



ERA-ENVHEALTH

NEWSFLASH



NEWS:

1ST SEMESTER 2017

WHO-EUROPE: 6TH MINISTERIAL CONFERENCE ENVIRONMENT & HEALTH

... AND ITS SIDE EVENTS

JOINT EUROPEAN CONFERENCE ON BIODIVERSITY AND HEALTH IN THE FACE OF CLIMATE CHANGE

CONGENITAL ANOMALIES IN CONTAMINATED SITES: A MULTISITE STUDY

SPECIAL ISSUE "HUMAN BIOMONITORING 2016"

PUBLICATIONS ON URBAN GREEN SPACE BY THE WHO REGIONAL OFFICE FOR EUROPE

FLAREFOOD: MONITORING OF BROMINATED FLAME RETARDANTS IN FOOD

CICAS, INTERNATIONAL CENTRE FOR ADVANCED STUDIES ON ENVIRONMENT, ECOSYSTEMS AND HUMAN HEALTH, ITALY

THE ERA-ENVHEALTH NETWORK

REMINDER:

SAVE THE DATE

• **20-21 November 2017: ERA-ENVHEALTH annual conference, Palermo, Italy**

EDITORIAL

Climate change is a major global challenge. Two international climate conferences have been held recently: Paris 2015 (COP21) and Marrakech 2016 (COP22), and serious commitments have been taken.

In June, the 6th Ministerial Conference on Environment and Health of WHO –Europe in Ostrava (Czech Republic) underlined again the urgency of interventions on climate change, considered as a major direct threat, with a global dimension but with local consequences. For this reason, the presence of local administrators and stakeholders, together with Ministries and International Organisations, was particularly significant. Indeed, the action must be devoted to mitigation at the local level, while scientists identify the most effective adaptation measures to be applied at the local and international level.

In every country several bottom-up initiatives are taking place, and it is only the sum of all those that will make the difference. The possibility offered to coordinate and fine-tune local and international activities is crucial and will hopefully produce visible results in the near future.

The **ERA-ENVHEALTH NETWORK** is committed to contribute to reinforce the research activities in the field of environment and health, in particular discussing an ERA-ENVHEALTH joint activities white paper, to be finalised during the next GA meeting foreseen in Palermo, Italy, in November 2017, invited by the International Centre for advanced studies on environment, ecosystems and human health, CISAS, presented in the following pages.

In the following pages an overview of the Ostrava Conference and feedback from some of the side events will be provided, as well as the results of the European Conference on Biodiversity and Health, held in Bonn.

New publications, which expand our knowledge in the fields of: human biomonitoring, with a special issue of the International Journal of Hygiene and Environmental Health; green spaces, with a publication from WHO Europe; flame retardants in food, with an article published in Food Control; congenital anomalies, with an article published in the International Journal of Environmental Research and Public Health, will be presented.



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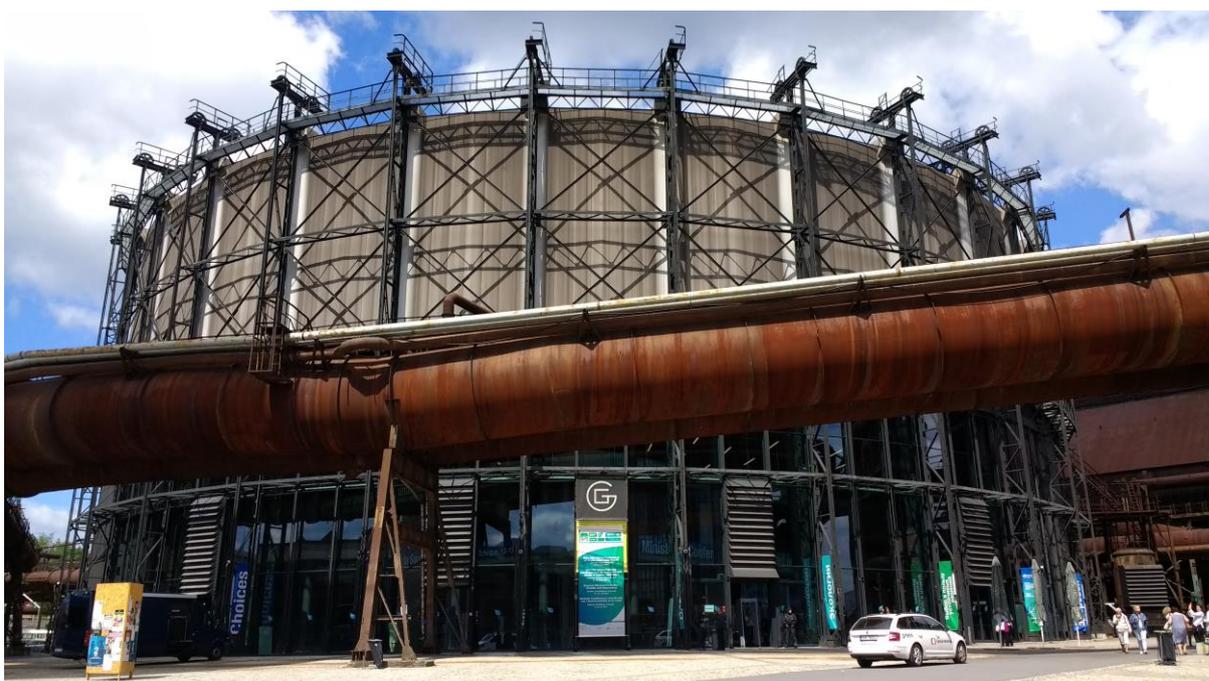
WHO-EUROPE 6TH MINISTERIAL CONFERENCE ENVIRONMENT & HEALTH 13-15 JUNE 2017, OSTRAVA / CZECH REPUBLIC

On June 13th – 15th the 6th Ministerial Conference on Environment and Health of WHO -Europe took place in Ostrava, Czech Republic, bringing together 500 participants from 50 of the 53 Member States, civil society, local authorities and international organisations with many high level officials from WHO's European Region. The city of Ostrava kindly hosted the event. This choice as well as that of the conference venue (the disused industrial complex of Dolní Vítkovice formerly devoted to coal mining and pig iron production converted to a conference venue and museum) was symbolic with regards to environmental health themes: a city with a strong industrial past, but which now has high ambitions as a healthy green city (Ostrava will be a candidate for European green city 2020).

The outcome of the conference is the Declaration of the Sixth Ministerial Conference on Environment and Health or "Ostrava declaration" and its two annexes (compendium of possible actions and institutional arrangements). The Declaration provides a common vision and the main commitment from the declaration is the development of national portfolio of actions by the Member states by the end of 2018. To develop those national portfolios the Member states can draw from a compendium of possible actions from annex I or develop other actions, providing flexibility for the Member states to identify and address their own priorities.

The priority areas are:

- improving indoor and outdoor air quality;
- ensuring universal, equitable and sustainable access to safe drinking-water, sanitation and hygiene;
- minimising the adverse effects of chemicals on human health and the environment;
- preventing and eliminating the adverse environmental and health effects, costs and inequalities related to waste management and contaminated sites;
- strengthening adaptive capacity and resilience to health risks related to climate change and supporting measures to mitigate climate change;
- supporting the efforts of European cities and regions to become healthier and more inclusive, safe, resilient and sustainable;
- building the environmental sustainability of health systems;
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- WHO/Europe's 6th Ministerial Conference of Environment and Health: <http://www.euro.who.int/en/media-centre/events/events/2017/06/sixth-ministerial-conference-on-environment-and-health>
- WHO's European Environment & Health Process: <http://www.euro.who.int/en/health-topics/environment-and-health>
- Sustainable Development Goals: <https://sustainabledevelopment.un.org/>

... 6TH MINISTERIAL CONFERENCE, 16 SIDE EVENTS

Further to addressing new and emerging issues, it was also stressed that Member states must continue addressing the unfinished agenda of the 2010 Parma declaration. Asbestos and sanitary facilities in schools were specifically mentioned.

The European process on environment and health was initiated in 1989 and pursues the target to minimise environmental impacts on human health in the European Region. It is an established intersectoral and inclusive process and platform, which will inter alia foster the implementation of the 2030 Agenda for Sustainable Development. Using the national reporting on the achievement of the Sustainable Development Goals (SDGs) and their targets, the implementation of the Ostrava Declaration can be measured and reported.

Some of the important key words from the conference were:

- working together and focusing more on intersectoral action, including even more sectors (e.g. the private sector) and linking with the SDG's;
- cooperating and creating more partnerships between countries with more and less experience;
- emphasising the critical role cities and regions (Europe's Healthy Cities and the Regions for Health networks);
- taking social equity and environmental health inequalities into account;
- stressing that it's time to act, notably on climate change & air pollution;
- calling towards the health sector to lead by example and become more sustainable, investing in preventive healthcare and promoting change amongst staff and patients;
- applying the exposome or multiexposure approach;
- using new technologies such as apps with air pollution data or traffic flow data, car sharing, e-bikes, etc.;
- continue monitoring & data sharing: not only on a global level, but also collecting data from city districts;
- involving & supporting initiatives by citizens and other stakeholders.

Other subjects such as chemical safety, including human biomonitoring, circular economy, noise, waste, contaminated sites, environmental justice, greening the economy and implementing international initiatives and agreements were cited.



16 side-events, organised by a number of organisations and institutions, covered a wide range of these issues. For example a side-event, organised by "Women engage for a common future" (WECF) in collaboration inter alia with the German Environment Agency (UBA), presented project examples from different European countries on **hazardous chemicals and waste water**. The projects mentioned topics like the inadequate supply of sanitary facilities in schools in rural areas and solutions to solve these problems (dry and separate toilets), lead in paint, flame retardants in toys made out of recycled materials and the national programme on endocrine disruptors in France.

A side-event on **human biomonitoring (HBM)** organised by the German Environment Agency in cooperation with the European Environment Agency, the European Commission and the Czech Republic contributed with information on three different compounds: 1) The European human-biomonitoring initiative - HBM4EU for which more detailed information can be found under www.hbm4eu.eu and which supplied a flyer in 10 different European languages, 2) the European Information Platform for Chemical Monitoring (IpChem) and 3) the importance of international human biomonitoring studies for the global monitoring of persistent organic pollutants (POPs).

The side-event **Advancing the elimination of asbestos-related diseases**, organised by Belgium, the Netherlands, Poland and Israel focused on the development of national and regional strategies to eradicate asbestos from the environment years after the ban on use. In 2010 WHO member states agreed in the Parma declaration to develop national programmes by 2015 to eliminate asbestos-related diseases. The Ministry of Infrastructure and Environment (the Netherlands), the Public Waste Agency of Flanders (Belgium), the Central Mining Institute (Poland) and the Ministry of Environmental Protection (Israel) all demonstrated different strategies regarding the elimination of human and environmental exposure to asbestos due to the presence of asbestos containing materials and waste.

BIODIVERSITY AND HEALTH IN THE FACE OF CLIMATE CHANGE – CHALLENGES, OPPORTUNITIES AND EVIDENCE GAPS

27-29 JUNE 2017, BONN / GERMANY

This joint European Conference was held on 27-29 June 2017, in Bonn/Germany. It was organised by the German Federal Agency for Nature Conservation (BfN) and the European Network of Heads of Nature Conservation Agencies (ENCA) in co-operation with the Helmholtz-Centre for Environmental Research (UFZ) / German Centre for Integrative Biodiversity Research (iDiv). The event was co-sponsored by the World Health Organization (WHO) Regional Office for Europe.

Climate change poses significant challenges to biodiversity and human well-being in Europe. Biodiversity in urban as well as in adjacent rural areas can provide health and climate change mitigation and adaptation benefits that can be actively fostered by nature-based solutions.

This joint European conference in Bonn brought together 220 experts from science, policy and practice to highlight and discuss the importance of biodiversity's contribution to human health in the face of climate change. In this context health is considered in its physical, psychological and social dimension, including socio-

environmental equity. The aim of the conference was to increase knowledge, share experiences and foster nature-based solutions to meet the challenges of climate change and health issues.

Latest scientific findings on the impacts of climate change on European biodiversity and links to human health were discussed. Furthermore, the implementation of nature-based solutions towards health and climate goals were outlined. Interactive sessions focused on case studies of successful demonstration projects and lessons learned. Resulting discussions lead to recommendations for creating synergies between ongoing policy processes, scientific programmes and practical implementation.

The conference documentation is available at <http://www.bfn.de/26590+M52087573abo.html>

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CONGENITAL ANOMALIES IN CONTAMINATED SITES: A MULTISITE STUDY

The health impact on populations residing in industrially contaminated sites is recognized as a public health concern especially in relation to more vulnerable population subgroups. The aim of this study was to estimate the risk of congenital anomalies (CAs) in Italian contaminated sites. Thirteen contaminated sites covered by regional CA registries were investigated in an ecological study. The observed/expected ratios (O/E) with 90% confidence intervals (CI) for the total and specific subgroups of CAs were calculated using the regional areas as references. For the contaminated sites with waste landfills, petrochemicals, and refineries, pooled estimates were calculated. The total number of observed cases of CAs was 7085 out of 288,184 births (prevalence 245.8 per 10,000). For some contaminated sites, excesses for several CA subgroups were observed, in particular for genital and heart defects. The excess of genital CAs observed in Gela (O/E 2.36; 90% CI 1.73–3.15) is

consistent with findings from other studies. For contaminated sites including petrochemical and landfills, the pooled risk estimates were 1.10 (90% CI 1.01–1.19) and 1.07 (90% CI 1.02–1.13), respectively. The results are useful in identifying priority areas for analytical investigations and in supporting the promotion of policies for the primary prevention of CAs. The use of short-latency effect indicators is recommended for the health surveillance of the populations residing in contaminated sites.

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Publication: Santoro M, Minichilli F, Pierini A, Astolfi G, Bisceglia L, Carbone P, Conti S, Dardanoni G, Iavarone I, Ricci P, Scarano G, Bianchi F, Group RS. Congenital Anomalies in Contaminated Sites: A Multisite Study in Italy. *Int J Environ Res Public Health*. 2017 Mar 10;14(3). pii: E292. - <http://www.mdpi.com/1660-4601/14/3/292>

SPECIAL ISSUE “HUMAN BIOMONITORING 2016” PUBLISHED

The special issue „Human Biomonitoring 2016”, Volume 220/2 Part A of the International Journal of Hygiene and Environmental Health has been published. It is based on the contributions to the 2nd International Conference on Human Biomonitoring, Berlin 2016, entitled “Science and policy for a healthy future”, jointly organised by the German Environment Agency and the Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (see previous Newsflash issue).

The 34 articles illustrate the state of the art of worldwide human biomonitoring (HBM). The articles deal with worldwide important human biomonitoring (HBM) programs, with innovative HBM methods, with HBM as a tool for health risk assessment and also with the relevance of HBM for health-related environmental protection – Europe-wide and worldwide.

Until March 2018, all articles are available online as open-access:

<http://www.sciencedirect.com/science/journal/14384639/220/2/part/PA>

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PUBLICATIONS ON URBAN GREEN SPACE BY THE WHO REGIONAL OFFICE FOR EUROPE

The World Health Organisation Regional office for Europe recently published three new reports on urban green spaces. The first report, published in 2016, is a review on the evidence of health benefits caused by urban green spaces. Furthermore, the review provides indicators of urban green space availability, accessibility and usage.

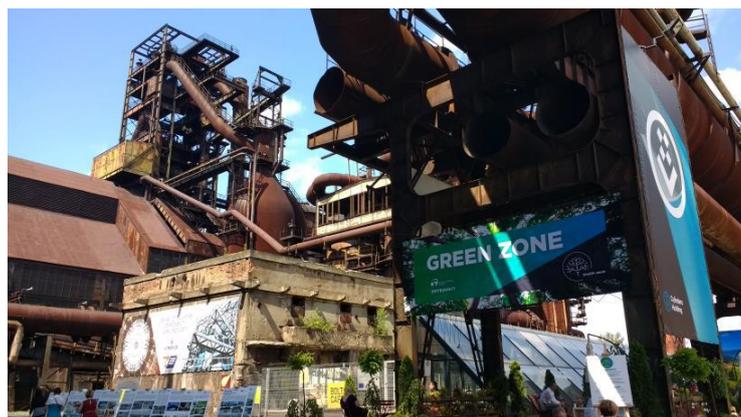
The second report, published in 2017, is a review of impacts and effectiveness of urban green space interventions. It compiles three working papers that were discussed in an expert meeting. The appendices include an evidence review on the environmental, health and equity effects of urban green space interventions, good practice examples, and lessons learned (case studies). Moreover, the role of the impact assessments in urban green space interventions is highlighted.

The brief for action was published in June 2017 and gives guidance for urban practitioners on the benefits of urban green spaces. In addition, it addresses potential risks and challenges to be considered and avoided when there are interventions on urban green spaces.

Urban green space: A brief for action (2017): <http://www.euro.who.int/en/health-topics/environment-and-health/urban-health/publications/2017/urban-green-spaces-a-brief-for-action-2017> (available in English and Russian)

Urban green space interventions and health: A review of impacts and effectiveness. Full report (2017): <http://www.euro.who.int/en/health-topics/environment-and-health/urban-health/publications/2017/urban-green-space-interventions-and-health-a-review-of-impacts-and-effectiveness.-full-report-2017> (available in English)

Urban green spaces and health - a review of evidence (2016): <http://www.euro.who.int/en/health-topics/environment-and-health/urban-health/publications/2016/urban-green-spaces-and-health-a-review-of-evidence-2016> (available in English)



FLAREFOOD: MONITORING OF BROMINATED FLAME RETARDANTS IN FOOD

FLAREFOOD was a two-year project funded by the Belgian Federal Public Service, Health, Food Chain Safety and Environment and completed in February 2017. The project was dedicated to monitoring of an emerging class of chemicals, namely brominated flame retardants (BFRs), in food in Belgium. The FLAREFOOD consortium brought together the expertise of three Belgian research organizations: Scientific Institute of Public Health, Toxicological Centre at the University of Antwerp and Flemish Institute for Technological Research. The main aim was to answer to the Commission Recommendation 2014/118/EU, in which the European Food Safety Authority (EFSA) recommended to monitor specific classes of BFRs and gather data on their occurrence in food in Europe.

Flame retardants (FRs) are anthropogenic chemicals that are added to a wide variety of consumer products, such as plastics, electrical/electronic equipment, polymers, textiles and building materials, to improve their fire resistance. Though FRs have obvious benefits in preventing fires, the concerns were raised because of their persistence, bioaccumulation and potential for toxicity, both in humans and animals, causing disruption of brain development, permanent behavioral and neurological changes, and endocrine disruption. Most BFRs may leach from the products into the environment and enter the food chain occurring mainly in food of animal origin.

Out of the four major FR groups on the market, FLAREFOOD targeted the BFR group which is currently the largest group due to its high performance efficiency and low cost. Food samples for the analysis were purchased in supermarkets, hard discount retailers and/or some local stores in Brussels and comprised fish, seafood and fish products, meat and meat products, milk and dairy products, eggs and egg products, food for infants and small children, fats and oils, and a limited number of other food products. Afterwards, utilizing simple but effective sample preparation techniques and advanced analytical equipment for sensitive and selective detection of organic molecules, the BFR concentrations were measured in the foodstuffs at the lowest levels possible. A wide distribution of the BFR concentrations was

observed especially within the food group 'Fish and fish products', which was also the most contaminated food group and had samples with the highest BFR levels of the study. The group 'Food for infants and small children' was the least contaminated group with only two samples containing BFRs at low levels. This is a positive observation, as infants are the most vulnerable subgroup of the population. Overall, the BFR levels that were measured in this project were consistent with the available literature data for food.

The results of FLAREFOOD confirm that certain Belgian foods remain contaminated with the BFRs that were banned in the EU for several years or for which use restrictions have been applied. Over the last years, no declining trend in levels of these BFRs could be clearly observed. Therefore, it is reasonable to continue surveillance on the occurrence of the BFRs in food.

At its completion FLAREFOOD offers:

- Robust analytical methods for quantification of different BFR classes
- Expertise in analysis of BFRs in Belgium
- Occurrence data on BFRs in food (including the less studied food groups) contributing to a more robust risk assessment of dietary exposure by EFSA and to a prospective setting of regulatory limits

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Publication: Poma G, Malarvannan G, Voorspoels S, Symons N, Malysheva SV, Van Loco J, Covaci A (2016). Determination of halogenated flame retardants in food: optimization and validation of a method based on a two-step clean-up and gas chromatography-mass spectrometry. *Food Control*, 65, 168-176
<http://www.sciencedirect.com/science/article/pii/S0956713516300287>

CISAS, INTERNATIONAL CENTRE FOR ADVANCED STUDIES ON ENVIRONMENT, ECOSYSTEMS AND HUMAN HEALTH, ITALY

The National Research Council promotes the implementation of the "International Centre for advanced studies on environment, ecosystems and human health", CISAS (Centro Internazionale di Studi avanzati su Ambiente ed impatti su ecosistema e Salute umana), which will be located in Palermo, Sicily.

The CISAS project involves four institutes of the National Research Council, coordinated by the Department of Earth

Sciences and Environmental Technologies, in coordination with other public research bodies.

The initial research activity, to be developed in 2017-2019, is focused on the three Contaminated Sites of National Interest (SIN) of Augusta-Priolo, Milazzo, and Crotone, characterized by severe environmental degradation and human impact phenomena of various origin, substantially caused by the development of major industrial activities.

... CISAS, INTERNATIONAL CENTRE FOR ADVANCED STUDIES ON ENVIRONMENT, ECOSYSTEMS AND HUMAN HEALTH

The present research programme aims at investigating environmental pollution and its connection with the ecosystem and human health, in three sites used of case studies, true natural laboratories suitable for multidisciplinary investigation.

Besides the specific focus on the interaction between environment and health, the second characteristic feature of this project is its reliance on biomathematical analysis of the investigated phenomena. Mathematical and statistical models have become more and more important in the evaluation of biological issues, offering standard models and the ability to aggregate meaningfully information from many heterogeneous sources. The adoption of a model-based approach, should allow the study of interactions, as well as of the transfer of pollutants, including the assessing of the bioavailability and/or bioaccessibility, which are the core challenges to understand how the environment can really affect the ecosystem and human health.

The CISAS project is organised around six work packages (WP) closely interlinked and strongly interconnected. It offers a flexible and concrete “complex and multidimensional tool” and organization scheme suitable to investigate with a modern vision and approaches, the effects of environmental pollution on human health and ecosystems.

WP₁ creates the habitat and provide tools for managing the machinery of the project, including coordination, support to connecting activities of the WPs, communication and dissemination.

WP₂ is focused on the study of physico-chemical processes of the main conventional and emerging pollutants identified in the different environmental matrices and at the air-water-soil-sediment interfaces, specifically in the three study areas. This WP has also two additional tasks dedicated to i) the transfer of pollutants in the terrestrial and marine trophic web with consequential effects on the food compartment and ii) the generation of a network of early-warning sensors for monitoring specific classes of pollutants in the different environmental compartments.

WP₃ will provide new insights on mechanisms of toxicity in marine animals, exerted by conventional and emerging pollutants (which can enter in the human food chain) identified in the study areas.

Different tasks were thus ideated in order to address the following issues: i) dynamic of biodiversity in contaminated areas; ii) alteration of transcriptional expression of genes in selected species associated to chemical “defensome”; iii) transcriptome and epigenetic modifications in response to pollutants.

WP₄ aims at developing knowledge about the association between priority pollutants specific for each area and selected health conditions (i.e., cardiovascular and kidney in the Crotone SIN, liver in the Priolo SIN, thyroid in the Milazzo SIN), identified on the basis of environmental and epidemiological knowledge and relevance for research and innovation. The study of risk markers or early damage in population groups at different levels of exposure will enhance the knowledge about selected indicators.

WP₅ will investigate the effects of environmental pollutants on placental physiology and pregnancy outcomes, according to the theory of the “intrauterine origins of health and disease susceptibility”. As the human placenta is located at the interface between maternal and external environment and embryo, it can be interpreted as an environmental monitoring system. The effects of environmental pollutants on placental transcriptome and their role on the tendency to late diseases onset will be evaluated in population samples living in highly polluted areas compared to subjects living in control areas.

WP₆ will serve, transversally, the scientific investigational WP's from 2 to 5. In WP₆ data exploration techniques will be used to generate hypotheses from existing data collections; experimental design and statistical analysis of experiments will be conducted; mathematical models will be built.

CISAS is expected to obtain important scientific and technological results:

- development of dispersion models of contaminants;
- improvement of knowledge about transfer of contaminants within the marine and terrestrial ecosystems and interactions at biochemical and molecular level of contaminants in model species (terrestrial and marine);
- development of epidemiological knowledge in the studied areas;
- improvement of knowledge about mechanisms of transfer of contaminants from the environment to humans;
- building of integrated and innovative systems for monitoring in real time the environmental matrices;
- development of conceptual models oriented to the management of landscapes and ecosystems;
- development of decision support tools based on scenario simulations, aimed at supplying decision-makers with forecasts about the consequences of interventions.



THE ERA –ENVHEALTH NETWORK

COLLABORATION IN RESEARCH TO HELP TACKLE THE CHALLENGES IN E&H AND THEIR POLICY IMPLICATIONS

The European Environment and Health Action Plan for 2004-10 pointed 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 objectives 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.

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

* ERA-ENVHEALTH: European Research Area network in the Environment & Health field.

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	
Folkhälsomyndigheten	Public Health Agency of Sweden	Sweden	
FPS HFCSE	Federal Public Service Health, Food Chain Safety and Environment	Belgium	
MEDDE	Ministry of Ecology, Sustainable Development and Energy	France	
RIVM	National Institute for Public Health and the Environment	Netherlands	
SPW	Wallonie public service	Belgium	
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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