

RESEARCH NEEDS AND OPPORTUNITIES IN AFRICA

Jana Klánová on behalf of RECETOX and EIRENE



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40 years on the path towards a healthy future

MUNI | RECETOX
40
LET
YEARS

For four decades, the RECETOX Centre has studied the complex relationship between humans and the environment, building knowledge and understanding about the environmental and health risks posed by toxic substances to create a healthier, safer, and more sustainable future for all.



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MUNI | RECETOX 1983–1993

Pollution

The origins of RECETOX can be traced back to 1983 when the Faculty of Science established a Department of Environmental Protection. The department focused on the ecological impacts of human activities and the risks associated with environmental pollution. Quickly, the department developed partnerships with industrial entities and regions impacted by environmental pollution, building expertise in the assessment of environmental conditions and design strategies for improvement.

Since 1988, RECETOX has collaborated with the Czech Hydrometeorological Institute and, to this day, jointly conducts comprehensive environmental pollution monitoring at Kotelce. The collected data are used to model trends and anticipate risks effectively. Additionally, RECETOX initiated collaboration with the European Monitoring and Evaluation Programme, supporting the Convention on Long-range Transboundary Air Pollution by providing expert insights into air quality issues.



MUNI | RECETOX 1994–2003

Exposure, hazard, risk

RECETOX gradually broadened to encompass experimental ecotoxicology and the assessment of environmental and health risks, investigating the impact that pollution has on living organisms, with particular attention on endocrine-disrupting chemicals. During this period, RECETOX underwent three relocations across Masaryk University campuses, from Kotelce to Botanická and then Veselá streets, before finding its permanent home at the University Campus, Bohunice, in 2003.

RECETOX strengthened its collaborations with industry and specific regions, working on the identification of sources of persistent and toxic pollutants, studying their behavior and fate in the atmosphere, surface water, and soil, and evaluating the associated risks. Numerous sampling and analytical methods were developed to enable this research.



MUNI | RECETOX 2004–2013

Safety

During this period, participation in European framework programme projects, the implementation of the NICHESBIO research project and the first CETODODEN project, financed from the European Structural and Investment Funds, were instrumental in the development of RECETOX. These projects also contributed to establishing interdisciplinary teams with the Departments of Chemistry and Experimental Biology of the Faculty of Science and later with St. Anne's University Hospital.

Since 2005, RECETOX has organized an annual international summer school, a tradition that continues to this day. The National Centre for Toxic Substances, established in 2006, is a unit that continues to support the Czech government and operates in implementing international conventions on the protection of health from toxic substances. Plus, in 2006, RECETOX was designated as a Regional Centre for Capacity Building and Technology Transfer by the United Nations Environment Programme (UNEP).



MUNI | RECETOX 2014–2023

Human health

Environmental, social, and genetic factors collectively determine the health of individuals. Studying the complex interactions among these factors necessitates long-term population studies. A focus on assessing health impacts and risks associated with environmental exposures has driven the expansion into new research avenues, including the establishment of population studies and the development of laboratory and biobanking capacities.

We have established a biobank capable of preserving hundreds of thousands of biological samples. Further, we have successfully undertaken several significant European research endeavours, including Midwint projects such as TEAMBio, EKA Chair, and Twinning, coordinate the pan-European ESFRI Research Infrastructure EIRENE, and have been awarded with the designation as a World Health Organisation Collaborating Centre for Chemical Exposure and Risks.



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CETOCOEN
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BBMRI-ERIC

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 851565.

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Brno Living Lab

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BBMRI-ERIC

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.



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MUNI | RECETOX science

For many years we have studied the human impact on the environment, and vice versa, also assess environmental impact on human health. Our research also aims to support the international research community.



MUNI | RECETOX education

We have the future generation of professionals and provide them the interdisciplinary skills across education, research, policy and public communication for sustainable development and healthy lifestyles.



MUNI | RECETOX application

We translate our research results to practical application and regulatory decision-making in industry and government, and support regulatory decision-making processes by providing environmental, toxicological and social sustainability.



MUNI | RECETOX society

We contribute to improving the quality of life. We promote and support research and innovation in industry and government to develop the community of science, a stable and prosperous future.



RECETOX: STOCKHOLM CONVENTION REGIONAL CENTRE FOR CAPACITY BUILDING AND TECHNOLOGY TRANSFER

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Healthy planet

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

Sustainable societies

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

Human well-being

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

RECETOX: WHO- COLLABORATING CENTRE



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16.7 Environmental sciences

RECETOX Research Infrastructure



Accession:
RECETOX RI

Hosting Institution:
Masaryk University

Phase: construction

Character: single-site

Responsible person:
Prof. Jana Kůrková, Ph.D.
kuranova@recetox.muni.cz

Website:
old.recetox.muni.cz/index-en.php

Year of inclusion on the Czech Roadmap: 2010

Meta:
Science for a healthy future.

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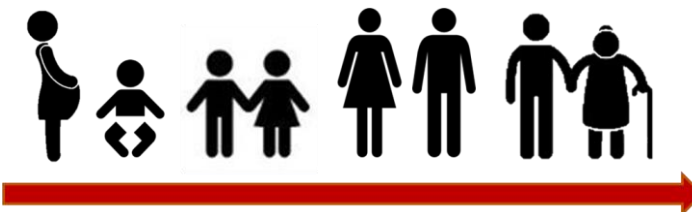
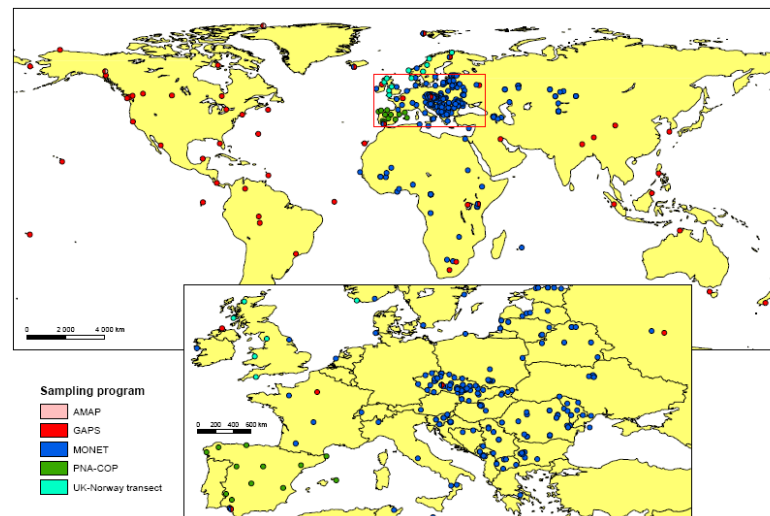
Characteristics

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 (MONET), population studies (CELSPAC), (Central European Longitudinal Study of Parents and Children), and related data sources. They allow for the presentation of real-time data through the (GENASIS) (Global Environmental Assessment and Information System) information platforms. The capacities for data analysis, interpretation and modelling 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 modernity 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 ECOS (European, Czech and Slovak Environmental Science), (GENASIS) (European Life-Science Infrastructure for Biological Information), and (MIRIS) (Molecular and Biomolecular Resources Infrastructure) European research infrastructures. It coordinates the (GENASIS) (European Environmental Exposure Assessment Network) project for the updated ESPRI Roadmap, and the (GEO) (Global Earth Observation) initiative (GEO) (Global Observation System for Persistent Organic Pollutants). It also contributes to the implementation and management of past European programmes such as (HUMAN) (Human Biomedical for Europe) and (PANEL) (European Network for Observing our Changing Planet).

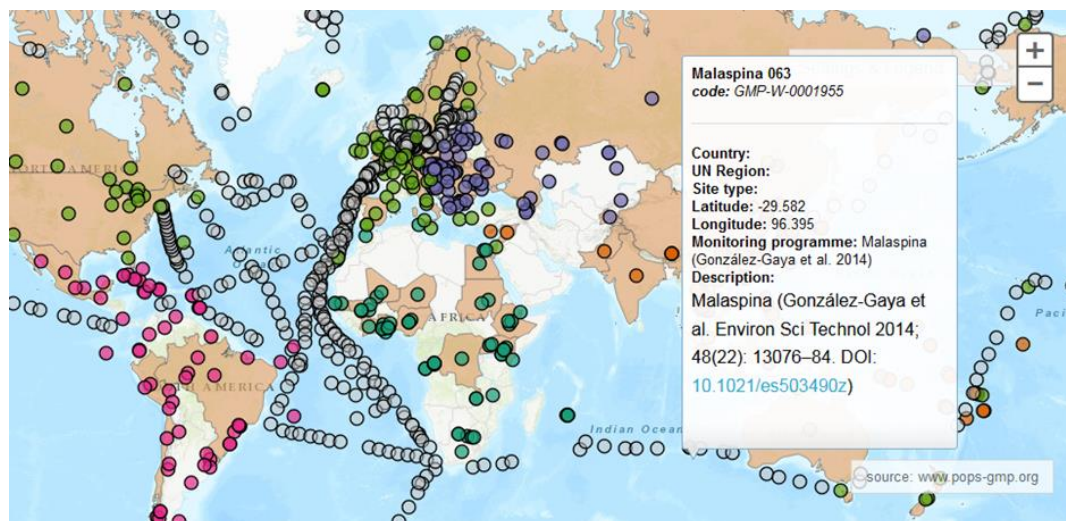
Socio-economic benefits

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 chemical mixtures, their health effects and most vulnerable populations. It explores the links between these environmental exposures and molecular genetic 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) (United Nations Environment Programme) and (WHO) (World Health Organization), and supports the implementation of the concept of a circular economy and healthy practices. It also provides university education and builds international capacities for assessing environmental exposures.

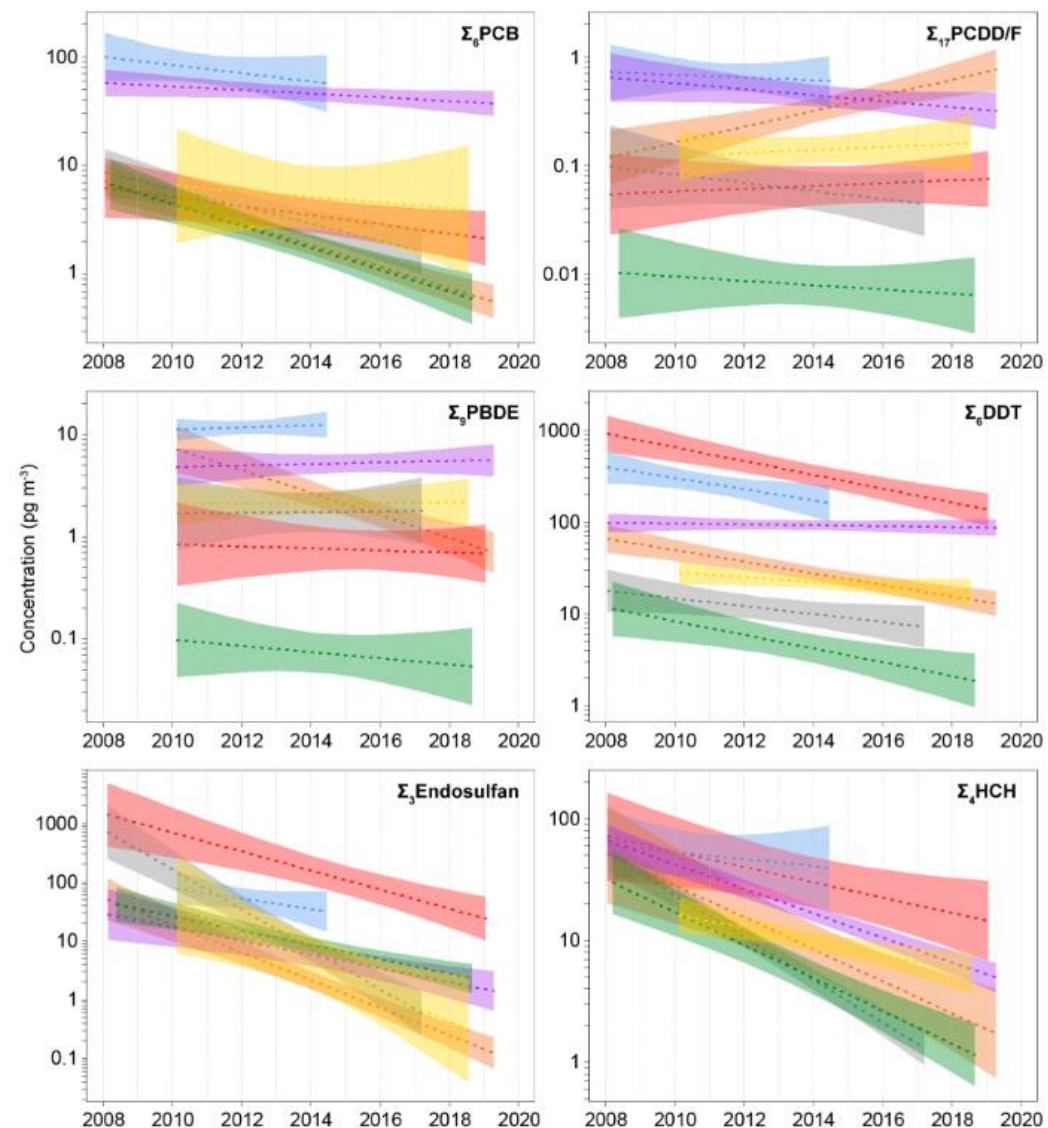
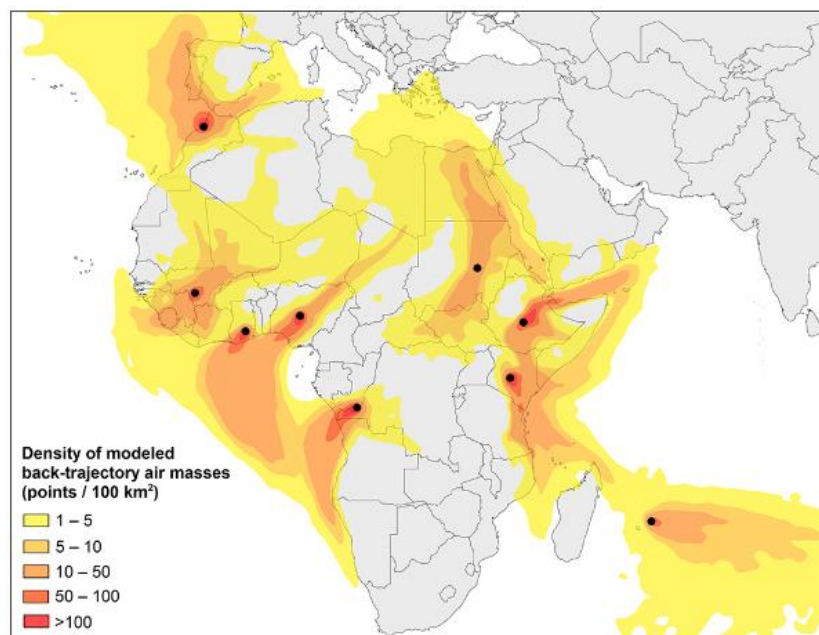
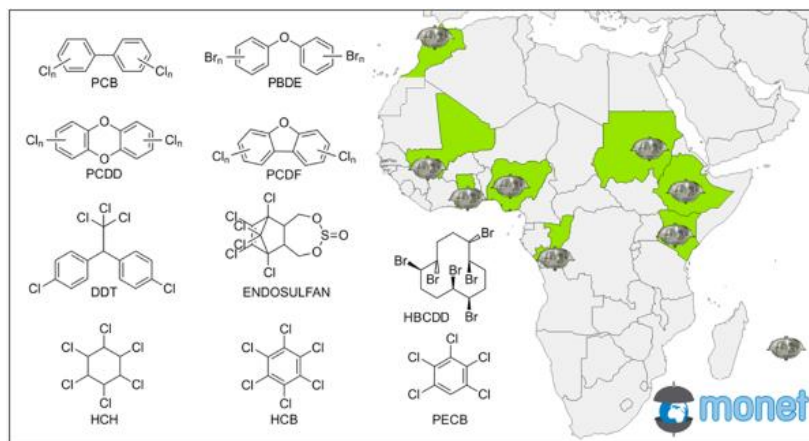
RECETOX RI in the national roadmap since 2012



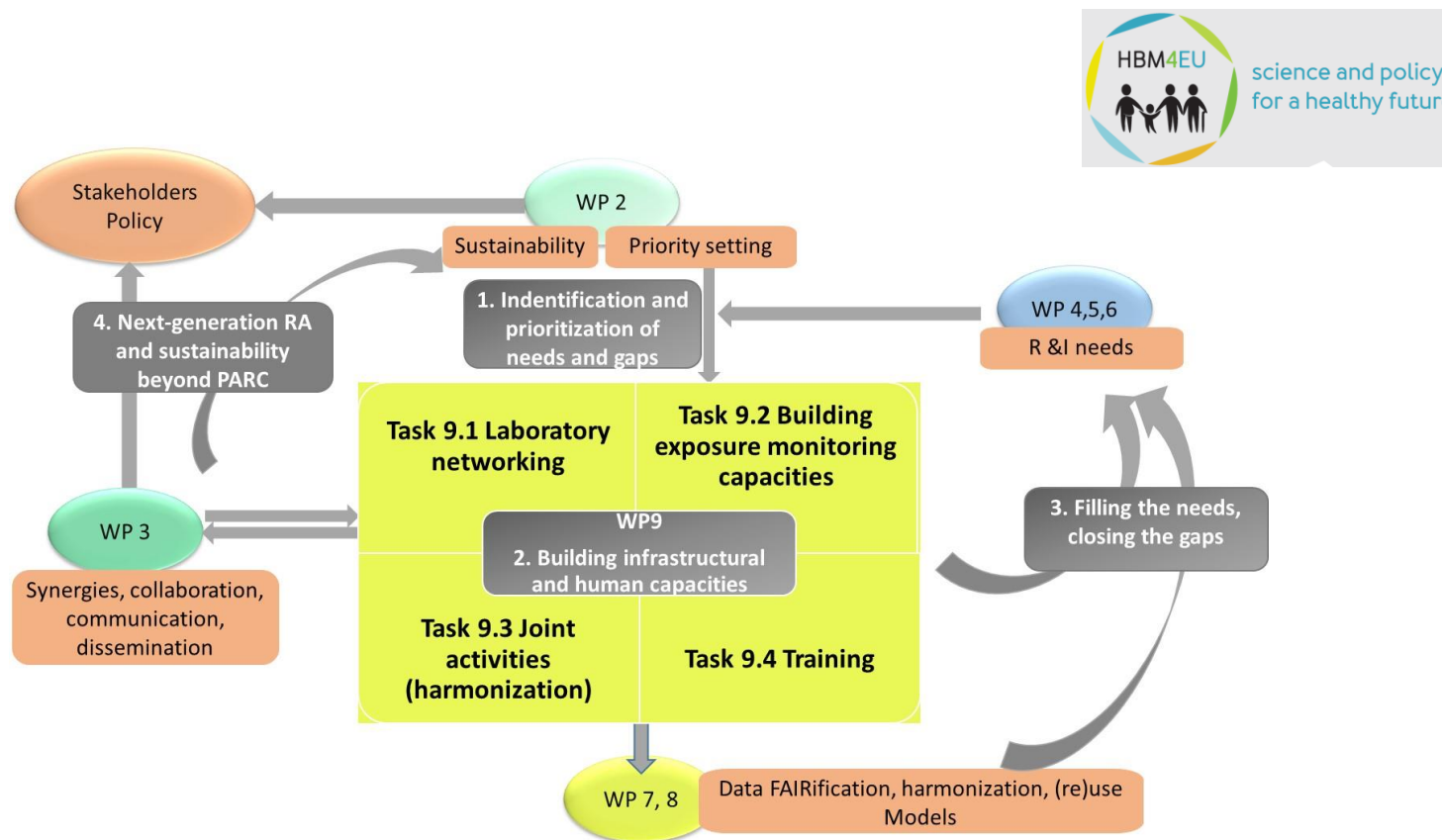
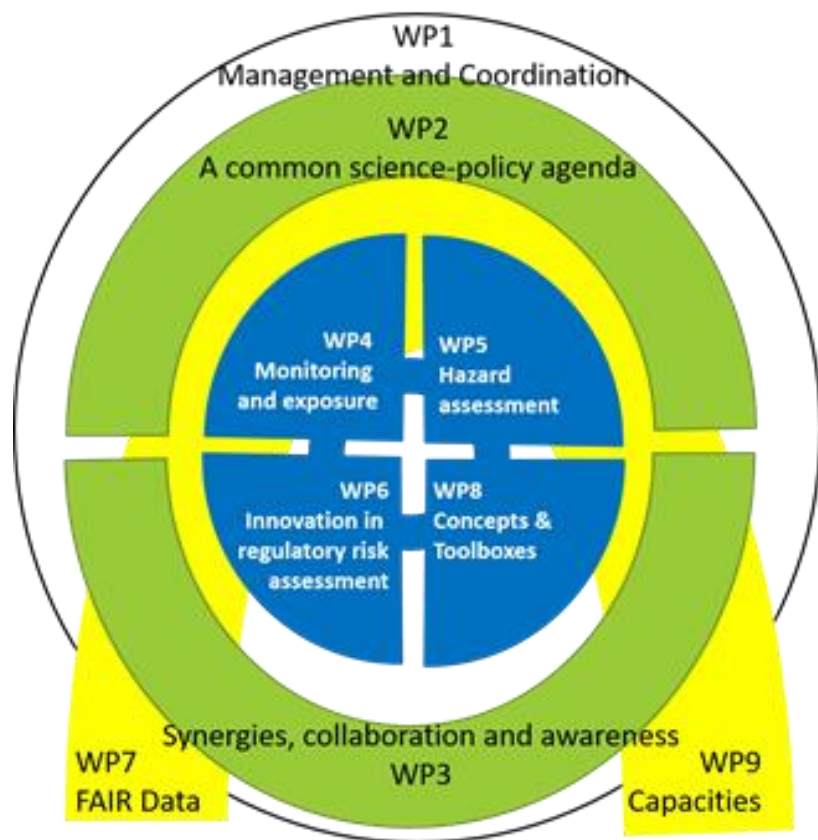
MONET monitoring networks
CELSPAC population studies
RECETOX accredited trace laboratories
GENASIS information platforms



Temporal Trends of Persistent Organic Pollutants across Africa



Partnership for Assessment of Risks from Chemicals (PARC)



VISION: Building infrastructural and human capacities in PARC



history



culture



architecture



science

BRNO
city for life

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