health in the spirit of “One Health” and environmental health is seen as the key tool to understand the impact of this pandemic and to guide the implementation of public policies.

Research on the links between the environment, human health and the Covid-19 pandemic has been central, not only to provide expertise for the prevention of COVID-19-related health risks and useful guidelines on how to organise daily life and protect health during this unprecedented period but also to look into and understand the links between and effect of the Covid-19 pandemic on the environment and health and provide an integrated view of health determinants.

Given the relevance of the topic, the ERA-ENVHEALTH network will devote its Annual Open Conference to the environment and health impacts of the Covid-19 pandemic, and invite researchers and policy experts in the field to present their most recent studies.

The ERA-ENVHEALTH Open Conference will be held online, hosted by the National Institute for Public Health and the Environment (RIVM), the Netherlands.

Three sessions are planned with a focus on

- communication and policy advice;
- air quality; and
- transformation perspectives for a sustainable future.

Join us and bring your contribution to fruitful discussions!

### SAVE THE DATE

**2021 ERA-ENVHEALTH Open Conference on**

**COVID-19 Pandemic and Environment and Health**

**Online Event - 8 October 2021 – 9:15 to 13:00 (CET)**

**Register now!**

Visit the [ERA-ENVHEALTH website](http://www.era-envhealth.eu) or our Italian partner’s website <http://www.ambiente-salute.it/> for more information!

### SAVE THE DATE

**ERA-ENVHEALTH ONLINE  
OPEN CONFERENCE  
COVID-19 PANDEMIC AND  
ENVIRONMENT AND HEALTH  
8 October 2021**

**Registration is open until  
September 23, 2021**

### OTHER EVENTS

**ISEE 2021:** 33<sup>rd</sup> Annual Conference of the International Society for Environmental Epidemiology on Promoting Environmental Health and Equity in a Shifting Climate.

August 23-26, 2021, online

**ISES 2021:** 33<sup>rd</sup> Annual Conference of the International Society of Exposure Science on Multisector Engagement for Addressing Emerging Environmental Exposures

August 30-September 2, 2021, online

*This publication reflects only the author’s views and the member organisations are not liable for any use that may be made of the information contained therein.*

## MERCURY IN HAIR - A 23 YEAR LONG TIME TREND STUDY

Maria Kippler, Karolinska Institute. [maria.kippler@ki.se](mailto:maria.kippler@ki.se) and Karin Norström, Swedish Environmental Protection Agency [karin.norstrom@naturvardsverket.se](mailto:karin.norstrom@naturvardsverket.se)

The Swedish EPA is a governmental agency with a vision of achieving “A good environment for people and all living things, now and for future generations”. We have the overall responsibility for coordinating the national and regional environmental monitoring, which includes ten program areas. One of these areas is the programme for Health-related Environmental Monitoring – HÄMI.

The programme started in 1993 and the focus is to estimate human exposure of hazardous substances from the environment that can affect the human health. Children, adolescents and women are regularly studied and for which time trends exist. Examples are lead (Pb) in children, cadmium (Cd) in middle aged women, phthalates and persistent organic pollutants in first-time mothers. Studies are also performed to link exposure to possible health effects by evaluating certain health indicators. The results that are generated within HÄMI should be able to show trends in human exposure, identify needs of action and to show effects of actions taken, e.g. from regulatory work. The results are also used for international environmental reporting.

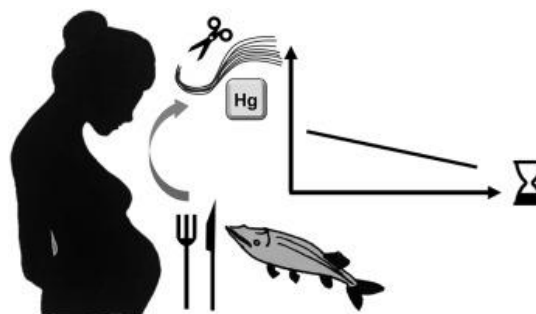
Since 1996 the Swedish Food Agency, annually collects blood, urine, breast milk and hair from first time mothers in Uppsala, a city just north of Stockholm. The study is mainly financed by the Swedish EPA and besides many organic environmental pollutants, also mercury (Hg) in hair has been studied.

Mercury is one of the particularly dangerous substances that is being phased out within the framework of the work being done to reach the

environmental goal “A non-toxic environment”. Measures to reduce the use of mercury have strongly reduced the emissions, but the mercury that is released to the environment remains for a very long time and can be converted to methylmercury (MeHg) which is accumulated in fish.

Fish is the largest, if not the only, source of exposure to MeHg in humans. MeHg can damage the central nervous system, and especially the fetus is sensitive. Human biomonitoring is therefore important, especially of pregnant women and children.

This time series has now been evaluated for the period 1996-2019. The results show that both the level of mercury in hair and the fish intake are slowly declining in Swedish women. The study also shows that the level of mercury in hair is positively correlated with the amount of fish consumed, age and level of education.



Link to article:  
<https://pubmed.ncbi.nlm.nih.gov/33022548/>

## UNEQUAL ACCESS TO URBAN PUBLIC GREEN SPACES WITHIN CHILDREN AND ADOLESCENTS: EVIDENCE FROM THE GERMAN ENVIRONMENTAL SURVEY

Julia Rehling, German Environment Agency

Public green spaces have a high potential for a positive impact on people’s health and wellbeing, especially in urban areas. Studies on environmental justice indicate socially unequal access possibilities to urban public green spaces.

New findings from the German Environmental Survey for Children and Adolescents (GerES V, 2014-2017) reveal socioeconomic differences in walking time from home to public green spaces in young people living in urban areas in Germany. In general, children and adolescents with a low or medium socioeconomic position (SEP) need more time to reach an urban public green space in their neighbourhood than children and adolescents with a high SEP, independent of their age group, sex, migration background, and whether they live in the former East or West of Germany.

GerES V is a collaborative study conducted together with the German Health Interview and Examination Survey for Children and Adolescents (KiGGS Wave 2) of the Robert Koch Institute. This cooperation

allows the analysis of a joint dataset with information on environmental health resources together with socioeconomic and sociodemographic factors.

The results indicate that disadvantaged social groups are more likely to encounter unfavourable health conditions and are less able to benefit from health-promoting offers, which is an important aspect of environmental health inequalities. In view of the well-known health benefits of public green spaces, socioeconomic differences in walking time could increase existing health inequalities among children and adolescents in Germany. The results are also relevant against the background of the COVID-19 pandemic, as public green spaces help maintaining interaction and physical activity, especially when individual free movement outdoors is restricted.

The abstract and full article are available at <https://www.mdpi.com/1660-4601/18/5/2326>.

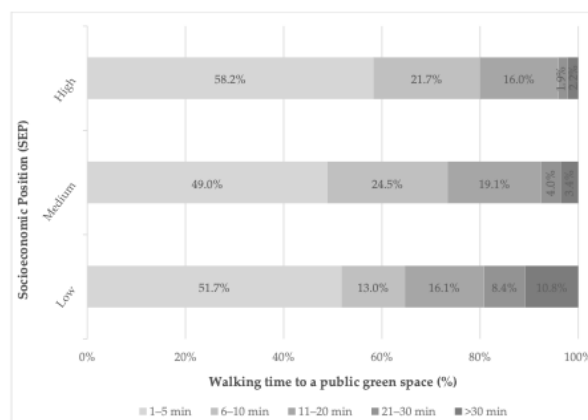


Figure 1. Walking time to a public green space from home by socioeconomic position (SEP) in children and adolescents living in urban areas in Germany (information provided by parents). N = 1110 (unweighted); % weighted according to data on the residential population of Germany; Kendall-Tau-b = -0.1 (p = 0.002).

## CITIZEN-INCLUSIVE AIR QUALITY AND CARBON POLICIES IN THE AVEIRO REGION, PORTUGAL

Vera Rodrigues, University of Aveiro, Portugal



ClairCity is a research project funded by the EU Horizon 2020 programme, which aimed to improve future air quality and carbon policies in European cities by initiating new modes of engaging citizens, stakeholders and policymakers. Six partner cities directly shaped the project: Amsterdam in the Netherlands; Bristol in the UK; Ljubljana in Slovenia; Sosnowiec in Poland; the Aveiro region in Portugal and the Liguria region in Italy. ClairCity examined the possible future impacts of citizens' policy preferences and implementation possibilities against national, regional and local targets. By investigating citizens' current behaviours, their preferred future behaviours and their preferred future policy measures.

As an example, in the Aveiro Region, after industry, car transport is the main contributor to NOx emissions, and it also contributes to a reasonable share of PM10 emissions. A very high percentage of the citizens surveyed within ClairCity currently 'always' use a car for commuting to work (65%), going shopping (67%) or for leisure (44%). The number of citizens using public transport and active travel is very small compared to the other ClairCity case studies. Leisure is the activity for which public transport and active travel are most popular. On the other side, there is a huge demand for public transport and active travel in the future provided that current barriers are overcome. Despite the overwhelming reliance on cars in the present for commuting to work, shopping and leisure, respectively 75%, 56% and 68% of respondents do not want to be using a car for these activities in the future. This indicates a very large latent demand for alternatives in the Region.



Using the Delphi survey process, workshops, and innovative Skylines game for mobiles, ClairCity asked citizens about the types of policy measures they would support to reduce air pollution and carbon emissions. A total of 1,700 local stakeholders were engaged during this process. Their favourite policy measures were improving cycling infrastructure and increasing active travel and public transport use for work and school. Aveiro Region citizens are urging mobility related policies including the reduction in private car use. This means that besides the local and regional governments, citizens also see a need to change their habits. For public transport, citizens demand more ambition and speed in policy implementation.



Figure 1. Engagements throughout the ClairCity project.

ClairCity assessed the environmental, health and economic impacts of these policy measures (unified policy scenarios (UPS)) and compared them to business as usual (BAU) for 2025, 2035 and 2050. The citizen UPS scenario would significantly improve air quality, and consequently, human health compared to the current situation and to future BAU. It is estimated a maximum reduction of the NO2 concentrations of 87%, and a maximum reduction of only 17% of the fine particulate matter in the air, in 2050. The slight decrease of the PM2.5 concentrations is associated with the fact that citizens have not come up with one single energy/heating measure. Although residential heating is a main source of PM2.5 emissions, this is not perceived as an air pollution source by citizens. This is an indication of either of lack of knowledge (e.g. on how heating can be a source of pollution, or on alternatives heating options) or lack of empowerment to ask authorities to do something about it.

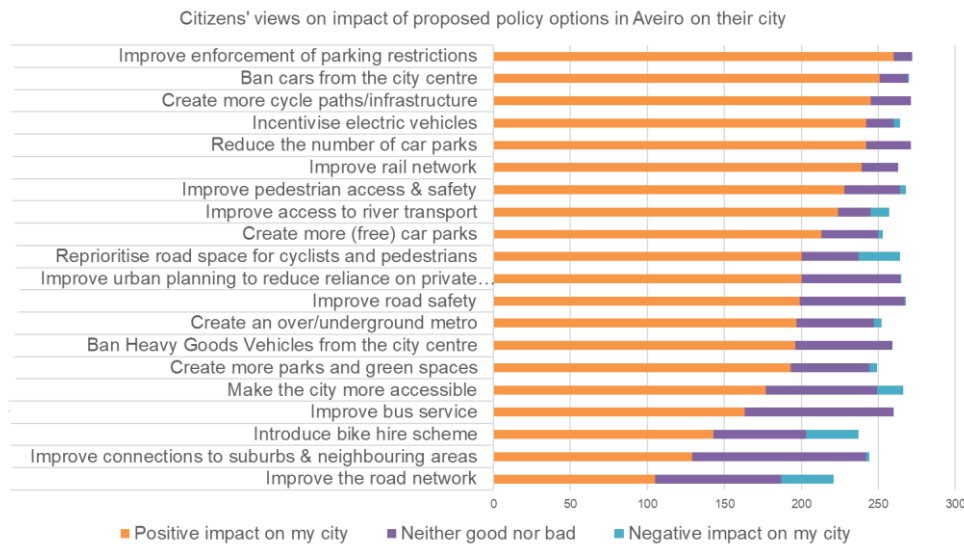


Figure 2. Citizens' views on the impact that proposed policy options in Aveiro would have on their lives

More information on ClairCity can be found at [www.claircity.eu](http://www.claircity.eu).



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 689289.



## HERA - HEALTH ENVIRONMENT RESEARCH AGENDA FOR EUROPE

Adrienne Pittman, ANSES, Paris, France  
Joana Ferreira, University of Aveiro, Portugal



The H2020 HERA (Health Environment Research Agenda for Europe) project aims to identify and prioritise the major research goals in the nexus Environment, Climate and Health for 2020-2030. Reasons for such a research agenda are widespread concerns of the EU citizens about the effects of climate change and of environmental deterioration on human health. In addition, the EU Green Deal adopted in December 2019, during the first year of the HERA project, also addresses the same concerns and sets a number of specific objectives to combat them from policy level.

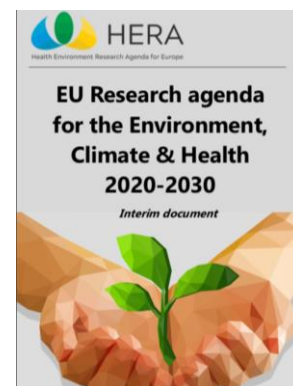
To create this research agenda, the partners developed a specific methodology to consult and involve scientists and stakeholders in identifying knowledge gaps and research needs (Figure 1). A Consultation Group and an International Advisory Board complement both the scientific and stakeholder contributions. The involvement of stakeholders and end-users, both from the research and policy domains, increases the impact and relevance of the HERA conclusions.

HERA web-based surveys targeting research communities and stakeholder groups have been carried out in 2019 and 2020 along with a series of online and face-to-face consultation meetings involving hundreds of researchers and other stakeholders and resulted in the identification of a number of research areas to be addressed. The first product was the "interim agenda" published in March 2020 discussed below.

Recommendations for research areas therein cover research to reduce the effects of climate change and environmental degradation on health, to eliminate environmental exposures harmful to health such as chemicals, plastics and radiation and to promote healthy lives in sustainable and inclusive societies including research on urban and rural living, air pollution and occupational conditions. Further, transformational research using innovative interdisciplinary approaches to induce change are also needed as well as development of new tools and methodologies and solid research infrastructures to build sustainable research capacities in Europe.



Figure 1. HERA framework for engaging stakeholders and scientist in the definition of Research goals for the interim agenda (Source: HERA Interim Research Agenda).



More information on HERA Project can be found at <https://www.heraresearcheu.eu/>



HERA is a project funded by the European Union's Horizon 220 Research and Innovation Programme under the grant agreement no. 825417.

The specific research recommendations in the interim agenda aim to support policy makers, authorities, the public health sector, industry, NGOs and citizens. Research is required to increase knowledge on identified needs, but also to increase the integration of available knowledge and its implementation in public policies. We also identify required infrastructures and tools that are expected to boost European research in the environment, climate and health fields and we make recommendation to support human resources, training and education as well as citizen awareness and involvement.

The interim agenda was the basis for further Europe-wide consultations and stakeholder engagement including additional surveys and workshops held in 2020 and it was also complemented by lessons learned from the COVID 19 pandemic and research gaps revealed within.

The work of the HERA consortium continues to date and the interim agenda is being further refined to provide more specific directions. An updated document - final HERA research agenda - will be available for EU-wide consultations in September 2021 (online) and the final version will be released by the end of this year.

### Research Goals on Environment, Climate and Health 2020-2030



### HERA STAKEHOLDERS WORKSHOPS – Shaping the research agenda for the environment, climate and health nexus in Europe for the next decade

Adrienne Pittman, ANSES, Paris, France  
Joana Ferreira, University of Aveiro, Portugal

Ownership of targets and success in implementation often build on a successful science-policy-society dialogue and exchange in defining the targets and needs.

In the framework of the HERA project (Health and Environment Research Agenda for Europe), regional stakeholder workshops have been organised in order to further identify, analyse, cluster and prioritise key research topics in the

environment, climate and health nexus that require scientific support in Europe in the next decade. One of the reasons for such workshops were to ensure the relevant design and format of recommendations that could lead to subsequent effective implementation on European, national and local levels.

Due to the COVID-19 pandemic, these workshops had to be carried out online, using SOFA online tool. SOFA is a powerful software that allowed to reproduce the real workshop environment with plenary sessions and working group tables where participants could discuss and present ideas in post-it notes, that were then brought together into different topics on policy and research support goals and needs.

The workshops were divided into four parts including two plenaries and two one-hour breakout sessions:

- A short introductory plenary session briefly presenting the HERA approach and the type of stakeholder input received/sought;
- Breakout session 1 focused on identifying key priority areas in which to develop policy and practices in the environment, health and climate nexus;
- Breakout session 2 then built on results of the session 1 to transform the identified priority areas into knowledge needs and research topics;
- A final plenary session to discuss the results from the working group tables and reflect on these with regards to the HERA research goals identified in the interim agenda document.


Representatives from stakeholder organisations, including non-governmental organisations, scientific institutions, industry representatives and professional federations, trade unions, local authorities, from various fields of expertise were invited and participated in these workshops.

Regional workshops have been held for the following European regions:

- France-Belgium-The Netherlands;
- Nordic, UK and Ireland region;
- Southern Europe;
- East and Central Europe,
- Germany/Austria/Switzerland region.

The input received on the research and information gaps related to the “nexus” and stakeholder needs and priorities are used by the HERA consortium partners to feed into the final HERA agenda for research on environment, climate and health at the 2030 horizon. That document will be also available for EU-wide consultations in September 2021 (online) and we will be pleased to see your contributions!



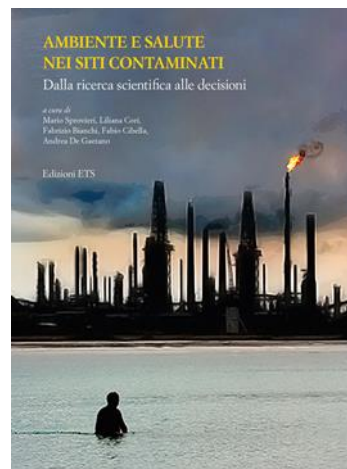
 HERA is a project funded by the European Union's Horizon 2020 Research and Innovation Programme under the grant agreement no. 825417.

## ENVIRONMENT AND HEALTH IN CONTAMINATED SITES

**Liliana Cori, Istituto Fisiologia Clinica, Consiglio Nazionale delle Ricerche, Pisa, Italy**

*“Environment and Health in Contaminated Sites. From scientific research to decisions”* was published on April 2021, and included the experience of the Project CISAS, International Centre for Advanced Studies on Environment, Ecosystem and Human Health, funded in 2016 by the Italian Research Minister.

The management of highly polluted areas is part of the challenges for the immediate future, and includes a deep knowledge of the history of the territory and the people who live there, new technologies for monitoring and remediation, long-term strategies together with rapid and incisive actions to mitigate existing risks.







For the researchers of the National Research Council, in collaboration with local Health Agencies, Environmental Protection Agencies and Universities, the challenge was to monitor, experiment, investigate and propose solutions for remediation of highly polluted areas, by involving the relevant actors on environment and health together with local administrators and institutions, associations and schools.

The experience involved three territories that include land and sea areas, the three SIN (Sites of Reclamation of National Interest) of Priolo and Milazzo in Sicily Region, Crotona in Calabria Region, where environmental pressures from polluting industries have been significant throughout history and have different perspectives in terms of production and land use.

The studies on the environment and health have been carried out by focusing on their relationship, reasoning on environments as ecosystems that include people and involve them directly, making use of experimental sciences and biomathematics.

Views on pollution of the sea were intertwined, from water quality along the water column from the surface to the seabed, to sediments, phytoplankton, fish and the markets where people buy food, including innovative techniques to understand the behaviour of pollutants over time and the presence of “emerging”, as yet unknown, substances and cumulative risks.

Air pollution monitoring, meteorological and pollutant transport models were used to create diffusion maps and forecasting scenarios, which were essential for environmental epidemiology studies. Odour emissions were studied with the help of citizens (who report with an APP) and also the effects of air contamination on the lung epithelium.

Eco-toxicological and molecular studies used samples taken from polluted natural environments to closely observe their evolution with experimental models, with a specific focus on endocrine and immune system changes.

Epidemiologists carried out a cohort study, involving more than 800 mother-child pairs in the three areas, which will continue over the next few years as the babies grow over time. Specific indicators were proposed for each polluted site, in order to follow the evolution of exposure to the main pollutants over time and to understand their effects on the health of communities through the systematic observation of the development of specific pathological conditions. In order to follow the fate of pollutants from the environment to the human body in an increasingly refined way, a prototype microcapsule has been developed for exploring the intestinal microbiome.

In and around those studies, a multitude of presentation events, competitions for schools, training courses, scientific congresses, teleconferences and webinar meetings have been organised to bring the results back to interested parties, with the objective to increase the scientific knowledge of the community and administrators, while expanding the opportunities for collaboration among researchers.

The work developed by CISAS brought together the contributions of around 180 researchers, who are specialists in their field, offering an overview of the complexity of the problem of remediation of highly polluted areas, dealing with all the various aspects (legal, environmental, health and economic), and framing possible solutions considering innovative policies such as the circular economy and the bio-economy. This work lays the groundwork for trying to tackle a heavy legacy from the past, which has helped create wealth but at a high price in terms of the environment and health. Today, knowledge and technologies are opening up the possibility of moving towards a sustainable development.

More information can be found at:

Environment and Health in Contaminated Sites. From scientific research to decisions [in Italian, *Ambiente e Salute nei siti contaminati. Dalla ricerca scientifica alle decisioni*], edited by Mario Sprovieri, Liliana Cori, Fabrizio Bianchi, Fabio Cibella, Andrea De Gaetano. ETS Edizioni, pages 508. (<http://www.edizioniets.com/scheda.asp?n=9788846751171&from=PrimoPiano>).



## THE ERA-ENVHEALTH NETWORK

The European Environment and Health Action Plan for 2004-10 pointed to a need to strengthen networks between researchers, policy-makers and stakeholders. The FP7 ERA-ENVHEALTH project was set up to bring together European organisations planning research in the Environment and Health (E&H) arena with the objective of providing policy support. ERA-ENVHEALTH's task was to mobilise scientific research in support of European and national policies on E&H issues.

### Goals and activities

ERA-ENVHEALTH facilitates better communication and deeper understanding of the drivers and priorities in E&H for both scientists and policy-makers. ERA-ENVHEALTH is a **unique active transnational network** in the E&H field. ERA-ENVHEALTH has shown that transnational collaboration in E&H fills an important niche and the network is an **innovative forum** to discuss challenges, visions and emerging issues. In this respect

- **access to, sharing and communicating information** is a crucial success factor, and
- **joint activities** are essential to promote exchange and collaboration and foster new ideas to enhance the uptake of environment and health issues and co-benefits in different sectors and provide valuable support in tackling the future challenges for better health and well-being.

The structure of the network is based on “contributing and sharing” and involves no centralised budget, each organisation participates on a voluntary basis

### Join us!

- Become a **member**: signature of the MoU, contribution on a voluntary basis
  - Register for the ERA-ENVHEALTH newsflash: with regular up-to-date information on E&H activities
- Participate in its **annual conferences** and help build up this innovative discussion forum

## THE ERA-ENVHEALTH MEMBERS

Acronym	Name	Country	Logo
ANSES	French agency for food, environmental and occupational health & safety	France	
Centre Léon Bérard	University Lyon 1	France	
CNR	Italian National Research Council	Italy	
EPA	Environmental Protection Agency	Ireland	
FPS HFCSE	Federal Public Service Health, Food Chain Safety and Environment	Belgium	
PHAS	Public Health Agency of Sweden	Sweden	
RIVM	National Institute for Public Health and the Environment	Netherlands	
Swedish EPA	Swedish Environmental Protection Agency	Sweden	
UA	University of Aveiro	Portugal	
UBA	German Environment Agency	Germany	
UoWM	University of Western Macedonia	Greece	

## CONTACTS

<https://www.anses.fr/en/content/era-envhealth-network>

Do not hesitate to get in touch with the network either through your national contact point and member of the network or by contacting:

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