

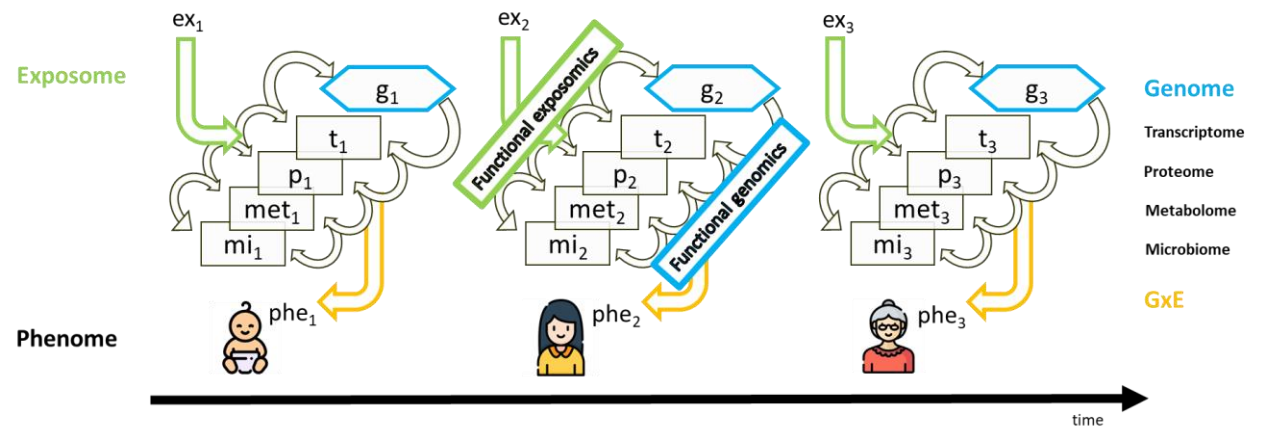
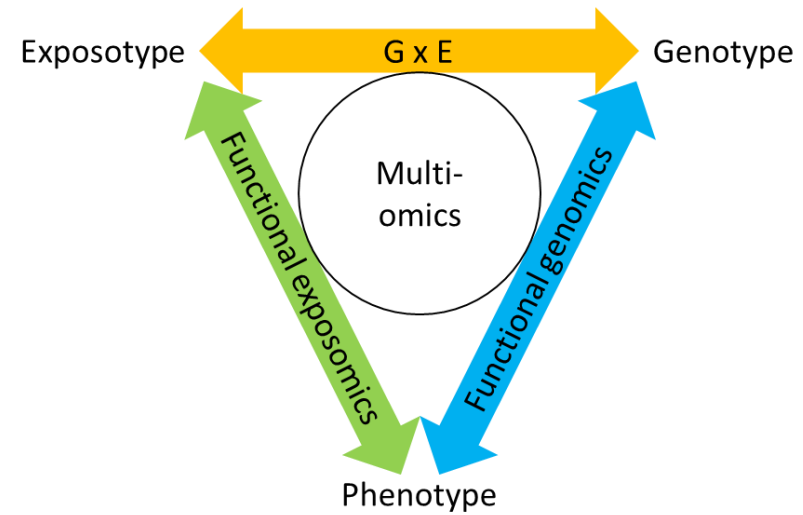
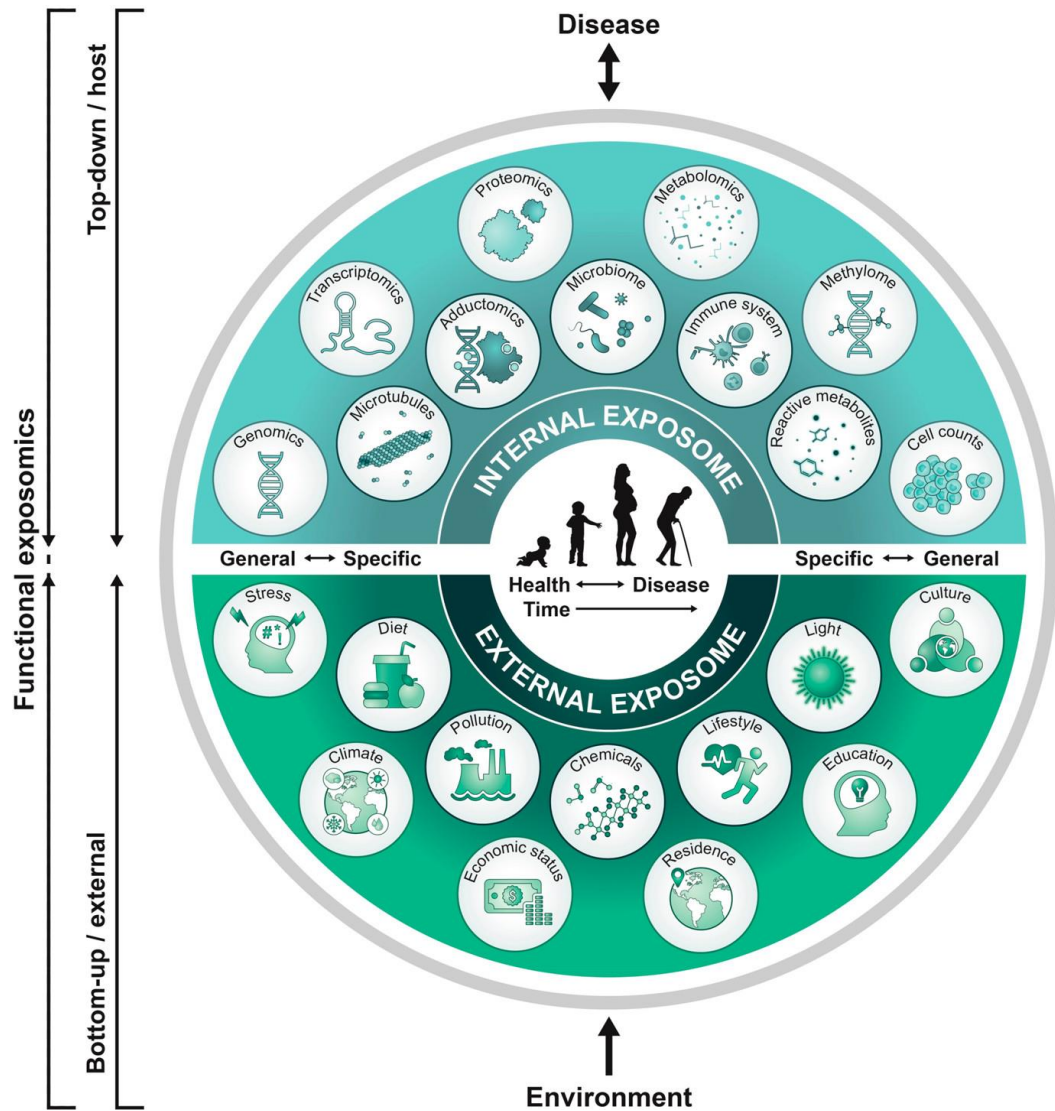
EIRENE Research Infrastructure

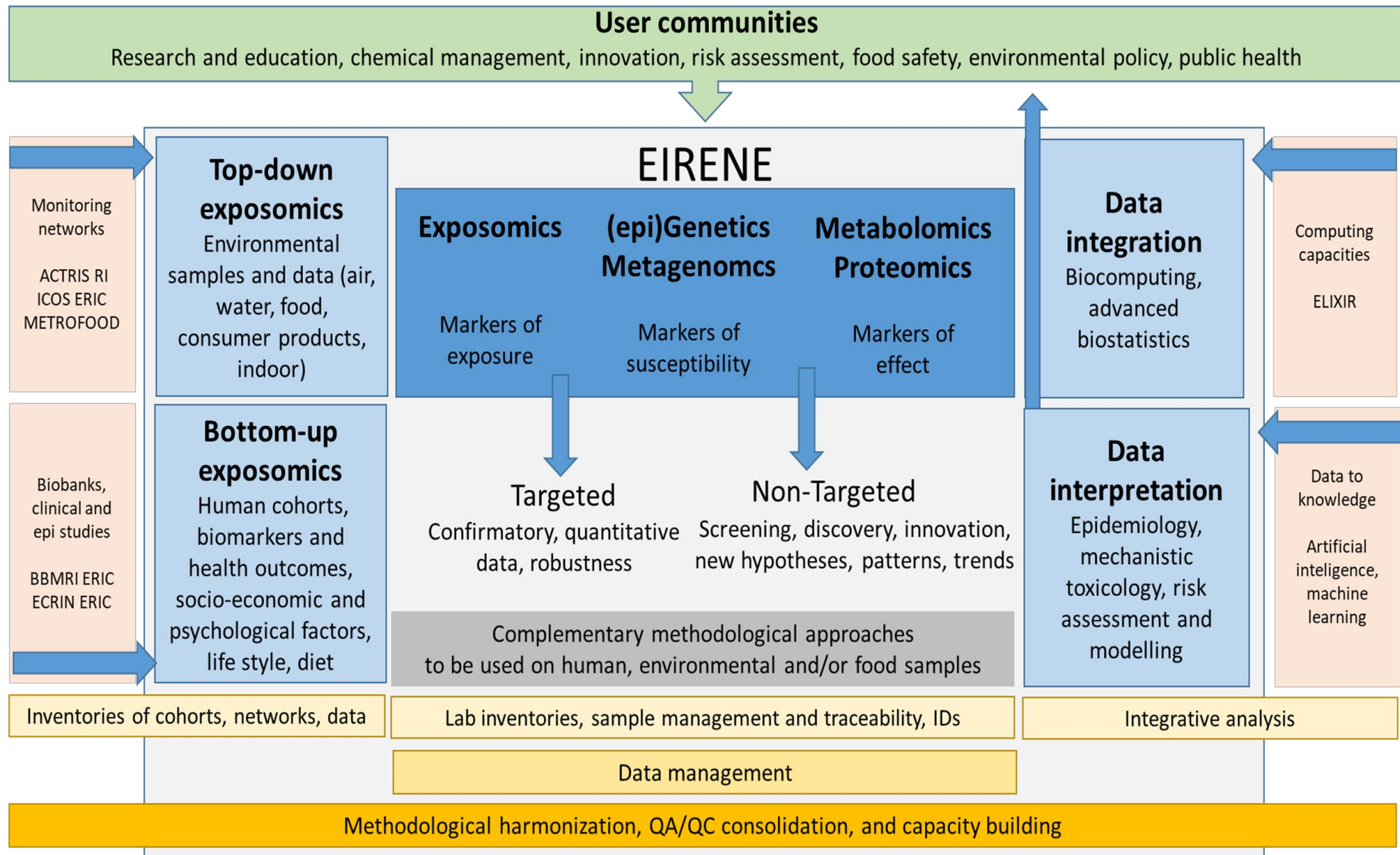


Research for a Healthy Future

A gap identified in the Health & Food domain of 2018 ESFRI Roadmap

„There is a need to enable a research infrastructure that will **facilitate research on the human health and wellbeing at all stages in development**, including ageing, nutrition and behavioural studies, and their connections to the social sciences and humanities. There are geographic, economic and environmental drivers affecting human health and wellbeing. Climate change, extreme weather, dramatic changes in ecosystem services, environmental pollution and exposure to harmful chemicals represent **a new combination of issues that require an integrated approach at pan-European level**. At the heart of this approach is the exposome, taking **a holistic view throughout the human lifetime on the effect of exposures to diet, lifestyle, and the environment on human health and disease**. The exposome coupled with advanced genetic and medical approaches represents an opportunity to tackle this complex issue by connecting to the landscape of Health & Food RIs and other domains. Ongoing EU projects and networks on human biomonitoring (HBM4EU and EMEP) are important steps to bring together relevant parties.”





RECETOX Research Infrastructure



Acronym:
RECETOX RI
Hosting Institution:
Masaryk University
Phase: construction
Character: single-site
Responsible person:
Prof. Jana Kůrková, Ph.D.
kmasova@recetox.muni.cz
Website:
old.recetox.muni.cz/index-en.php
Year of inclusion on the Czech Roadmap: 2010

Motto:
Science for a healthy future.

MUNI | RECETOX

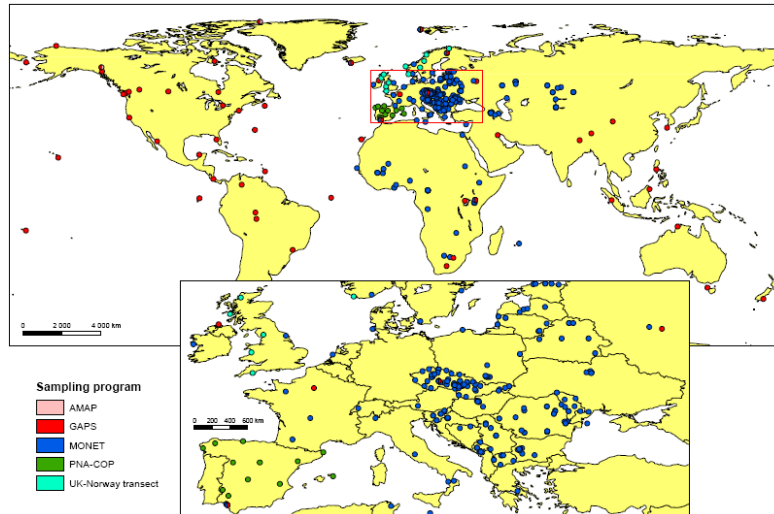
Characteristics

RECETOX RI enables research on both environmental and human health risks related to environmental contamination, and supports the safe management of chemicals. The existing and newly built capacities of the RECETOX RI core facilities offer a wide range of expertise needed for making environmental impact assessments for a variety of users. They provide access to analytical, chemical, biological, and toxicological laboratories, the environmental monitoring networks (EMN) (Monitoring Networks), population studies (GENASIS) (Global European Longitudinal Study of Genetic Susceptibility), and related data sources. They allow for the presentation of real data through the GENASIS (Global Environmental Assessment and Information System) information platform. The capacities for data analysis, interpretation and modeling are also available together with advanced biostatistics and bioinformatics offering a portfolio of services to users from both the academic and private sectors in the Czech Republic and abroad. The comprehensive interdisciplinary approach taken by RECETOX RI is unique in the European context. RECETOX RI offers capacities for the assessment of environmental impacts on human health, a platform for the development of innovative methods, know-how and technology transfer, teaching and consulting. The education and training activities of RECETOX RI at all levels of higher education improve the quality and professional readiness of its graduates. The training courses, workshops, and the international summer schools are also organized for attendees from universities, research institutes, health facilities, industrial enterprises, regional and state authorities, ministries, governments and international organizations. RECETOX RI is associated with the Czech nodes of the ECDC (European Centre for Disease Prevention), GENASIS (European Life-Science Infrastructure for Biological Information), and GENASIS (Genetics and Biomolecular Resources Infrastructure) European research infrastructures. It coordinates the GENASIS (European Environmental Exposure Assessment Network) project for the updated ESPRI Roadmap, and the GENASIS (Global Genes Observing) into the GENASIS (Global Observation System for Persistent Organic Pollutants). It also contributes to the implementation and management of four European programmes such as GENASIS (Human Dimensionality for Europe) and GENASIS (European Network for Observing our Changing Planet).

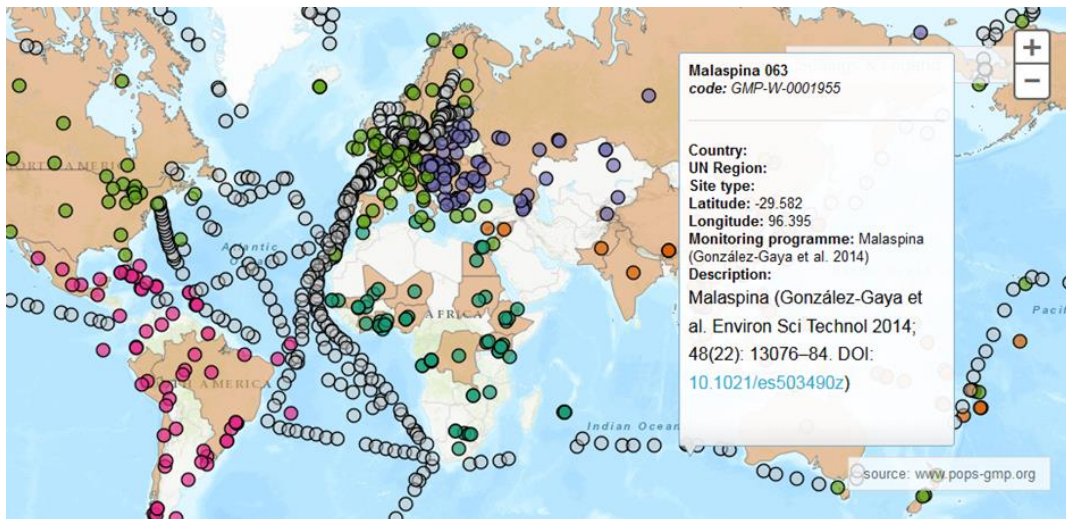
Socio-economic benefits

RECETOX RI develops new approaches to assess the causal links between human exposure to toxic substances and the development of chronic diseases, and improves our understanding of the mechanisms of such interactions. It identifies toxic mixtures in the environmental samples, consumer products and human tissues, as well as sources of such mixtures, their health effects and most vulnerable populations. It explores the links between these environmental exposures and social and economic factors that affect human health, and allows for the prioritization and better targeting of the relevant legislation. It contributes to the better management of toxic chemicals, the safe production of food and consumer products, and safe waste processing. It enhances the protection of human health, the development of preventive measures, and sustainability of healthcare. It collaborates with WHO (World Health Organization) and supports the implementation of the concepts of circular economy and healthy practices. It also provides university education and builds international capacities for assessing environmental exposures.

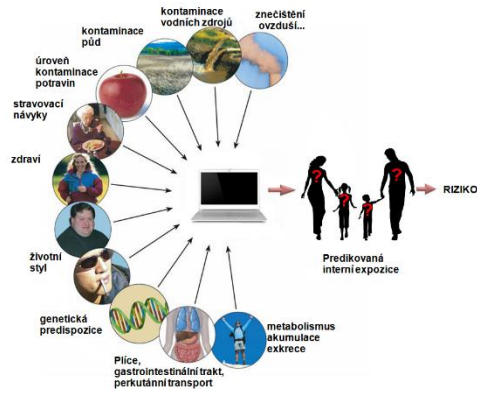
2012: RECETOX RI in the national roadmap



MONET monitoring networks
CELSPAC population studies
RECETOX accredited laboratories
GENASIS information platforms

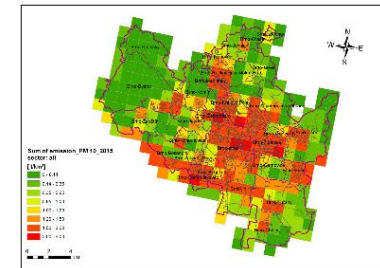


HORIZON 2020 WIDENING Instruments and the golden hattrick



H2020 TEAMING: [CETOCOEN EXCELLENCE](#):
Centre of Excellence in Environmental Health Science.
Partners: UCL, ETH, BBMRI, ICRC

H2020 ERA Chair: [R-EXPOSOME](#):
New research group in Epidemiology



H2020 TWINNING: [URBAN X](#):
Health impacts of human exposures in the urban environments.
Partners: UCL, IS Global, Utrecht Uni

Combined with the [EUROPEAN STRUCTURAL AND INVESTMENTS FUNDS](#):
CETOCOEN EXCELLENCE, CETOCOEN PLUS, RECETOX RI, ACTRIS RI

Addressing major societal needs and research challenges



MUNI

FNUSA
ICRC

UCL

ETH zürich



Teaming for a healthy future

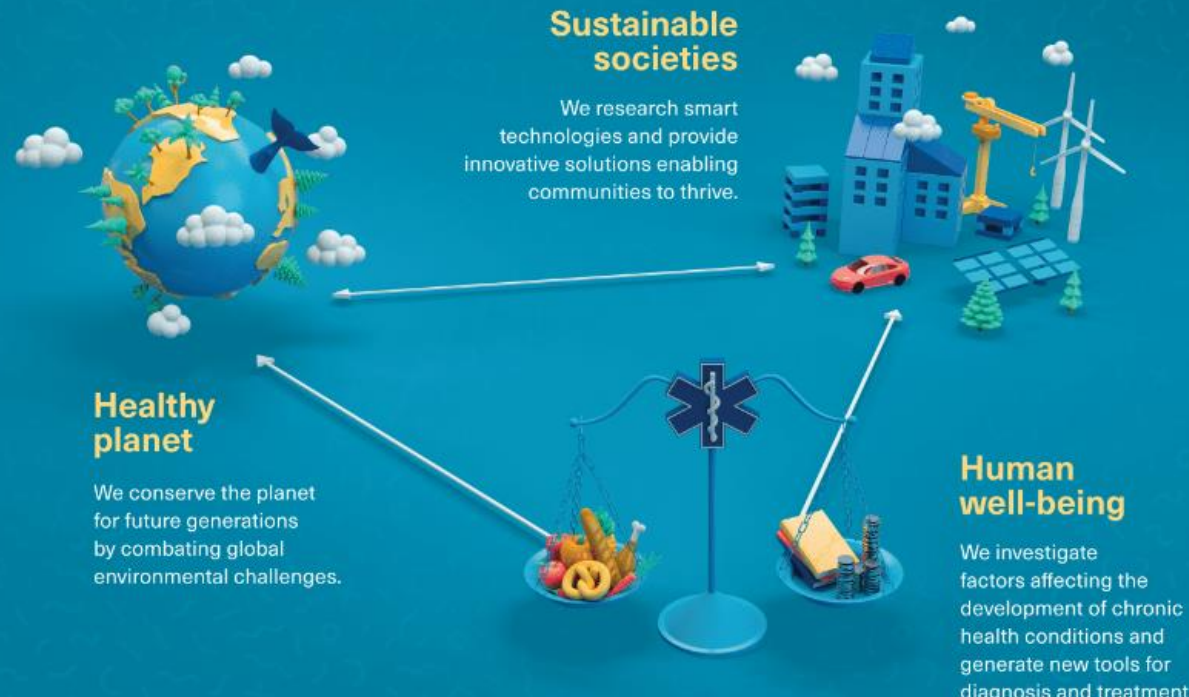
Mission

Building a healthy future
with environmental, economic
and social sustainability and
improved well-being.



This project has received funding
from the European Union's Horizon 2020
research and innovation programme under
grant agreement No 857560

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EU Centre of Excellence

CETOCOEN
Excellence

MUNI | ANUSA ICRC | UCL | ETH zürich | BBMRI-ERIC

Teaming for a healthy future

Mission
Building a healthy future with environmental, economic and social sustainability and improved well-being.

Sustainable societies
We research smart technologies and provide innovative solutions enabling communities to thrive.

Healthy planet
We conserve the planet for future generations by combating global environmental challenges.

Human well-being
We investigate factors affecting the development of chronic health conditions and generate new tools for diagnosis and treatment.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837560

recetox.muni.cz

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science

For many years we have studied the human impact on the environment. & now we also assess environmental impacts on human health. Our research infrastructure supports the international research community.

recetox.muni.cz

MUNI | RECETOX
education

We train the future generation of professionals and provide them the multi-disciplinary skills through education, research, policy and practice needed to address environmental health challenges.

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MUNI | RECETOX
application

We translate our research results to practical application and legislation. We transfer our knowledge to industry and government and inform regulatory decision-making processes to promote environmental, economic and social sustainability.

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MUNI | RECETOX
society

We contribute to improving the quality of life. We generate data and provide new tools, technologies and solutions to benefit the community and secure a stable and prosperous future.

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... for a healthy future

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Building community working together towards positive changes

Brno Living Lab

MUNI

FAKULTNÍ
NEMOČNICE
BRNO

FNUSA
ICRC

B | R | N | O |

jihořmoravský kraj

Partnership for a healthy future

We collaborate to build a community that works together towards a healthy future. We form research partnerships with academic institutions and university hospitals and reach out to local businesses, regional and state authorities to share knowledge. We engage with citizens and welcome them to join our community to co-create positive change.



This project has received funding
from the European Union's Horizon 2020
research and innovation programme under
grant agreement No 857560

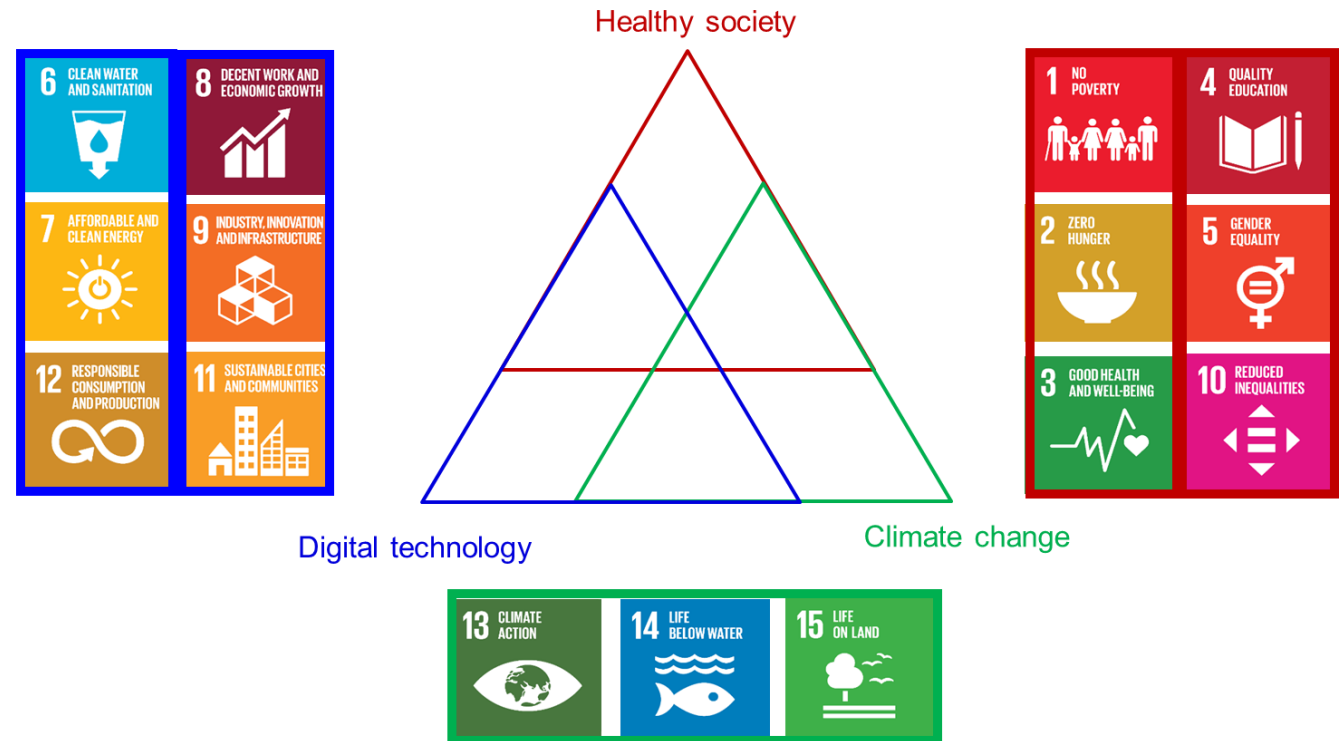
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Linking Research to Regional Innovation Strategies



Regional Innovation Strategy of South Moravia 2021-2027



HORIZON 2020 Co-Funds



science and policy
for a healthy future

SMURBS
SMART URBAN SOLUTIONS



The European
network
for observing
our changing
planet

iGOSP
ERA-PLANET

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HORIZON 2020 projects



science and policy
for a healthy future

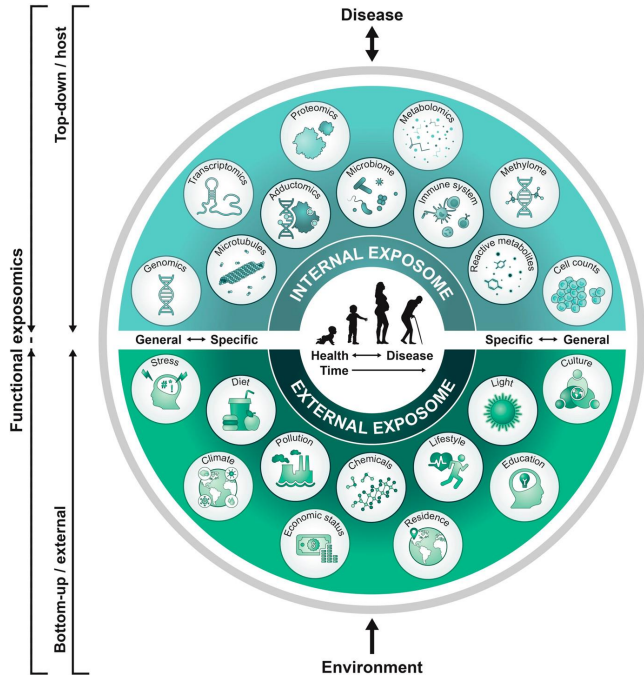


The European
network
for observing
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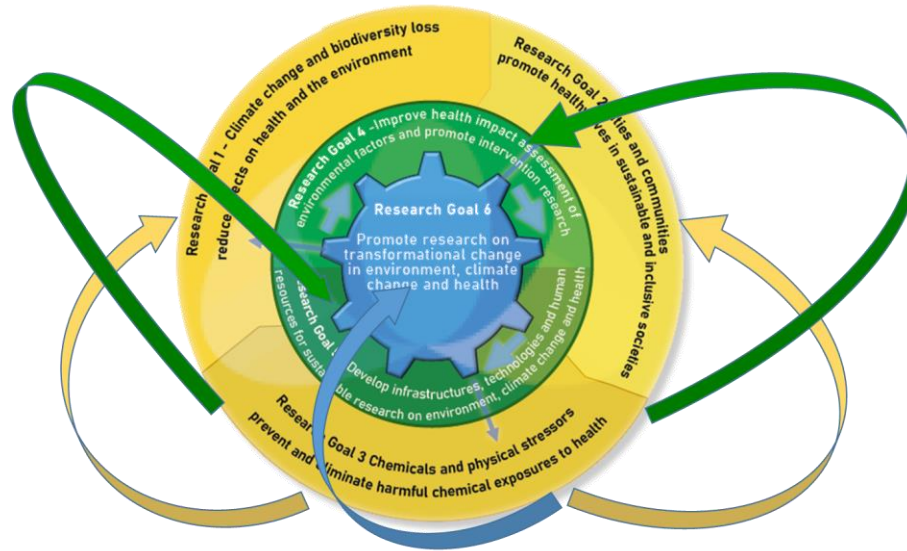
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Chemical exposomics is in a heart of the exposome research



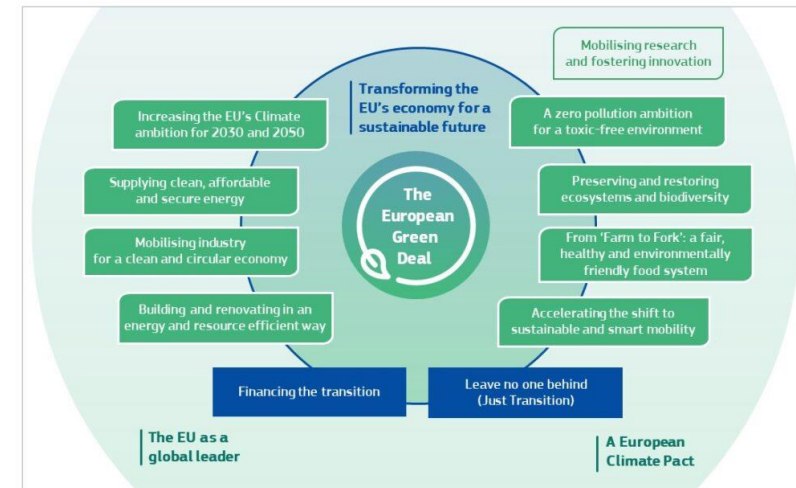
<https://doi.org/10.1021/acs.estlett.1c00648>

H2020 HERA: Chemical exposures are over-arching



Priority alignment

Instrumental for the Green Deal



Prioritised in the 2021 ESFRI Roadmap launched last December

EIRENE RI

Research Infrastructure for Environmental Exposure assessment in Europe

Website
pending

Headquarters
Masaryk University
Brno, Czech Republic

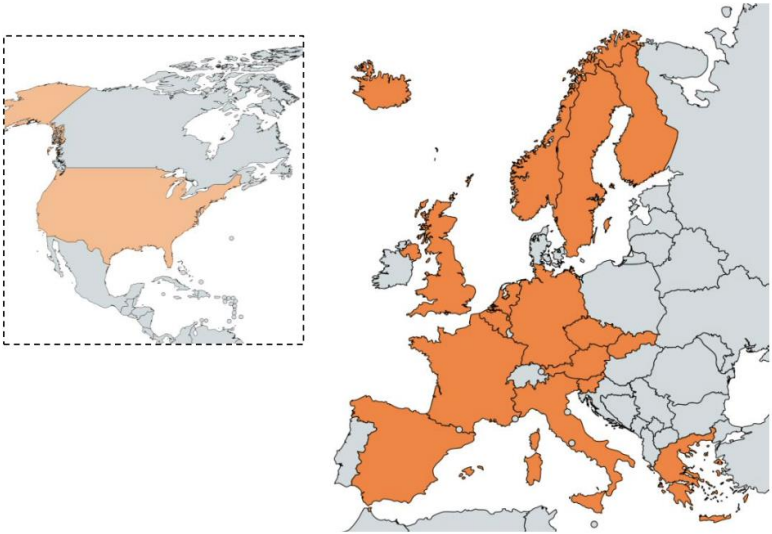
Legal status
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Type
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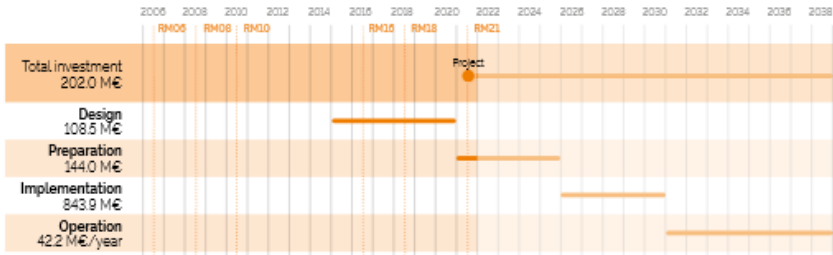
DESCRIPTION

The Research Infrastructure for Environmental Exposure assessment in Europe (EIRENE RI) pioneers the first European Research Infrastructure on environmental determinants of human health, the Human Exposome. EIRENE RI intends to support large-scale research for the interdisciplinary assessment of environmental determinants of health, including indoor and outdoor environment factors, lifestyle, socioeconomic, and the individual's ability to cope with various stressors such as infection or disease. EIRENE RI will provide harmonised workflows and integrated services for data and sample collection, as well as knowledge and tools that will be made accessible to academic researchers, private companies, public authorities and citizens through the EIRENE open-access system and the EIRENE knowledge hub.

The concept of a pan-European Infrastructure supporting research on the effects of long-term exposures to various types of stressors on population health and the roles these exposures play in the development of chronic diseases is based on ten-year experience of Czech national RECETOX RI. Entered in the ESFRI Roadmap 2021, EIRENE RI already connects 50 research institutions from 17 countries. It builds on the legacy of the European environmental monitoring networks and their databases (EMEP, GMP, GMOS), GEO Initiatives (GOS4POP and GOS4M) and related H2020 projects (ERA PLANET, e-SHAPE), EU biomonitoring initiatives (DEMOCOPHES, HBM4EU), UNEP/WHO global biomonitoring efforts, EU exposome (HELIX, EXPOSOMICS, HEALS and EHEN cluster) and other related projects (HERA, EURION cluster).



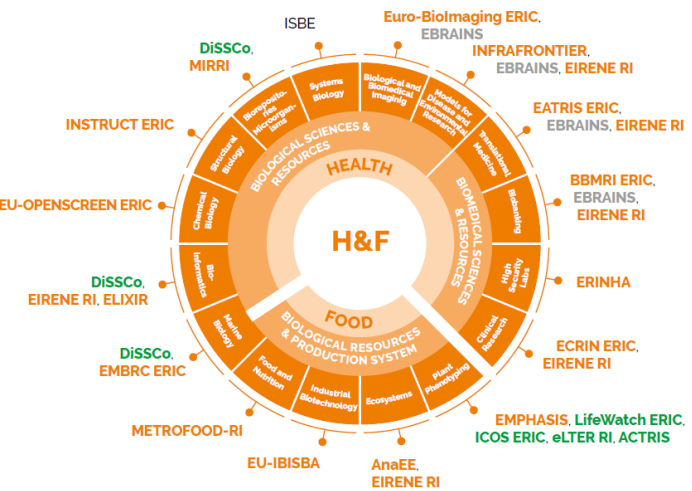
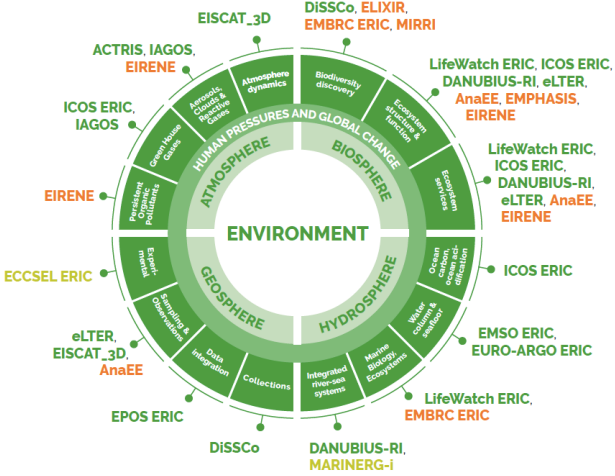
TIMELINE & ESTIMATED COSTS



INTERCONNECTIONS



POLITICAL SUPPORT



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Getting ready for the Horizon Europe Partnerships

EIRENE RI

Research Infrastructure for Environmental Exposure assessment in Europe

Website
pending

Headquarters
Masaryk University
Brno, Czech Republic

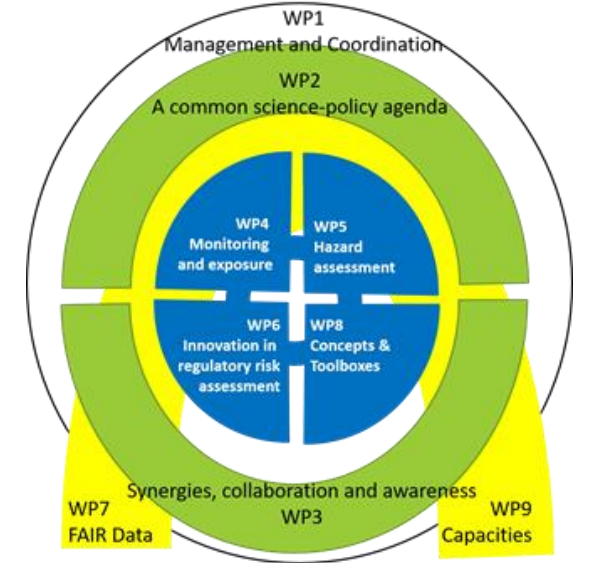
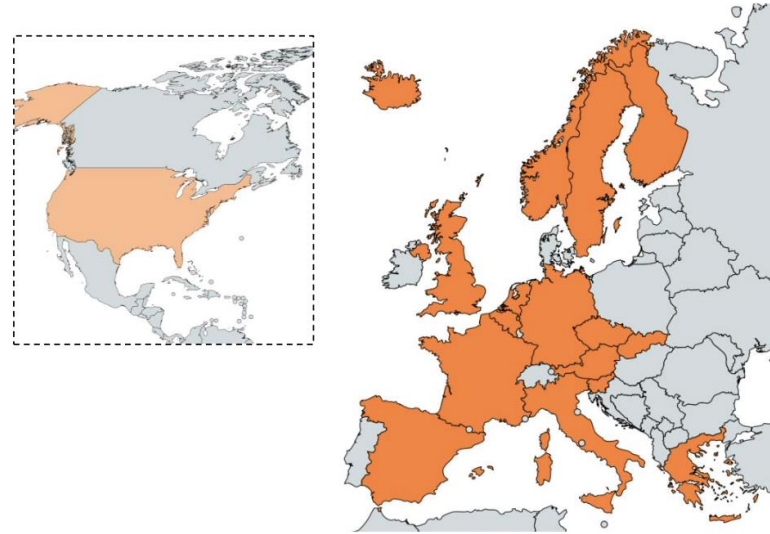
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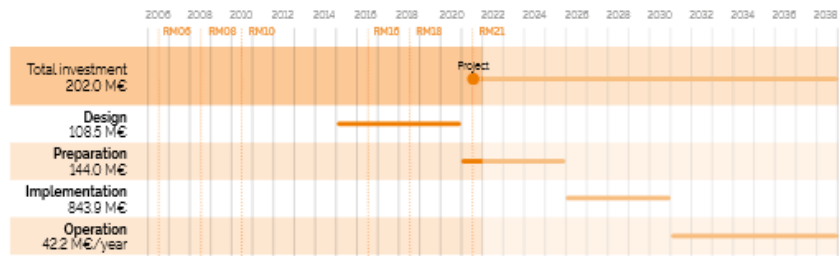
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TIMELINE & ESTIMATED COSTS



INTERCONNECTIONS

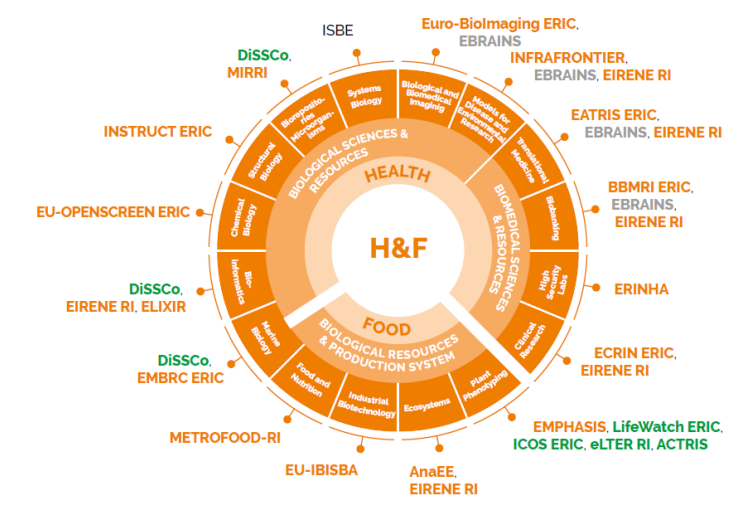
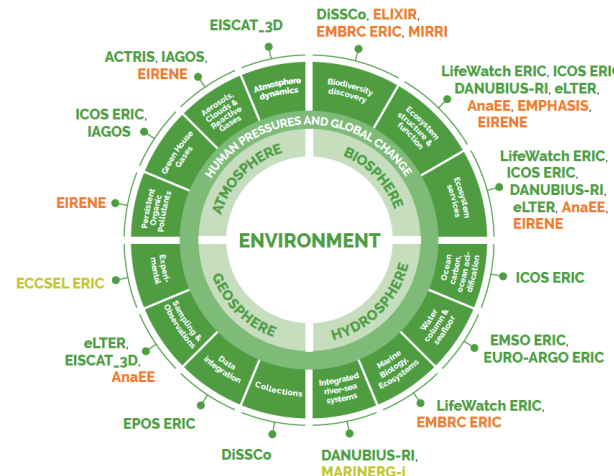


POLITICAL SUPPORT



Lead
CZ

Prospective member
AT, BE, DE, EL, ES, IS, IT, NL, SK



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October 2022

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history



culture



architecture



science

BRNO
city for life

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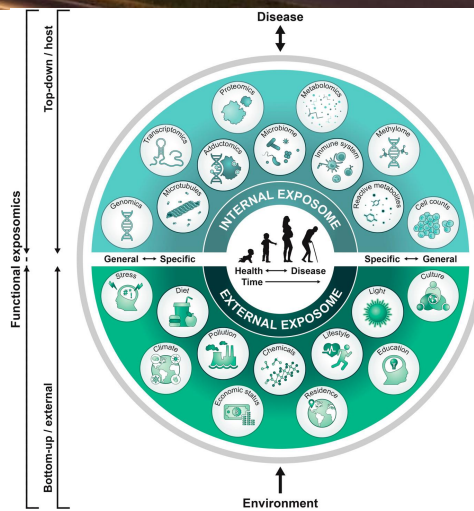
history



culture



architecture



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Thank you for your kind attention

kind attention

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jana.klanova@recetox.muni.cz
<https://www.recetox.muni.cz/en>

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