

UMWELT & GESUNDHEIT

04/2026

Final report

Assessment of the work of the international HBM network as well as event organisation

by:

Alexandra Polcher, Maren Krause
Ramboll Deutschland GmbH, Hamburg

publisher:

German Environment Agency

UMWELT & GESUNDHEIT 04/2026

Ressortforschungsplan of the Federal Ministry for the
Environment, Nature Conservation, Nuclear Safety and
Consumer Protection

Project No. (FKZ) 3720 61 202 0

Final report

Assessment of the work of the international HBM network as well as event organisation

by

Alexandra Polcher, Maren Krause
Ramboll Deutschland GmbH, Hamburg

On behalf of the German Environment Agency

Imprint

Publisher

Umweltbundesamt
Wörlitzer Platz 1
06844 Dessau-Roßlau
Tel: +49 340-2103-0
Fax: +49 340-2103-2285
buergerservice@uba.de
Internet: www.umweltbundesamt.de

Report performed by:

Ramboll Deutschland GmbH
Jürgen-Töpfer-Straße 48
22763 Hamburg
Germany

Report completed in:

June 2023

Edited by:

Section II 1.2 Toxicology, Health Related Environmental Monitoring
Philipp Weise

DOI:

<https://doi.org/10.60810/openumwelt-8877>

ISSN 1868-4340

Dessau-Roßlau, October 2026

The responsibility for the content of this publication lies with the author(s).

Abstract: Assessment of the work of the international HBM network as well as event organisation

The HBM4EU network brought together over 100 partner institutions from various European Union Member States, along with countries like Norway, Iceland, Israel, and Switzerland. To effectively manage this project, a governance structure was established which focused on establishing a science – policy interface. HBM4EU comprised 17 work packages, some of which closely collaborated with policymakers to prioritize chemicals and translate research into policy, while others engaged policymakers early in research to shape priorities. The project had varying degrees of success in its science-policy interface, with some aspects, like the laboratory network and prioritization processes, being deemed successful, while others required improvement, such as continuous dialogue with policy representatives and EU Commission involvement in sustainability. The involvement of different groups, such as the EU Policy Board, Stakeholder Forum, Advisory Board, and others, had both benefits and obstacles, including financial constraints and infrequent engagement. In summary, the HBM4EU project structure had strengths but improvement possibilities related to communication between pillars were reported. The Chemical Group Leaders faced challenges with answering policy questions but provided suggestions for improving collaboration and communication with stakeholders. The effectiveness and involvement of national hubs in the HBM4EU project varied across different countries. Most national hub contact points felt sufficiently informed about policy context and contributions. The success of national hubs depended on factors like existing structures, cooperation among stakeholders, funding, awareness, and political support. It could be concluded that HBM4EU had a positive impact on national activities in most countries, including expanding HBM programs, raising awareness, generating data, facilitating collaboration, and establishing national databases and monitoring activities. Various working methods were established on the national level to facilitate collaboration and information exchange.

Kurzbeschreibung: Bewertung der Arbeit des internationalen HBM-Netzwerks und Veranstaltungsorganisation

Das HBM4EU-Netzwerk brachte über 100 Partnereinrichtungen aus verschiedenen Mitgliedstaaten der Europäischen Union sowie aus Ländern wie Norwegen, Island, Israel und der Schweiz zusammen. Um dieses Projekt effektiv zu verwalten, wurde eine Leitungsstruktur eingerichtet, die sich auf die Schnittstelle zwischen Wissenschaft und Politik konzentrierte. HBM4EU umfasste 17 Arbeitspakete, von denen einige eng mit politischen Entscheidungsträgern*Entscheidungsträgerinnen zusammenarbeiteten, um Prioritäten für chemische Stoffe zu setzen und die Forschung in die Politik zu übertragen. Es zeigt sich, dass das Projekt an der Schnittstelle zwischen Wissenschaft und Politik unterschiedlich erfolgreich war. Einige Aspekte, wie das Labornetzwerk und die Priorisierungsprozesse, wurden als erfolgreich eingestuft, während andere Potential für Verbesserung hätten, wie der kontinuierliche Dialog mit der politischen Vertretung und die Einbeziehung der EU-Kommission in die Nachhaltigkeit. Die Einbeziehung verschiedener Gruppen, wie des EU Policy Board, des Stakeholder-Forums, des Beirats und anderer, hatte sowohl Vorteile als auch Hindernisse wie die finanzieller Beschränkungen und unregelmäßiger Beteiligung. Zusammenfassend lässt sich sagen, dass die HBM4EU-Projektstruktur Stärken aufwies, dass aber auch Verbesserungsmöglichkeiten in Bezug auf die Kommunikation zwischen den drei Hauptthemenbereichen festgestellt wurden. Die Leiter*innen der Chemiegruppen sahen sich mit Herausforderungen bei der Beantwortung politischer Fragen konfrontiert, machten jedoch Vorschläge zur Verbesserung der Zusammenarbeit und der Kommunikation mit den Beteiligten. Die Effektivität und Einbeziehung der nationalen Kontaktstellen in das HBM4EU-Projekt war in den einzelnen Ländern unterschiedlich. Die meisten nationalen Kontaktstellen fühlten sich ausreichend über den politischen Kontext und die Beiträge informiert. Der Erfolg der nationalen

Knotenpunkte hing von Faktoren wie den bestehenden Strukturen, der Zusammenarbeit zwischen den Beteiligten, der Finanzierung, dem Bewusstsein und der politischen Unterstützung ab. Es konnte festgestellt werden, dass HBM4EU in den meisten Ländern einen positiven Einfluss auf die nationalen Aktivitäten hatte, einschließlich der Ausweitung von HBM-Programmen, der Sensibilisierung, der Generierung von Daten, der Erleichterung der Zusammenarbeit und der Einrichtung nationaler Datenbanken und Überwachungsaktivitäten. Auf nationaler Ebene wurden verschiedene Arbeitsmethoden eingeführt, um die Zusammenarbeit und den Informationsaustausch zu erleichtern.

Table of content

List of figures	8
List of tables	8
List of abbreviations	9
Summary	10
Zusammenfassung.....	12
1 Background.....	15
2 Assessment of the HBM4EU network	17
2.1 Introduction	17
2.2 Work package leadership.....	18
2.2.1 The science - policy interface and its overall success	19
2.2.2 The influence of the policy component.....	20
2.2.3 Success elements and elements for improvement.....	21
2.2.4 Benefits and obstacles related to different groups	22
2.2.4.1 EU Policy Board.....	22
2.2.4.2 Stakeholder Forum	22
2.2.4.3 Advisory Board.....	22
2.2.5 The concept of three pillars	23
2.2.6 Work package teams.....	23
2.2.7 Financial planning of the work packages.....	25
2.2.8 Final remarks.....	26
2.3 Chemical group leadership	27
2.4 National hub involvement	28
3 Special issue of the HBM4EU key publications	33
4 Event organisation.....	35
4.1 Events 2020.....	35
4.2 Events 2021.....	36
4.3 Events 2022.....	37
A Appendix - conference flyer	39
B Appendix - conference program	40

List of figures

Figure 1:	HBM4EU governance structure.....	17
Figure 2:	Conference flyer	39
Figure 3:	Conference program	40

List of tables

Table 1:	Work packages of HBM4EU.....	18
Table 2:	WP members fulfilling their duties (based on feedback from WP leaders)	25
Table 3:	Events in 2020 and related tasks.....	35
Table 4:	Events in 2021 and related tasks.....	37
Table 5:	Events in 2022 and related tasks.....	37

List of abbreviations

HBM4EU	Project funded within Horizon 2020
UNEP	United Nations Environment Programme
IPCS	International Programme on Chemical Safety
SAICM	Strategic Approach to International Chemicals Management
EHP	European Environment and Health Process
POP	Persistent Organic Pollutant
PIC	Prior informed consent
HBM	Human Biomonitoring
ESBIO	Expert Team to Support Biomonitoring in Europe
COPHES	Consortium to Perform Human Biomonitoring on a European Scale
DEMOCOPHES	Demonstration of a Study to Coordinate and Perform Human Biomonitoring on a European Scale
PARC	European Partnership for the Assessment of Risks from Chemicals
WP	Work package
EEA	European Environment Agency
DF RTD	Directorate General for Research and Technological Development
EU	European Union
DG	Directorate General
EFSA	European Food Safety Authority
ECHA	European Chemicals Agency
QA/QC	Quality assurance / quality control
UBA	German Environment Agency
PM	Person month
CGL	Chemical group leader
NHCP	National Hub Contact point
NH	National Hub

Summary

The present report presents an assessment of the work of the international HBM network and summarises the support related to publishing a HBM4EU special issue focusing on presenting the key results of the network's achievements. It further summarises the work related to meeting organisation.

Assessment of the network

The HBM4EU network brought together over 100 partner institutions from 24 European Union Member States, as well as Norway, Iceland, Israel, and Switzerland. To successfully coordinate this project, a governance structure was established early on, comprising the Governing Board, Scientific and Administrative Management, National Hubs, Stakeholder Forum, Advisory Board, and Ethics Board. The Governing Board included program owners from participating countries and representatives from EU agencies, responsible for making key decisions. The Scientific and Administrative Management provided support to the Project Coordinator. The National Hubs coordinated national HBM activities and contributed to European objectives. The Stakeholder Forum involved external representatives in the prioritization process. The Advisory Board consisted of international HBM experts, and the Ethics Board provided guidance on ethical matters.

HBM4EU had 17 work packages, one of which focused on ethics. Work packages varied in their reliance on policy considerations. WP2 and WP4 collaborated with policy makers to prioritize chemicals and translate research into policy. WP5 and WP10 involved policy makers early in research to shape priorities and interpretation of findings. WP6 connected with policy makers to ensure the sustainability of HBM. WP8 aimed to support policy and understand exposure trends. WP9 had limited policy engagement, while WP16 sought innovative methods with strong policy influence.

The success of the science-policy interface varied. The laboratory network and mapping policy needs were deemed successful elements. A structured approach for prioritization and prospective policy inventory were also beneficial. Continuous and trust-based dialogue with policy representatives, resource allocation for policy scanning, increased EU Commission involvement in sustainability, and a clear policy definition were identified as areas for improvement.

The involvement of different groups had benefits and obstacles. The EU Policy Board ensured engagement and relevance to EU institutions. The Stakeholder Forum legitimized prioritization but faced financial constraints. The Advisory Board offered scientific expertise but engaged infrequently. Overall, these groups provided valuable contributions to the project.

The HBM4EU project organized its work packages into three pillars: Science to Policy, European HBM Platform, and Exposure and Health. Each pillar had a designated leader, offering a structured approach to project management. This structure facilitated collaboration and unity within each pillar, as well as the involvement of pillar representatives in strategic decision-making. However, communication between pillars was sometimes challenging, leading to siloed working. The concept of three pillars provided a clear framework for collaboration but required improvements in communication and interaction between pillars and work packages.

The project maintained continuity of staff, with some minor changes in personnel roles. Most key task leaders remained committed throughout the project. New partners joined smoothly, but a few faced challenges in adjusting to their roles. While occasional adjustments were made to the budget allocation, there were no major deviations from the financial planning. The EU Horizon

rules and procedures were seen as both rigid and manageable, with suggestions for streamlining and modernization.

The chemical group leaders (CGLs) faced challenges in addressing policy questions due to their broad and sometimes duplicative nature. The process of formulating these questions with the EU Policy Board and the interaction with policy makers had room for improvement. CGLs suggested opportunities for feedback, revision, and clarification of policy questions in collaboration with WP leaders, involving relevant project partners, and enhancing communication tools. They also recommended involving policy makers from the project's beginning and providing guidance for coordinating with WP and task leaders.

In summary, the HBM4EU project structure had its strengths but needed improved communication between pillars. The project maintained continuity despite minor personnel changes. Financial planning generally aligned with costs, and the EU Horizon rules were both complex and manageable. The CGLs faced challenges with policy questions but provided suggestions for improving collaboration and communication with stakeholders.

Involvement and effectiveness of national hubs varied across different countries within the HBM4EU project. While most national hub contact points felt sufficiently informed about policy context and contributions, there were exceptions. The success of national hubs depended on factors like existing structures, cooperation among stakeholders, funding, awareness, and political support. Involvement and information provided to national policy makers also varied. Factors that facilitated this process included reports, briefs, workshops, and collaboration with relevant agencies, while obstacles included COVID-19, lack of recognition or knowledge about HBM, and limited funding for dedicated programs.

HBM4EU had a positive impact on national activities regarding HBM in most countries, including expanding HBM programs, raising awareness, generating data, facilitating collaboration, and driving the establishment of national databases and monitoring activities.

Various working methods were established on the national level to facilitate collaboration and information exchange, including regular meetings, data sharing, and dissemination activities. The COVID-19 pandemic posed challenges to physical meetings, but electronic platforms were utilized. Funding, existing networks, and support from HBM4EU were mentioned as supporting factors, while obstacles included the lack of motivation, absence of dedicated funding, and the impact of COVID-19.

Special issue

The special issue comprises 25 articles and an editorial. It is available on [International Journal of Hygiene and Environmental Health | Special Issue: Key results of the European Human Biomonitoring Initiative - HBM4EU | ScienceDirect.com by Elsevier.](#)

Meeting organisation

During the project running time 11 meetings have been organised, mostly in hybrid format.

Zusammenfassung

Dieser Bericht enthält eine Bewertung der Arbeit des internationalen HBM-Netzes und fasst die Unterstützung für die Veröffentlichung einer HBM4EU-Sonderausgabe zusammen, die sich auf die wichtigsten Ergebnisse von HBM4EU konzentriert. Darüber hinaus wird die Unterstützung hinsichtlich Meetings und Konferenzen skizziert.

Bewertung des Netzwerks

Das HBM4EU-Netzwerk brachte mehr als 100 Partnereinrichtungen aus 24 Mitgliedstaaten der Europäischen Union sowie aus Norwegen, Island, Israel und der Schweiz zusammen. Um das Projekt erfolgreich zu koordinieren, wurde frühzeitig eine Leitungsstruktur eingerichtet, die aus dem Vorstand, dem wissenschaftlichen und administrativen Management, den nationalen Knotenpunkten, dem Stakeholder-Forum, dem Beirat und dem Ethikrat bestand. Dem Verwaltungsrat gehörten Programmverantwortliche aus den teilnehmenden Ländern und Vertreter*innen von EU-Agenturen an, die für wichtige Entscheidungen zuständig waren. Die wissenschaftliche und administrative Leitung unterstützte den Projektkoordinator. Die Nationalen Knotenpunkte koordinierten die nationalen HBM-Aktivitäten und trugen zur Erreichung der europäischen Ziele bei. Das Stakeholder-Forum bezog externe Experten*innen in den Prozess der Prioritätensetzung ein. Der Beirat setzte sich aus internationalen HBM-Experten zusammen, und der Ethikrat gab Ratschläge zu ethischen Fragen.

HBM4EU umfasste 17 Arbeitspakete, von denen sich eines auf ethische Fragen konzentrierte. Die Arbeitspakete unterschieden sich darin, dass sie sich auf politische Überlegungen stützten. WP2 und WP4 arbeiteten mit politischen Entscheidungsträgern*Entscheidungsträgerinnen zusammen, um Prioritäten für Chemikalien zu setzen und die Forschung in die Politik zu übertragen. WP5 und WP10 bezogen politische Entscheidungstragende frühzeitig in die Forschung ein, um die Prioritäten und die Interpretation der Ergebnisse zu gestalten. WP6 arbeitete mit politischen Entscheidungstragenden zusammen, um die Nachhaltigkeit des HBM zu gewährleisten. WP8 zielte darauf ab, die Politik zu unterstützen und Expositionstrends zu verstehen. WP9 hatte ein begrenztes politisches Engagement, während WP16 nach innovativen Methoden mit starker politischer Wirkung suchte.

Der Erfolg der Schnittstelle zwischen Wissenschaft und Politik war unterschiedlich. Das Labornetzwerk und die Kartierung des politischen Bedarfs wurden als erfolgreiche Elemente angesehen. Ein strukturierter Ansatz zur Festlegung von Prioritäten und eine vorausschauende politische Bestandsaufnahme waren ebenfalls von Vorteil. Ein kontinuierlicher und vertrauensvoller Dialog mit politischen Vertretern*Vertreterinnen, die Zuweisung von Ressourcen für das Politik-Scanning, eine stärkere Einbeziehung der EU-Kommission in die Nachhaltigkeit und eine klare Definition der Politik wurden als verbesserungsbedürftige Bereiche genannt.

Die Einbeziehung verschiedener Gruppen hatte sowohl Vorteile als auch Hindernisse. Der EU-Politikrat sorgte für Engagement und Relevanz für die EU-Institutionen. Das Stakeholder-Forum legitimierte die Festlegung von Prioritäten, hatte aber mit finanziellen Beschränkungen zu kämpfen. Das Beratungsgremium lieferte wissenschaftliches Fachwissen, wurde aber nur selten einbezogen. Insgesamt leisteten diese Gruppen wertvolle Beiträge zu dem Projekt.

Das HBM4EU-Projekt gliederte seine Arbeitspakete in drei Säulen: Wissenschaft und Politik, Europäische HBM-Plattform und Exposition und Gesundheit. Jede Säule hatte eine spezifische Leitung, was einen strukturierten Ansatz für das Projektmanagement ermöglichte. Diese Struktur erleichterte die Zusammenarbeit und den Zusammenhalt innerhalb der einzelnen Säulen sowie die Einbeziehung der Säulenvertreter*innen in die strategische

Entscheidungsfindung. Allerdings war die Kommunikation zwischen den Säulen manchmal schwierig, was zu einer isolierten Arbeit führte. Der Drei-Säulen-Ansatz bot einen klaren Rahmen für die Zusammenarbeit, erforderte jedoch Verbesserungen bei der Kommunikation und Interaktion zwischen den Säulen und Arbeitspaketen.

Im Rahmen des Projekts wurde die personelle Kontinuität gewahrt, wobei sich die Rollen der Mitarbeiter nur geringfügig änderten. Die meisten der Hauptverantwortlichen blieben während des gesamten Projekts engagiert. Die Aufnahme neuer Partner verlief reibungslos, doch einige hatten Schwierigkeiten, sich an ihre Rolle zu gewöhnen. Zwar wurden gelegentlich Anpassungen bei der Mittelzuweisung vorgenommen, doch gab es keine größeren Abweichungen vom Finanzplan. Die EU-Horizon-Vorschriften und -Verfahren wurden sowohl als starr als auch als überschaubar angesehen, wobei Vorschläge zur Straffung und Modernisierung gemacht wurden.

Die Leiter*innen der Chemiegruppen (CGLs) sahen sich bei der Behandlung politischer Fragen mit Herausforderungen konfrontiert, da diese breit gefächert und manchmal doppelt vorhanden waren. Der Prozess der Formulierung dieser Fragen mit dem EU Policy Board und die Interaktion mit den politischen Entscheidungsträgern*innen war verbesserungswürdig. Die CGLs schlugen Möglichkeiten für Feedback, Überarbeitung und Klärung der politischen Fragen in Zusammenarbeit mit der Leitung der Arbeitsgruppen, die Einbeziehung relevanter Projektpartner und die Verbesserung der Kommunikationsinstrumente vor. Sie empfahlen auch, die politischen Entscheidungstragenden von Anfang an in das Projekt einzubeziehen und Leitlinien für die Koordinierung mit den Arbeitsgruppen- und Aufgabenleitungen bereitzustellen.

Zusammenfassend lässt sich sagen, dass die HBM4EU-Projektstruktur ihre Stärken hatte, aber die Kommunikation zwischen den Säulen verbessert werden musste. Die Kontinuität des Projekts wurde trotz kleinerer personeller Veränderungen gewahrt. Die Finanzplanung stimmte im Allgemeinen mit den Kosten überein, und die EU-Horizont-Vorschriften waren sowohl komplex als auch handhabbar. Die CGLs sahen sich mit politischen Fragen konfrontiert, machten aber Vorschläge zur Verbesserung der Zusammenarbeit und der Kommunikation mit den Beteiligten.

Das Engagement und die Effektivität der nationalen Zentren variierten von Land zu Land im Rahmen des HBM4EU-Projekts. Während sich die meisten nationalen Kontaktstellen ausreichend über den politischen Kontext und die Beiträge informiert fühlten, gab es auch Ausnahmen. Der Erfolg der nationalen Knotenpunkte hing von Faktoren wie den bestehenden Strukturen, der Zusammenarbeit zwischen den Beteiligten, der Finanzierung, dem Bewusstsein und der politischen Unterstützung ab. Auch die Einbindung und Information der nationalen politischen Entscheidungsträger*innen war unterschiedlich. Zu den Faktoren, die diesen Prozess erleichterten, gehörten Berichte, Kurzdarstellungen, Workshops und die Zusammenarbeit mit den zuständigen Stellen, während zu den Hindernissen COVID-19, mangelnde Anerkennung oder fehlendes Wissen über HBM und begrenzte Mittel für spezielle Programme gehörten.

HBM4EU wirkte sich in den meisten Ländern positiv auf die nationalen HBM-Aktivitäten aus. Dazu gehörten die Ausweitung von HBM-Programmen, die Sensibilisierung, die Generierung von Daten, die Erleichterung der Zusammenarbeit und die Förderung der Einrichtung nationaler Datenbanken und Überwachungsaktivitäten.

Auf nationaler Ebene wurden verschiedene Arbeitsmethoden zur Erleichterung der Zusammenarbeit und des Informationsaustauschs eingeführt, darunter regelmäßige Treffen, Datenaustausch und Verbreitungsaktivitäten. Die COVID-19-Pandemie stellte eine Herausforderung für physische Treffen dar, aber es wurden elektronische Plattformen genutzt. Als unterstützende Faktoren wurden die Finanzierung, bestehende Netzwerke und die

Unterstützung durch HBM4EU genannt, während als Hindernisse die mangelnde Motivation, das Fehlen spezieller Mittel und die Auswirkungen von COVID-19 genannt wurden.

Sonderausgabe

Die Sonderausgabe umfasst 25 Artikel und einen Leitartikel. Sie ist verfügbar unter [International Journal of Hygiene and Environmental Health | Special Issue: Key results of the European Human Biomonitoring Initiative - HBM4EU | ScienceDirect.com by Elsevier.](#)

Organisation der Sitzungen

Während der Projektlaufzeit wurden 11 Sitzungen organisiert, die meisten davon im Hybridformat.

1 Background

Since the beginning of the 20th century, and especially since the 1950s, we have been witnessing a massive and sustained growth in global chemical production. Chemicals, with over 100,000 approved substances, are nowadays an essential part of daily life and play an increasingly important role in global economic development. Chemicals, along with natural products, are used as pharmaceuticals, pesticides, biocides, fertilizers, and industrial chemicals, and are found in countless products in various applications.

However, the benefits associated with the use of chemicals and chemical products can come with harmful effects on human health and the environment. Substances can enter the environment during their manufacturing, use, and waste phases and can be taken up by humans through inhalation, skin contact, or ingestion from air (outdoor and indoor air), drinking water, food, consumer products, or soil. Since the 1950s, a growing awareness has emerged, driven by a series of accidents and scandals, that chemicals and other environmental stressors can have a range of harmful effects on human health and reproductive capacity with acute or chronic exposure. Some of these environmental substances do not persist long in the environment, while others degrade very slowly (persist) or accumulate in the food chain (bioaccumulate). Certain chemicals are suspected of being carcinogenic, genotoxic, or fertility-damaging, or of disrupting the body's hormone balance. Bioaccumulation and persistence are feared because substances exhibiting these properties can cause problems for decades once they enter the environment.

To address the risks posed by substances in the workplace or the environment, various efforts have been made at the international, European, and national levels since the early 1970s to replace hazardous substances or significantly reduce their emissions into the environment. The most important international initiatives include the establishment of the United Nations Environment Programme (UNEP) in 1972, the International Programme on Chemical Safety (IPCS) in 1980, the International Conference on Environment and Development in Johannesburg in 1992, the Rotterdam Convention on the International Trade in Chemicals in 1998, the Stockholm Convention on Persistent Organic Pollutants in 2001, the Strategic Approach to International Chemicals Management (SAICM) in 2006, and the Minamata Convention in 2013. The European Environment and Health Process (EHP) of the World Health Organization is also important. At the European level, in addition to laws on air and water protection, particular mention should be made of the Chemicals Regulation (EC) No. 1907/2006 (REACH), which regulates the registration and authorization of chemicals, as well as PIC Regulation (EU) No. 649/2012 and POP Regulation (EC) No. 850/2004. Additionally, the regulations on plant protection products and biocides, cosmetics, or food and drug legislation are measures in which the legislator seeks to improve the protection of nature and health and which require bans or restrictions on use based on risk assessments.

However, one of the problems in this context is the lack of sufficient and suitable data for the risk assessment of many chemicals and the information on how a ban or restriction of use affects the level of exposure. While classical risk assessment relies mainly on animal experiments, in vitro studies, and in silico models, suitable data are particularly needed for determining population exposure assessment to verify the estimates from risk assessment.

Human Biomonitoring (HBM) is the only instrument to determine the current total body burden of environmental substances and is one of the tools to shed light on the causal chain between risks and possible health consequences. HBM measures the internal burden of the population or specific population groups with selected environmental pollutants and their temporal trends, thereby helping to determine whether and to what extent substances are taken up into the human body. The most important functions of HBM data are providing a database for legal

regulations to reduce and avoid pollutant exposure and monitoring the effectiveness of measures through the documentation of exposure trends.

In the field of environment and health, the central value of HBM has been recognized at the European level, and the need for harmonization, led to the development of pilot projects such as the Expert Team to Support Biomonitoring in Europe (ESBIO, 2005-2007), the Consortium to Perform Human Biomonitoring on a European Scale (COPHES), and the Demonstration of a Study to Coordinate and Perform Human Biomonitoring on a European Scale (DEMOCOPHES).

From 2017 – 2022, the German Environment Agency coordinated HBM4EU in which scientific organizations from 30 countries, together with European authorities, worked on the coordination and promotion of human biomonitoring in Europe under the Horizon 2020 program. HBM4EU provided insights into citizens' actual exposure to chemicals and their potential health effects to support policy-making. The HBM4EU initiative set up a novel collaboration between scientists, chemical risk assessors, and risk managers, involving several Commission services, EU agencies, and representatives at the national level. The project has bridged the gap between research and policy to bring societal benefits in the form of improved chemical safety (www.hbm4eu.eu). The established network, the fundamentals and legacies of HBM4EU will be maintained in the PACR Initiative.

The present project aimed to analyse various aspects of the network in order to contribute to the successful long-term establishment of the HBM network. Furthermore, various events were organised within the project which provided opportunities to strengthen the scientific and environmental policy representation and networking of Germany in the European HBM sector. By contributing to the permanent establishment of a European HBM network, the project directly supported a key task of the German Environment Agency, namely protecting people in Germany (and Europe) from environmentally related health risks.

2 Assessment of the HBM4EU network

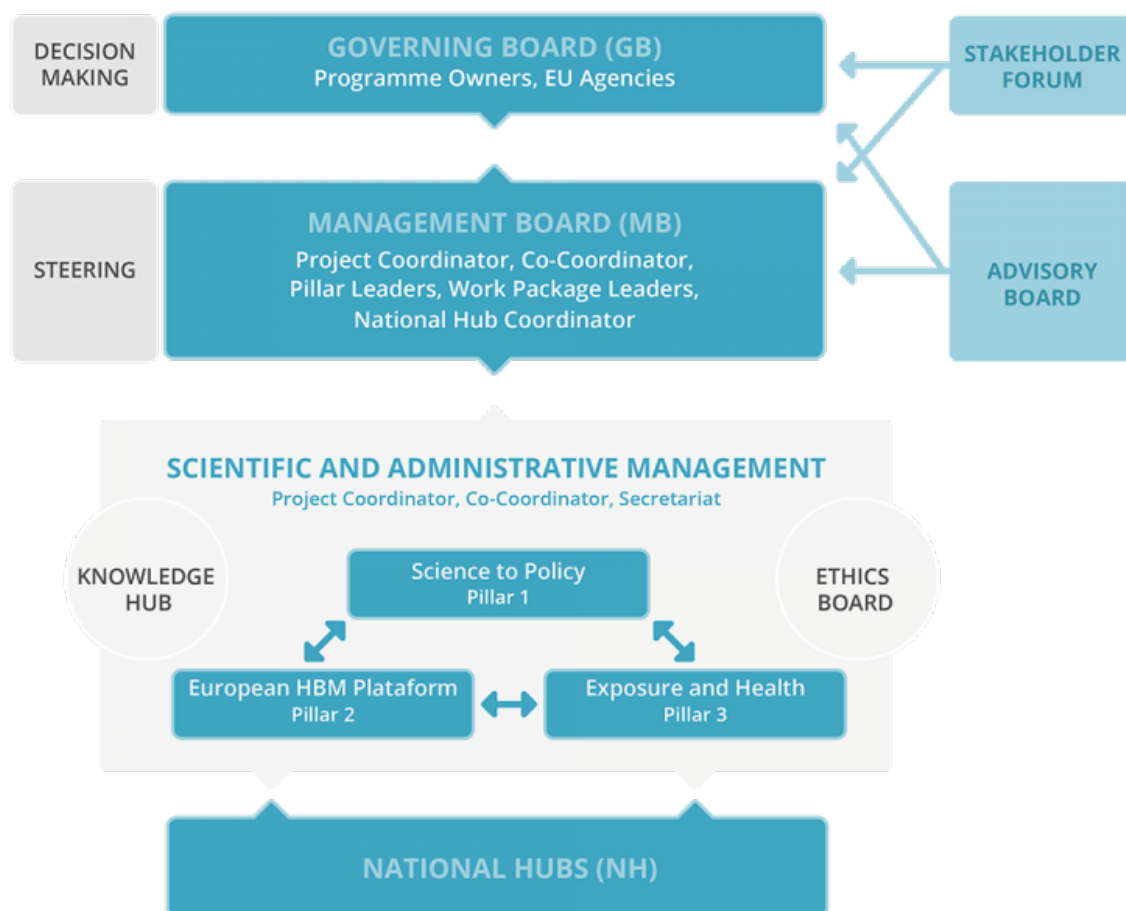
2.1 Introduction

HBM4EU brought together institutions from 24 European Union Member States as well as Norway, Iceland, Israel and Switzerland. This led to an overall number of over 100 partner institutions being involved in the project work.

In order to be able to coordinate and steer such a project successfully, a governance structure has been set up at an early stage of the project.

The governance structure is shown in the following figure.

Figure 1: HBM4EU governance structure



Source: www.hbm4eu.eu

The HBM4EU governance structure is comprised of several bodies, including the Governing Board, Scientific and Administrative Management, National Hubs, Stakeholder Forum, Advisory Board, and Ethics Board.

The Governing Board was made up of HBM4EU program owners from participating countries and representatives from the European Chemicals Agency, the European Environment Agency, and the European Food Safety Authority. The board took decisions.

The Scientific and Administrative Management provides support to the Project Coordinator through the Secretariat, Co-coordinator, and Management Board.

The National Hubs are a long-term network that brings together national HBM activities to ensure coordination, contribute to objectives, and learn from HBM4EU's work. The National Hubs also provide input on national needs into the European process. The list of National Hubs is available on: www.hbm4eu.eu.

The Stakeholder Forum includes representatives from outside the project who participate in the prioritization process and provide strategic input to enhance HBM4EU's accountability and credibility.

The Advisory Board is composed of international HBM experts who bring their knowledge and experience to the project.

Finally, the Ethics Board is made up of specialists in ethics and legal matters who provide guidance on ethical considerations within the project.

2.2 Work package leadership

HBM4EU comprised 17 work packages, one of which (WP3) was terminated prematurely. WP 17 focused solely on ethics requirements the project had to comply with. The following tables shows an overview.

Table 1: Work packages of HBM4EU

WP number	WP title
WP1	Programme management and coordination
WP2	Knowledge Hub
WP3	Internal Calls (ICs)
WP4	Prioritisation and input to the Annual Work Plan
WP5	Translation of results into policy
WP6	Sustainability and capacity building
WP7	Survey design and fieldwork preparation
WP8	Targeted field work surveys and alignment at EU level
WP9	Laboratory analysis and quality assurance
WP10	Data management and analysis
WP11	Linking HBM, health studies and registers
WP12	From HBM to exposure
WP13	Establishing exposure-health relationships
WP14	Effect biomarkers

WP number	WP title
WP15	Mixtures, HBM and human health risks
WP16	Emerging chemicals
WP17	Ethics requirements

After the end of HBMEU all work package leaders were asked to respond to a survey focusing on the science policy interface but also on the general structure, financial planning and the involvement of partners in the work packages. In the following responses from the work package leaders reflecting on the topics are summarised.

2.2.1 The science - policy interface and its overall success

Multiple work packages (WPs) were dedicated to fostering effective communication between the realms of science and policy.

Among these WPs, WP2 and WP4 were amongst others responsible for collaborating with policy makers. As the lead of WP4, the European Environment Agency (EEA) derived significant advantages from its status as an EU institution. This afforded the EEA privileged access to members of the EU policy board, establishing a foundation of trust. The EEA successfully engaged in the prioritization process of HBM4EU. The Directorate-General for Research and Technological Development (DG RTD) also played a crucial role by advocating for the active involvement of EU policy board members in the HBM4EU prioritization process. It is worth noting that different policy Directorates-General (DGs) held distinct priorities concerning the chemicals to be researched.

Conversely, WP2 focused on the translation of research findings into policy-relevant messages for policy makers. The EEA encountered however challenges when collaborating with researchers. Many researchers had difficulties to identify results pertinent to policy makers and effectively communicate them in non-technical terms. Recognizing the diverse array of stakeholders within the policy domain, including regulatory scientists at the European Food Safety Authority (EFSA) and the European Chemicals Agency (ECHA), as well as desk officers at the Directorates-General for Environment (DG ENV) and Health and Food Safety (SANTE), and high-level policy makers, it became evident that tailored communication products were required to address their specific information needs. Furthermore, when engaging with policy makers at the national level, translation into respective national languages might be warranted.

In the case of WP5, which entailed regular and structured communication with policy makers, primarily at the EU level, the science-policy interface proved highly functional. Various workshops were organized, fostering active input and coordination with policy makers throughout the project's duration and upon the availability of results.

WP6 revolved around sustainability and national hubs, establishing a robust link with policy makers. While certain desires for increased support and guidance from the Commission in devising governance solutions were expressed, progress was being made through ongoing discussions with the Directorate-General for Environment (DG ENV) concerning data and data generation.

WP7 primarily addressed the general design of HBM surveys, rendering the science-policy interface of limited importance within this particular WP. However, for the WPs that relied upon this interface, it was deemed successful and effective.

In WP8, the primary objective centred around developing a sampling framework for human samples, encompassing both the general population and occupational settings, with further stratification based on age and gender. A comprehensive understanding of policy requirements and future actions proved critical in ensuring the practical utility of the outputs for chemical regulation. It is important to underscore that the collaborative nature of the WPs was integral, as independent functioning would have been impracticable.

Although WP9 predominantly dealt with tools and infrastructure, it received favourable feedback from policy makers when necessary. The science-policy interface in WP9 was not as prominent compared to other WPs; nonetheless, the overall sentiment towards the project was positive, indicating the efficacy of the science-policy interface.

Within WP11, primarily focused on methodological aspects, the science-policy interface held minimal direct impact. Towards the project's conclusion, several review papers elucidating the public health impact of chemical exposures for selected diseases were prepared, garnering significant visibility within the scientific community. However, no specific science-policy endeavours were associated with these publications.

WP16 concentrated on innovative methodological approaches and medium-term outputs. While short-term expectations for direct science-policy impact were not easily attainable, there were indications of success, as evidenced by the significant interest displayed by policy makers in new screening methods, among other aspects.

2.2.2 The influence of the policy component

Within the HBM4EU project, various work packages (WPs) operated with differing degrees of dependence on the policy component.

WP2, specifically targeted policy makers with its knowledge outputs. The work heavily relied on the project team's understanding of the agencies involved, ensuring that the information was tailored to the needs and interests of the policy-making bodies.

WP4 engaged in an extensive consultation process involving multiple Directorates-General (DGs) and agencies. The objective was to prioritize chemicals for further research, and policy makers exerted significant influence in this regard. Their perspectives and input were carefully considered during the prioritization process.

For WP 5 and 10 policy makers predominantly provided steering and guidance at the beginning of the project, aiding in the formulation of priorities and policy-related questions. While the research conducted within the project remained independent, the early-stage results were communicated to policy makers to gather their insights and perspectives, particularly in terms of interpreting the findings and identifying policy options for their incorporation.

WP6 held great importance in terms of policy uptake, as the sustainability of HBM in Europe relied on policy makers recognizing the value and relevance of HBM data. Therefore, the influence of policy on this WP was considerable.

Conversely, WP7 was largely unaffected by the policy component, with minimal influence from policy makers throughout its implementation.

For WP8, the driving force behind the work was the need for data, whether to support policy and chemical management or to gain a deeper understanding of current exposure levels.

Additionally, the utilization of Human Biomonitoring (HBM) to assess trends and evaluate the impact of policies constituted an important aspect. While direct influence from policy makers may have been limited, the application of HBM to examine the effects of policy interventions on population exposure proved to be a powerful tool.

In the case of WP9, the policy component played a minimal role. However, it remained crucial to maintain an open platform and raise awareness among policy makers about the significance of consolidating the structures developed throughout the project.

WP16, similar to other WPs within HBM4EU, experienced a strong influence from the policy component. The project team actively integrated this driving force from the early stages until the project's completion. However, this integration resulted in a heightened pressure to deliver results, as the work lines explored new approaches and possessed an exploratory nature, still in development. Convincing advanced participants to share their knowledge at such an early stage within the context of a co-funded project required significant effort and collaboration.

Throughout the HBM4EU project, the relationship between science and policy was nuanced, with varying degrees of influence observed across the different work packages. Nonetheless, the project strived to effectively bridge the gap between these realms, recognizing the importance of informed policy-making based on robust scientific evidence.

2.2.3 Success elements and elements for improvement

In a formal assessment of the project, certain aspects are deemed suitable for reuse as follows:

- ▶ The laboratory network and the new paradigm in the design of Quality Assurance/Quality Control (QA/QC) programs should be reused. It is strongly recommended to adapt them in future projects and Human Biomonitoring (HBM) programs
- ▶ The strategy of mapping current policy needs (WP2) and using this information to inform all evidence-generating WPs is recognized as key to the success and impact of HBM4EU.
- ▶ Maintaining a structured approach for prioritization, including regular bimonthly meetings with the EU policy board, has proven beneficial and should be continued.
- ▶ Developing a prospective inventory of policy options for the uptake of results, including timelines for policy developments and identifying lead organizations, has been a valuable approach.
- ▶ Supporting policy objectives through research and maintaining a medium-term vision with exploratory research is considered important and should be upheld.

What should be improved:

- ▶ Although the science policy interface worked quite well, ensuring a trust-based, in-depth, and continuous dialogue with representatives of Directorates-General (DGs) and agencies can be further improved. Strengthening these communication channels will enhance the integration of scientific evidence into policy processes.
- ▶ There is a need to allocate sufficient resources and attention to scanning the policy and regulatory horizon continuously. This includes identifying opportunities to provide targeted input to policy processes, consultations, and developments in legislative and regulatory frameworks.

- ▶ The involvement of the Commission in sustainability should be increased, addressing any misunderstandings and fostering a more proactive engagement in sustainability-related matters.
- ▶ Maintaining a clear understanding of the definition of "policy" is important. Policy should encompass both immediate regulatory needs and long-term considerations, with research activities that can have mid-term impacts on policy outcomes.

Overall, the project has achieved positive outcomes, but maintaining the identified strengths, addressing the areas for improvement, and upholding a forward-looking perspective are crucial for future projects and the continued success of the science-policy interface.

2.2.4 Benefits and obstacles related to different groups

Benefits and obstacles of the involvement of the EU policy board, advisory board, and stakeholder forum can be summarized as follows:

2.2.4.1 EU Policy Board

Only benefits have been reported, namely:

- ▶ Ensured engagement with the project and made the results relevant to EU institutions.
- ▶ Provided input on policy needs at the EU level and work plans.
- ▶ Offered scrutiny and advice on how the data could be used.

2.2.4.2 Stakeholder Forum

As benefits the following has been mentioned:

- ▶ Provided input to the prioritization process, legitimizing it.
- ▶ Multiplied project messages when releasing information.

As an obstacle the limited engagement due to financial constraints has been indicated.

2.2.4.3 Advisory Board

Recognised benefits comprise:

- ▶ Offered scientific expertise.
- ▶ Provided targeted answers and constructive input to questions formulated by WP leaders.

Obstacles reported:

- ▶ Engaged only once a year, resulting in detachment from the project and difficulty in receiving concrete recommendations.

Overall, the involvement of these instances was beneficial, with each contributing valuable perspectives and roles. The EU policy board ensured relevant engagement and input from policy makers, the advisory board provided scientific expertise and targeted answers, and the stakeholder forum offered input in prioritization and dissemination. However, there were suggestions for improvement, such as more instrumental involvement of the policy board in suggesting governance processes and a need for a more scientific and medium-term vision from the advisory board. Despite these obstacles, the contributions of all three instances were considered valuable and useful to the project.

2.2.5 The concept of three pillars

The project's work packages were clustered into three pillars, namely: pillar 1 - science to policy, pillar 2 – the European HBM platform and pillar 3 – exposure and health. Each pillar was led by a pillar leader.

The concept of three pillars in the project had both benefits and obstacles. On the positive side, it provided a well-defined structure that made management easier. With three pillar leaders overseeing and coordinating the work, the workload was shared and there was a clear distribution of responsibilities. Each pillar leader had a comprehensive overview of their respective pillar, which facilitated the identification of connections and synergies between them.

One of the main benefits of the three-pillar approach was the fostering of collaboration within each pillar. The shared vision of the way forward created a sense of unity and teamwork.

Another advantage was the presence of three pillar representatives who provided strategic direction to the research within their respective pillars. This was considered to support the coordinating authority, UBA, with a second tier of authority in the project management. It ensured that different perspectives and expertise were considered in decision-making processes.

However, there were also obstacles to overcome. Communication between the pillars was not always smooth. This posed challenges in terms of information sharing and collaboration. Furthermore, the compartmentalization of work into pillars sometimes led to silo working, where one pillar was not fully aware of the activities and progress of the other pillars. This issue was partially addressed by having all Pillar and WP leads participate in the management board, facilitating communication and coordination. Nevertheless, it depends greatly on the engagement of each individual expert.

In terms of transparency, there were some difficulties in getting a comprehensive picture of all the activities organized within the pillars. This made it challenging for certain WPs, such as WP5 and WP2, to extract the impact of these activities for policy development.

Despite these obstacles, the concept of three pillars provided a clear structure that was beneficial for both internal and external stakeholders. It facilitated management and provided a framework for collaboration. However, improvements in communication, interaction between pillars and WPs, and transparency were identified as areas that could enhance the effectiveness of the approach.

2.2.6 Work package teams

In the context of a 5-year project, ensuring continuity of staff is crucial. When examining the personal roles and functions within the project's work package (WP), it was found that there were some changes over time. In certain teams, the composition was modified, but this did not pose significant issues since the individuals responsible remained in most cases the same.

Overall, there was a sense of continuity within the WPs, and new team members were successfully integrated into their respective teams. It was fortunate that most of the key task leaders remained committed to the project for the entire duration and even beyond. In cases where someone left the project, the country teams managed the transition, and it did not have a significant impact on the overall work. Within WP11, personnel remained consistent throughout the project period. However, partners faced challenges in finding sufficient time to dedicate to the WP tasks. This was mainly due to limited resources and the fact that personnel working part-time on the WP had other commitments. Balancing different projects and responsibilities posed occasional challenges. From the perspective of Pillar 1 and WP5, it was observed that

most activities and responsibilities were carried out as planned, despite occasional personnel changes. Most partners took ownership of their tasks, and over time, it became evident which scientists and partners were enthusiastic about working at the science-policy interface. Some partners displayed a more academic approach initially, but eventually, they recognized and appreciated the close connection between science and policy. WP5, which involved various partners and a sub-task on risk assessment, required a diverse range of expertise, with some partners being more experienced and others requiring capacity building. While there were some challenges in recruiting technical and scientific staff over multiple years, overall, these challenges were manageable, and no major issues arose in this regard.

In summary, while there were occasional changes in personnel roles and functions throughout the project, the overall continuity of staff was maintained, and the project successfully navigated these transitions. The dedication and commitment of key task leaders and partners played a significant role in ensuring the project's progress and achieving its objectives.

Throughout the course of the project, additional partners joined the consortium, bringing new expertise and perspectives to the work package (WP). The admission of new partners was generally smooth, with no significant difficulties encountered. However, there were a few exceptions and instances of partner termination.

In one specific case, a partner did not fulfil its duties. To resolve the issue, the task leader took on the work, effectively solving the problem. This highlights the importance of having flexible and proactive task leaders who can step in when necessary. In WP2, the initial approach involved involving partners from all countries to gather input on communication materials. However, it became apparent that several partners had limited expertise in communication and did not contribute effectively. As a result, the tasks were consolidated among a smaller number of partners with the appropriate expertise. This streamlining approach proved to be more efficient and enabled faster production of deliverables. In the case of WP8, a new task was added to the work package using protocols developed within the management board. While the process was slow, it was inclusive and rigorous, ultimately enhancing the HBM4EU project through the addition of the Moms Mercury study. Within WP11, some partners decided to withdraw after most of the operational work had been completed. Prior to leaving, they sought approval from the WP lead, which was granted. In general integrating new partners into the WPs proved sometimes challenging as the work had been planned and described in advance, specifically with relation to certain partners. Generating new duties for the new partners proved difficult, and their overall contribution ended up being limited. Also in the case of WP5, accommodating scientists from partner countries who joined in the later years of the project proved more difficult, as they did not have an active role within the WP.

Some partners reorganized their contributions in the project, reallocating resources to prioritize certain WPs over others. This flexibility, in most cases, proved advantageous for the overall progress of the project.

Overall, while there were some challenges and adjustments in partner composition within the WPs, the project successfully managed these changes, ensuring continuity and leveraging the expertise of the participating partners. The willingness to adapt and make necessary adjustments played a significant role in maintaining the project's progress and achieving its objectives.

The work package leaders were asked on how well partner in their work package fulfilled their roles. The responses are shown in the following table.

Table 2: WP members fulfilling their duties (based on feedback from WP leaders)

WP no.	Response to emails	On time delivery of material	Quality of contributions
WP 9	Low	Low	Low
WP 2 / WP 4	High	Low	Medium
WP 8	High	High	High
WP 11	High	High	High
WP 6	Medium	Medium	High
WP 7	High	Medium	Medium
WP 5 / WP 10	Medium	High	High
WP 16	High	High	High

2.2.7 Financial planning of the work packages

The achievement of core elements such as management, communication, analysis, and other essential components within the planned funding varied across the different responses provided.

In general, it was stated that the planned funding was sufficient to achieve the core elements of the project. Tight resource planning and efficient utilization of funds were highlighted as key factors in successfully delivering the desired outputs. The co-funding model, which involved both EU funding and contributions from participating partners, was considered effective in ensuring the project's financial viability. However, there were a few concerns raised regarding the payment and allocation of funds. One specific issue mentioned was the complexity and rigidity of EU rules governing fund transfers. This posed challenges, particularly in the case of analysis payments. The inflexibility of these rules required careful management and coordination to ensure proper financial disbursement. In one response, it was mentioned that the full cost of the project could not be covered, suggesting that some of the actual costs were not declared or accounted for. This points to the complexity and intricacies of financial planning and implementation in large-scale projects. Overall, the project teams acknowledged the importance of careful financial planning and resource allocation. Flexibility was welcomed in order to adapt and adjust resource distribution between different work packages when necessary. However, it was also recognized that the financial aspects of such a large project present significant challenges, requiring dedicated staff with expertise in financial management to effectively handle the complex legal, technical, and informational requirements associated with funding.

In conclusion, while the achievement of core elements within the planned funding was generally deemed possible, there were complexities and considerations related to financial management and fund allocation that required careful attention throughout the project.

Overall, the responses indicate that there were limited instances where the financial planning deviated significantly from the actual costs in the project. Most participants did not report any significant deviations between the planned and actual costs. However, in a few cases, adjustments were made to the budget allocation based on evolving needs and opportunities. For example, in WP2, the budget allocated for communication was increased towards the end of the project to accommodate the increased opportunities to disseminate and communicate the

project's results effectively. In WP8, the financial planning was based on optimized sample numbers that had to align with the available funding. While it was acknowledged that exploring the financial aspect of sample numbers was challenging, no significant deviations from the planned costs were mentioned.

There were a couple of specific observations related to resource allocation. In one case, the resources allocated for chemical group leaders were initially underestimated, as the level of involvement required from them became clearer over time. The ones who performed well required more resources than initially planned. Additionally, it was mentioned that more budget and resources could have been allocated to the work of the national hubs and regional meetings to discuss project results at the end. The perception of some research teams was that their investment in the project exceeded the actual funding received, which presented management challenges in maintaining team cohesion and motivation.

In summary, while there were some minor adjustments and observations regarding resource allocation and needs, there were no major deviations from the financial planning. The overall sentiment expressed was that managing the financial aspects of a large-scale project with complex funding requirements is demanding, and there may be instances where resource allocation could have been better optimized to ensure greater satisfaction and adherence among participating teams.

The experiences with the EU Horizon rules and procedures in the project varied among the participants. Some expressed that the rules were rigid, complicated, and created challenges in the distribution of funds. The use of PM cost as a basis for payments was seen as unfair due to the significant differences in PM cost across partners. This sometimes resulted in a lack of clear correlation between the quality of work and the funds received by certain partners.

However, other participants found the procedures to be manageable and not overly burdensome considering the overall volume of public funds involved in the project. They acknowledged the need for extensive accounting rules to ensure transparency and auditability. Yet, there were suggestions to streamline the reporting process, as there was a perceived redundancy with multiple levels of reporting at the WP, Grant Signatory, and project levels. Some participants highlighted the bureaucratic nature of the EU Horizon procedures and emphasized the importance of dedicated personnel to address administrative issues. Having sufficient support from the HBM4EU secretariat was noted as beneficial in effectively managing the Horizon procedures.

Nevertheless, there were concerns about the administrative workload for partners, particularly in relation to financial rules for co-financing. These rules were seen as major obstacles in organizing fieldwork and lab work efficiently. Some participants suggested simplification and modernization of the internal reporting processes.

In summary, while there were mixed experiences with the EU Horizon rules and procedures, there were common suggestions for simplification, streamlining, and modernization to alleviate administrative burdens and ensure a fair and efficient distribution of funds.

2.2.8 Final remarks

All WP leaders were asked for a final remark and stated that the partners in the project exhibited significant differences in their performance and level of collaboration. Some partners demonstrated high-level activity and effective communication, while others maintained minimal collaboration and were difficult to contact. Despite this variation, the overall satisfaction with the team was positive.

The management of such a large project posed numerous obstacles, particularly in financial forward planning. The project was constrained by EU rules on Person Months, and there was a need to ensure a fair distribution of funds based on expertise and partner country infrastructure. It was suggested that the initial distribution method should be reconsidered to address these concerns. There was a desire for more financial flexibility among partners, allowing for resource reallocation between different employees or between personnel and direct costs. The suggestion was made to hold each partner financially responsible for their allocated budget, which would have enhanced project efficiency and ensured the planned utilization of all resources from the beginning. Apart from the aspects for improvement HBM4EU was deemed an enormous success, with ongoing outputs and publications resulting from the hard work. The contributions of the HBM4EU secretariat and the project coordinator were highly valued, as their tremendous efforts were crucial in achieving the project's positive outcomes.

2.3 Chemical group leadership

For the substances prioritised within HBM4EU, dedicated chemical groups have been set up in order to answer the defined policy questions. The leader of each chemical group has been approached with some specific questions in particular to the policy interface.

There was a desire to have the opportunity to revise policy questions during the project, as it was recognized that some questions were duplicates or parts of the same question. The ability to revise and clarify these questions within the project would have streamlined reporting and summarizing activities. The policy questions in HBM4EU were considered too broad to be fully addressed within the project's scope and time limit. It was acknowledged that the formulation of these questions was originally done by the EU Policy Board, and it was not clear whether they could be adapted or if only answers were expected.

In hindsight, it was suggested that discussing and adapting the policy questions with the EU Policy Board at mid-term would have been beneficial. Specifically for the substance group "chemicals of emerging concern," the policy questions were formulated at a strategic level. From the beginning, it was understood that only partial answers to these questions would be provided.

Coordination with policy makers during the setup of the policy questions was not always applicable. Sometimes the CGL was not involved in the initial stage and received delayed and sporadic feedback on the policy questions. It has been seen beneficial that the scientist working on the policy questions is also experiences in policy making. In another WP, the CGL had meetings with DG Sanco and EFSA to clarify the reasons for prioritized substances and shared policy questions and ongoing results with EFSA. It has been stated that there were some comments received from the EU Commission and EU agencies on the annual work plan, but there was no opportunity for a participant, who was not part of the Management Board, to discuss and refine the questions with the policy board based on these comments. It was also challenging to propose additional activities to answer the questions or obtain commitment to carry them out. It became evident that agencies and policy makers were interested in the topic and desired progress but were uncertain about the necessary steps to take.

For most of the chemical groups the policy questions could be answered only partially. In a next project related to policy responses for specific chemicals, the following improvements were suggested by the respondents:

- ▶ Provide opportunities for feedback, revision, and clarification of policy questions in collaboration with WP leaders. Ensure that policy questions are aligned with relevant planned work and avoid duplicates.
- ▶ Involve interested project partners and allocate necessary resources.
- ▶ Improve the structure of interaction between WPs and coordinators, such as creating a website for sharing results, comments, and questions. Enhance the description of coordinator roles and provide better access to relevant information.
- ▶ Establish a clear, rapid, and easy process for individual data sharing.
- ▶ Encourage aligned studies to follow harmonized protocols.
- ▶ Facilitate dialogue between policy makers/regulators and project participants through workshops. Provide guidance and formalized formats for coordinating with WP and task leaders. Organize CGL meetings to discuss issues, draw conclusions, and share experiences.
- ▶ Involve stakeholders from the beginning of the project.
- ▶ Improve communication tools for the general population.
- ▶ Invest in high-quality materials that can serve as a foundation for future endeavours.
- ▶ Engage policy makers for input on potential sources of specific chemicals and address their scientific questions related to effective regulation and implementation of measures.

Although the CGL concept was considered to be a good one within the project, as major challenge has been considered to be the fact that some of the CGLs were also MB members, and others were not. If WP leaders do not involve/update CGLs, then having CGLs also in the MB is seen as useful. The CGLs who were not also MB members were at a disadvantage.

Overall, the suggestions aim to enhance collaboration, streamline information sharing, involve relevant stakeholders, and improve the effectiveness of policy responses to specific chemicals.

2.4 National hub involvement

All national hub contact points were asked if they felt sufficiently informed about the policy context and your potential contribution. 11 of 14 NHCPs replied with yes, while the other three did not feel sufficiently informed. While the majority of the NHCP confirmed that the policy questions addressed in the project reflected the policy needs at your national level, two of the three NHCP, which indicated insufficient information earlier could not confirm this point.

The concept of national hubs varied in its effectiveness across different countries.

1. Austria: The concept of a national hub worked well, building upon already established structures.
2. Belgium: The national hub in Belgium worked very well, with good cooperation among policy makers and stakeholders.
3. Croatia: Communication with members of the national hub in Croatia was less productive than expected, despite involvement from the Ministry of Health.
4. Estonia: Estonia joined the project at its final stages, and the national hub is not yet finalized.
5. Hungary: The national hub in Hungary was small, involving only a few institutes affected by the topic.

6. Iceland: The national hub in Iceland worked well, integrating an HBM component into their National Nutrition Survey and facilitating collaboration among domestic partners.
7. North Macedonia: Introducing the concept of a national hub was a challenge due to the lack of political support and experience in HBM studies.
8. Norway: Sharing information within the national hub in Norway was effective, but long-term funding for the biomonitoring program remained an obstacle.
9. Portugal: The national hub in Portugal performed well, participating in studies and dissemination activities. Obstacles included limited awareness, dispersion of analytical capacity, and absence of dedicated funding.
10. Slovakia: The national hub in Slovakia collaborated effectively with relevant organizations, facing limitations due to COVID-19.
11. Slovenia: Cooperation within the national hub worked for parties interested in performing HBM but encountered obstacles with politics and NGOs. Permanent governmental financing and lacking policy were the main challenges.
12. Sweden: The existing network within the national human biomonitoring program supported the effectiveness of the national hub. Challenges included involving ministries and coordinating responsibilities across different sectors.
13. Switzerland: Communication between national partners in Switzerland was not working well due to various factors.

Overall, the success of national hubs depended on factors such as existing structures, cooperation among stakeholders, funding, awareness, political support, and effective communication.

The involvement and information provided to national policy makers varied also across countries.

- ▶ Austria: Policy makers were well informed and involved, with a national report on human biomonitoring presented and welcomed by all political parties.
- ▶ Belgium: National policy makers in Belgium were well informed and involved, supported by policy briefs and indicator leaflets.
- ▶ Croatia: Cross-government collaboration and challenges linking environmental data with exposure measurements were obstacles to informing and involving policy makers.
- ▶ Estonia: COVID-19 was an obstacle, but policy makers were involved in the process of determining markers for measuring specific impacts.
- ▶ Hungary: An international conference was organized to discuss HBM-related topics, and national policy makers will be informed about the project's outputs in the near future.
- ▶ Iceland: COVID-19 was an obstacle, but stakeholders were informed of publications electronically.
- ▶ North Macedonia: National policymakers did not recognize the importance of HBM programs, possibly due to insufficient information and knowledge, as well as the impact of COVID-19.
- ▶ Norway: Policy makers were members of the hub and informed through meetings and newsletters. Communication materials from HBM4EU were well received.

- ▶ Portugal: Reaching policy makers was a major challenge, and various strategies were used, including workshops, awareness campaigns, citizen questionnaires, and institutional protocols. The absence of a dedicated HBM program with funding hindered efforts.
- ▶ Slovakia: As national policy makers, they were well informed and involved, and the Ministry of Health accepted their draft version for adapting human biomonitoring in the country.
- ▶ Slovenia: Policy makers were well informed, but their interest fluctuated with changes in staff. Gaining their interest for financing the national program could be challenging.
- ▶ Sweden: Close collaboration with the Swedish Chemicals Agency ensured policy makers' involvement as experts in chemical policy making.
- ▶ Switzerland: National policy makers were informed through governmental institutes' partnerships.

In summary, supporting factors for informing and involving national policy makers included reports, briefs, workshops, and collaboration with relevant agencies. Obstacles included COVID-19, lack of recognition or knowledge about HBM, and limited funding for dedicated programs.

From the responses, it can be summarized that HBM4EU had a positive impact on national activities regarding HBM in most countries. The main impulses mentioned are:

- ▶ Austria: HBM4EU supported the further development of the National Hub (HBM platform).
- ▶ Belgium: The financing mechanism of HBM4EU helped expand the Flemish HBM program.
- ▶ Croatia: HBM4EU generated interest among the general population to participate in HBM studies and increased awareness of the results.
- ▶ Estonia: HBM4EU had a positive impact by raising awareness of the industry-wide problem of oil shale pollution and providing methods for monitoring its effects on health.
- ▶ Hungary: HBM4EU provided the main impulse for launching new human biomonitoring studies.
- ▶ Iceland: HBM4EU generated new data and facilitated better collaboration between scientists and stakeholders.
- ▶ North Macedonia: The positive impact of HBM4EU in North Macedonia was mainly increasing knowledge and awareness among the public through focus group meetings and citizen surveys.
- ▶ Norway: HBM4EU increased awareness and knowledge about the possibilities related to HBM, although funding is still pending.
- ▶ Portugal: HBM4EU was a driving force for national HBM activities in Portugal, leading to the creation of the Portuguese National Hub and the implementation of various HBM studies and dissemination activities.
- ▶ Slovakia: HBM4EU had a positive impact by providing information that served as the basis for starting human biomonitoring activities in the country.
- ▶ Slovenia: HBM4EU resulted in the establishment of a national database on HBM studies, but more work is needed on data interpretation and presentation to the public and experts.

- ▶ Sweden: HBM4EU's reference values and focus on national studies have been positive, highlighting the need for the development of the national HBM program.
- ▶ Switzerland: HBM4EU initiated monitoring activities on a national level where none existed before.

In summary, HBM4EU had a positive impact by supporting the development of national hubs, expanding HBM programs, raising awareness, generating data, facilitating collaboration, and driving the establishment of national databases and monitoring activities.

On the national level, various working methods were established to facilitate collaboration and information exchange in the context of HBM4EU. Here is a summary of the mentioned methods:

- ▶ Austria: Progress and results were reported within the meetings of the National Platform for Human Biomonitoring.
- ▶ Belgium: Regular meetings were organized with the National Hub (NH) to exchange information, initially impacted by the COVID-19 pandemic but later shifted to more efficient online meetings.
- ▶ Croatia: Regular meetings were held, but there was a lack of motivation among the members to participate.
- ▶ Estonia: Data was shared with stakeholders, and meetings were conducted to discuss and decide project-related matters involving different institutions.
- ▶ Hungary: Meetings took place between colleagues working at different departments in the National Public Health Center to discuss results and plan next steps.
- ▶ Iceland: Both electronic (during COVID-19) and physical meetings were held among the core team.
- ▶ North Macedonia: No activity or progress was reported regarding working methods on the national level.
- ▶ Norway: Meetings and information sharing were established as part of the working methods.
- ▶ Portugal: A core working group was formed, and several working meetings were held to design, develop, and implement dissemination activities such as scientific meetings, focus groups, and questionnaires with Portuguese citizens. Media appearances and dissemination at national and international conferences also took place. HBM4EU was a supporting factor for these activities, while the main obstacles were the absence of a dedicated HBM program and allocated budget for the National Hub.
- ▶ Slovakia: Regular or ad hoc meetings were conducted with partner institutions, with the COVID-19 pandemic posing challenges to meetings and time management.
- ▶ Slovenia: Regular NH meetings and separate meetings for HBM performers took place, although the COVID-19 pandemic significantly impacted sampling and laboratory work. Guaranteed funding provided support, while COVID-19 was the main obstacle.
- ▶ Sweden: National hub meetings were held at least once a year, along with meetings within the national HBM program steering board. HBM4EU was presented in national HBM conferences. Existing networks within the national HBM program were supporting factors,

and the lack of concrete questions from HBM4EU posed obstacles to establishing working groups.

- Switzerland: There were few national-level meetings as partners worked on different aspects of the project.

In summary, the established working methods on the national level included regular meetings, information sharing, discussions, and various dissemination activities. The COVID-19 pandemic posed challenges to physical meetings, but electronic platforms were utilized. Funding, existing networks, and support from HBM4EU were mentioned as supporting factors, while obstacles included the lack of motivation, absence of dedicated funding, and the impact of COVID-19.

3 Special issue of the HBM4EU key publications

HBM4EU led to a high number of valuable scientific publications, The key results are published in a special issue. The project supported the coordination with the journals editor and the reviewing process. The special issue can be accessed via the link: [International Journal of Hygiene and Environmental Health | Special Issue: Key results of the European Human Biomonitoring Initiative - HBM4EU | ScienceDirect.com by Elsevier](#)

Articles included are listed below:

1. Editorial
2. HBM4EU from the Coordinator's Perspective: Lessons Learnt from Managing a Large-scale EU Project; Kolossa-Gehring, 114072
3. HBM4EU results support the Chemicals' Strategy for Sustainability and the Zero-Pollution Action Plan; Joana LOBO VICENTE, 114111
4. Application of human biomonitoring data to support policy development, raise awareness and environmental public health protection among countries within the HBM4EU project; Dorothy Ubong, 114170
5. From science to policy: How European HBM indicators help to answer policy questions related to phthalates and DINCH exposure; Antje Gerofke, 114073
6. Human biomonitoring guidance values (HBM-GVs) for priority substances under the HBM4EU Initiative – New values derivation for deltamethrin and cyfluthrin and overall results; Petra Apel, 114097
7. Corrigendum to „Human biomonitoring guidance values (HBM-GVs) for priority substances under the HBM4EU Initiative – New values derivation for deltamethrin and cyfluthrin and overall results“; Petra Apel, 114144
8. The HBM4EU chromates study – outcomes and impacts on EU policies and occupational health practices; Tiina Santonen, 114099
9. Implementation and coordination of an ethics framework in HBM4EU – experiences and reflections; Lisbeth E. E. Knudsen, 114098
10. A step towards harmonising Human Biomonitoring study setup on European level: Materials provided and lessons learnt in HBM4EU; L. Kim Pack, 114118
11. Coordination of chemical analyses under the European Human Biomonitoring Initiative (HBM4EU): Concepts, procedures and lessons learnt; Katrin Vorkamp, 114183
12. Harmonized human biomonitoring in European children, teenagers and adults: EU-wide exposure data of 11 chemical substance groups from the HBM4EU Aligned Studies (2014-2021); Eva Govarts, 114119
13. Urinary excretion of phthalates and the substitutes DINCH and DEHTP in Danish young men and German young adults between 2000 and 2017 – a time trend analysis; Nina Vogel, 114080
14. Current exposure to phthalates and DINCH in European children and adolescents – Results from the HBM4EU Aligned Studies 2014 to 2021; Nina Vogel, 114101
15. Cumulative risk assessment of five phthalates in European children and adolescents; Rosa Lange, 114052
16. PFAS levels and determinants of variability in exposure in European teenagers – Results from the HBM4EU aligned studies (2014-2021), Richterova, 114057
17. Approaches to mixture risk assessment of PFASs in the European population based on human hazard and biomonitoring data; Wienecke Bil, 114071
18. PFASs: What can we learn from the European Human 4 Biomonitoring Initiative HBM4EU; Maria Uhl, 114168

19. Human urinary arsenic species, associated exposure determinants and potential health risks assessed in the HBM4EU Aligned Studies; Jurgen Buekers, 114115
20. Cadmium exposure in adults across Europe: Results from the HBM4EU Aligned Studies survey 2014-2020; Janja Snoj Tratnik, 114050
21. Exposure to flame retardants in European children — Results from the HBM4EU aligned studies; van der Schyff, 114070
22. Implementation of effect biomarkers in human biomonitoring studies: A systematic approach synergizing toxicological and epidemiological knowledge, Carrillo, 114140
23. Health information for human biomonitoring studies; Hanna Tolonen, 114051
24. Mixture risk assessment and human biomonitoring: lessons learnt from HBM4EU; Mirjam Luijten, 114135
25. Assessment of exposure to pesticide mixtures in five European countries by a harmonized urinary suspect screening approach; Ilse Ottenbros, 114105
26. HBM4EU-MOM: Prenatal methylmercury-exposure control in five countries through suitable dietary advice for pregnancy – study design and characteristics of participants; Andromachi Katsonouri à PENDING
27. How to use human biomonitoring in chemical risk assessment: Methodological aspects, recommendations, and lessons learned from HBM4EU, Tina Santonen, 114139

4 Event organisation

4.1 Events 2020

The work in 2020 focused on supporting the organization, implementation, and follow-up of the annual event week (September 29th - October 1st, 2020), as well as the conference "Human Biomonitoring for Science and Policy" during the German Presidency of the Council.

Due to the current COVID-19 pandemic, it was impossible to hold the events as planned with up to 250 people in attendance, so alternative scenarios were quickly discussed. It was important to be able to adapt flexibly to the pandemic developments, which is why a hybrid approach was pursued. The Consortium Meeting and the conference were therefore live-streamed. External speakers were connected remotely, and viewers had the opportunity to ask questions to the speakers through a chat function. All other meetings were organized as WebEx meetings, with the on-site participants appearing as one participant in WebEx. Corresponding camera and microphone technology were provided. The following table indicates the specific tasks carried out for each event.

Table 3: Events in 2020 and related tasks

	Consortium Meeting (29.09.2020)	Stakeholder & Advisory Board Meeting (30.09.2020)	Governing Board Meeting (01.10.2020)	Human Biomonitoring for Science and Policy Conference (02.10.2020)
Organization of conference rooms for on-site participants	X Tagungswerk, Lindenstr. 85, 10969 Berlin	X Tagungswerk, Lindenstr. 85, 10969 Berlin	X Tagungswerk, Lindenstr. 85, 10969 Berlin	X Umweltforum, Pufendorfstr. 11, 10249 Berlin
Coordination with on-site event technology regarding live streaming and integration of remote speakers	X			X
Coordination with on-site event technology		X	X	
Sending invitations and reminders to the consortium	X			X
Provision of program flyer				X
Provision of full length program				X
Surveying consortium partners about current plans, options, preferences, etc.	X			
Provision of a registration platform	X		X	X
Coordination with the venue property owner regarding the	X	X	X	X

	Consortium Meeting (29.09.2020)	Stakeholder & Advisory Board Meeting (30.09.2020)	Governing Board Meeting (01.10.2020)	Human Biomonitoring for Science and Policy Conference (02.10.2020)
hygiene concept and ensuring that all necessary aspects are met (e.g., provision of face masks)				
Collection of all necessary data for COVID-19 contact tracing	X	X	X	X
Provision of catering for on-site participants	X	X	X	X
Training of all remote speakers in the use of the Vimeo Remote Guest Portal through bilateral video conferences	X			X
Providing information to live stream viewers regarding interactive participation	X			X
Development of a detailed director's plan	X			X
Monitoring of the live chat to promptly relay questions to the moderator	X			X
Meeting documentation	X	support	X	Editing and provision of the recording (see Annex)
Provision of polling tools			X	
Provision of professional moderator				X

4.2 Events 2021

All meetings of the meeting week (Consortium Meeting, Governing Board Meeting, Stakeholder Forum and Advisory Board Meeting) were organised as hybrid meetings with some participants on site in Berlin and a larger virtual participation via WebEx. Appropriate camera and microphone equipment was provided. In the following, the work carried out for all events is presented individually.

Table 4: Events in 2021 and related tasks

	Consortium Meeting (29.09.2020)	Stakeholder & Advisory Board Meeting (30.09.2020)	Governing Board Meeting (01.10.2020)
Organization of conference rooms for on-site participants	X Tagungswerk, Lindenstr. 85, 10969 Berlin	X Tagungswerk, Lindenstr. 85, 10969 Berlin	X Tagungswerk, Lindenstr. 85, 10969 Berlin
Coordination with on-site event technology		X	X
Sending invitations and reminders to the consortium	X		
Surveying consortium partners about current plans, options, preferences, etc.	X		
Provision of a registration platform	X		X
Coordination with the venue property owner regarding the hygiene concept and ensuring that all necessary aspects are met (e.g., provision of face masks)	X	X	X
Check of 3G certificates	X	X	X
Provision of catering for on-site participants	X	X	X
Meeting documentation	X	For the advisory board meeting	X

4.3 Events 2022

In 2022 the final HBM4EU conference took place in Brussels followed by a final advisory board meeting. Both events have been organised as hybrid meetings in Brussels.

In the following, the tasks carried out for the two events are presented individually.

Table 5: Events in 2022 and related tasks

	Final HBM4EU conference (27./28. 04.2022)	Advisory Board Meeting (29.04.2022)
Organization of conference rooms for on-site participants	X Thon Hotel EU, Brussels	X Thon Hotel EU, Brussels
Coordination with on-site event technology	X	X
Sending invitations and reminders to the consortium	X	

	Final HBM4EU conference (27./28. 04.2022)	Advisory Board Meeting (29.04.2022)
Provision of a registration platform	X	
Coordination with the venue property owner regarding the hygiene concept and ensuring that all necessary aspects are met (e.g., provision of face masks)	X	X
Provision of catering for on-site participants	X	X
Meeting documentation		X
Provision of professional moderator	X	
Preparation of advertising give aways for participants	X	

A Appendix - Conference Flyer

Figure 2: Conference flyer



International Hybrid Conference

Human Biomonitoring
for science and chemical policy

02 October 2020

Federal Ministry
for the Environment, Nature Conservation
and Nuclear Safety

**Umwelt
Bundesamt**

International Hybrid Conference

Friday 2nd October 2020

9:00	Reception, Registration, Coffee
9:30	Opening Session Welcome and keynote Svenja Schulze Federal Minister for the Environment, Nature Conservation and Nuclear Safety (BMU), Germany Chemicals, health and wellbeing in Europe Hans Bruyninckx Executive Director of the European Environment Agency (EEA) Science and policy for a healthy future – HBM4EU, the European Human Biomonitoring Initiative Marika Kolossa-Gehring Head of Unit, German Environment Agency (UBA), Coordinator of HBM4EU The role of HBM in a new European Chemicals Policy Strategy for Sustainability Thomas Jakl Deputy Director General, Austrian Ministry for the Environment, Chair of the HBM4EU Governing Board Horizon Europe – a faster move from research to policy Anna Lönnroth Head of Unit, Healthy Lives, DG Research and Innovation, European Commission
10:45	Coffee Break
11:15	Session A: HBM in the context of global developments <i>Presentations and discussion</i> <i>Chair: Holger Koch, Scientific Head of Laboratory, Institute for Prevention and Occupational Medicine (IPA), Member of the German Human Biomonitoring Commission</i> Antonia Calafat US Centers for Disease Control and Prevention (CDC) Shoji Nakayama Deputy Director, Japan Environment and Children Study Sam Adu-Kumi Director, Chemicals Control and Management Centre, Environmental Protection Agency, Ghana Ninja Reineke Head of Science, Chemtrust
12:15	Keynote Virginijus Sinkevičius EU Commissioner for Environment, Oceans and Fisheries
12:30	Lunch
13:30	Difficulties and approaches to enlarge the toolbox for HBM Gabriele Leng Head of Department, Institute for Biomonitoring, Currenta GmbH, Germany

Organisation

German Environment Agency (UBA)
Section II 1.2 Toxicology, Health Related Environmental Monitoring
Corrensplatz 1
14195 Berlin, Germany
www.umweltbundesamt.de

Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU)
Division IG II 2
Environment and Health
Post Office Box 12 06 29
53048 Bonn, Germany
www.bmu.de/en

Registration, also for virtual attendance
<https://evenue.com/172017885>

Costs
Participation is free of charge.

Venue
Umweltforum
Pufendorferstrasse 11
10249 Berlin

Conference secretariat
events@hbm4eu.eu

Status
September 2020

13:45	Session B: Health based guidance values and risk communication <i>Presentations and discussion</i> <i>Chair: Claudia Röhl, Head of Department, Environmental Health Protection, State Agency for Social Services Schleswig-Holstein, Chair of the German Human Biomonitoring Commission</i> Greet Schoeters Programme Manager, Environmental Health, Flemish Institute for Technological Research (VITO), Belgium Annie St-Amant Section Head, National Biomonitoring, Health Canada Tanja Schwerdtle Vice President of the German Federal Institute for Risk Assessment (BfR) Koki Takaki Administrator for Assessment and PRTs, Organization for Economic Co-operation and Development (OECD) Francesca Racioppi Head of European Centre for Environment and Health, World Health Organization (WHO)
15:00	HBM Data for risk assessment of chemical mixtures Carl-Gustaf Bornehag Head of Public Health Sciences, Karlstad University, Sweden
15:15	Coffee Break
15:45	Session C: The new EU chemical strategy and the future role of HBM <i>Presentations and discussion</i> <i>Chair: Birgit Wolz, Head of Division, Environment and Health, Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU)</i> Jack de Bruijn Director, Risk Assessment, European Chemicals Agency (ECHA) Marco Binaglia Team Leader, Contaminants, European Food Safety Authority (EFSA) Cristina de Avila Head of Sustainable Chemicals Unit, DG Environment, European Commission Carlo Pettinelli Director, Chemicals and Consumer Industries, DG Grow, European Commission Bas Eickhout, MEP Vice-Chair, European Parliament Committee on the Environment, Public Health and Food Safety
17:00	Conclusions of the conference and perspectives of the way forward in the EU and beyond Dirk Messner President, German Environment Agency (UBA)
17:20	End



Gemeinsam. Europa wieder stark machen.
Together for Europe's recovery
Tous ensemble pour relancer l'Europe

Source: own illustration, Ramboll

B Appendix - Conference Program

Figure 3: Conference program



Imprint

Published by

German Ministry for the Environment, Nature Conservation and
Nuclear Safety (BMU)
Robert-Schuman-Platz 3, Bonn

German Environment Agency (UBA)
Wörlitzer Platz 1, Dessau

September 2020

This specialized publication is available free of charge.
All copyrights reserved.



We welcome you to the international conference on Human Biomonitoring for Science and Chemical Policy, which is organised under the auspices of the German EU Council Presidency 2020 and in the framework of the European Human Biomonitoring Initiative (HBM4EU).

HBM4EU has put human biomonitoring firmly on the agenda of EU policies – as an important tool for measuring human exposure to chemicals, identifying deficits in the protection of our citizens and evaluating the success of regulatory measures.

The European Green Deal and the future Chemicals Strategy for Sustainability pave the way for innovative approaches in EU chemical policy. In this context we would like to discuss how human biomonitoring can further advance health-related environmental protection and promote a non-toxic environment.

Building on the success of the first and second international conferences on human biomonitoring in 2010 and 2016, the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety and the German Environment Agency jointly offer you an international platform to discuss the role of human biomonitoring in chemical policy making.

We have invited international experts from the fields of science, politics, national authorities, industry and associations and, even though the COVID pandemic means that most of you can only participate online, we are looking forward to an informative and lively conference.

Svenja Schulze

*Federal Minister for the
Environment, Nature Conservation
and Nuclear Safety*

Dirk Messner

*President
German Environment Agency*

Conference Programme

Moderation: Katrin Prüfig

Friday 2nd October 2020

9:00 Reception, Registration, Coffee

9:30 Opening Session

Welcome and keynote

9:30 **Svenja Schulze**

Federal Minister for the Environment, Nature Conservation and Nuclear Safety (BMU), Germany

Chemicals, health and wellbeing in Europe

9:40 **Hans Bruyninckx**

Executive Director of the European Environment Agency (EEA)

Science and policy for a healthy future – HBM4EU, the European Human Biomonitoring Initiative

9:55 **Marika Kolossa-Gehring**

Head of Unit, German Environment Agency (UBA),
Coordinator of HBM4EU

The role of HBM in a new European Chemicals Policy Strategy for Sustainability

10:10 **Thomas Jakl**

Deputy Director General, Austrian Ministry for the Environment,
Chair of the HBM4EU Governing Board

Horizon Europe – a faster move from research to policy

10:25 **Anna Lönnroth**

Head of Unit, Healthy Lives, DG Research and Innovation,
European Commission

10:45 Coffee Break

Session A: HBM in the context of global developments

Presentations and discussion

11:15 *Chair: Holger Koch,
Scientific Head of Laboratory, Institute for Prevention and Occupational Medicine (IPA), Member of the German Human Biomonitoring Commission*

Antonia Calafat

US Centers for Disease Control and Prevention (CDC)

Shoji Nakayama

Deputy Director, Japan Environment and Children Study

Sam Adu-Kumi

Director, Chemicals Control and Management Centre, Environmental Protection Agency, Ghana

Ninja Reineke

Head of Science, Chemtrust

Keynote

12:15 **Virginijus Sinkevičius**

EU Commissioner for Environment, Oceans and Fisheries

12:30 Lunch

Difficulties and approaches to enlarge the toolbox for HBM

13:30 **Gabriele Leng**

Head of Department, Institute for Biomonitoring, Currenta GmbH, Germany

Session B: Health based guidance values and risk communication

Presentations and discussion

13:45 *Chair: Claudia Röhl,*
Head of Department, Environmental Health Protection, State Agency
for Social Services Schleswig-Holstein, Chair of the German
Human Biomonitoring Commission

Greet Schoeters

Programme Manager, Environmental Health, Flemish Institute for
Technological Research (VITO), Belgium

Annie St-Amand

Section Head, National Biomonitoring, Health Canada

Tanja Schwerdtle

Vice President of the German Federal Institute for Risk Assessment
(BfR)

Koki Takaki

Administrator for Assessment and PRTRs, Organization for Economic
Co-operation and Development (OECD)

Francesca Racioppi

Head of European Centre for Environment and Health, World Health
Organization (WHO)

HBM Data for risk assessment of chemical mixtures

15:00 **Carl-Gustaf Bornehag**

Head of Public Health Sciences, Karlstad University, Sweden

15:15 **Coffee Break**

Session C: The new EU chemical strategy and the future role of HBM

Presentations and discussion

15:45 *Chair: Birgit Wolz,
Head of Division, Environment and Health, Federal Ministry for the
Environment, Nature Conservation and Nuclear Safety (BMU)*

Jack de Bruijn
Director, Risk Assessment, European Chemicals Agency (ECHA)

Marco Binaglia
Team Leader, Contaminants, European Food Safety Authority (EFSA)

Cristina de Avila
Head of Sustainable Chemicals Unit, DG Environment, European
Commission

Carlo Pettinelli
Director, Chemicals and Consumer Industries, DG Grow, European
Commission

Bas Eickhout
Vice-Chair, European Parliament Committee on the Environment,
Public Health and Food Safety

17:00 **Conclusions of the conference and perspectives of the way forward in the EU and beyond**
Dirk Messner
President, German Environment Agency (UBA)

17:20 **End**



[#EUGreenDeal](#)

Meet the speakers





Svenja Schulze

Federal Minister for the Environment, Nature Conservation and Nuclear Safety, Germany

Since March 2018 Svenja Schulze is the Federal Minister for the Environment, Nature Conservation and Nuclear Safety in Germany.



Prof. Dr. Dirk Messner

President, German Environment Agency

Prof. Dr. Dirk Messner assumed the office of President of the German Environment Agency on 1 January 2020.



Dr. Hans Bruyninckx

Executive Director, European Environment Agency

Hans Bruyninckx is the Executive Director of the European Environment Agency since 1 June, 2013. In 1996 Dr Bruyninckx completed a PhD in international environmental politics at Colorado State University. From 2010 to 2013, he was head of the policy oriented research institute, HIVA, in Leuven, Belgium. He was head of the Political Science department at Leuven University from 2007 to 2010. Over the last 20 years, he has conducted research in areas including environmental politics, climate change, and sustainable development. He has taught on global environmental politics and global environmental governance in relation to the European Union (EU), publishing extensively on EU environmental policies and its role as an actor in global environmental governance. Throughout his career Dr Bruyninckx has worked with and advised governmental agencies, civil society and businesses.



Dr. Marike Kolossa-Gehring

Head of Unit, German Environment Agency,
Coordinator of HBM4EU

Dr. Marike Kolossa-Gehring is biologist and toxicologist and got her PhD from the Christian-Albrechts-University Kiel, Germany. Her research focuses on toxicology and human biomonitoring (HBM). She joined the German Environment Agency (UBA) in 1992 where she worked on environmental impacts on human health, general and international affairs of environmental chemicals regulation, toxicology and as head of the section "Pharmaceuticals, Washing- and Cleansing Agents". She is Head of Section "Toxicology, Health-related Environmental Monitoring" and coordinator of the European Joint Programme HBM4EU, a joint effort of more than 120 partners from 30 countries, the European Environment Agency and the European Commission, co-funded under Horizon 2020. At the UBA she is in charge of managing the German Federal Human Biomonitoring Program consisting of German Environmental Survey (GerES), the part on human samples of the German Environmental Specimen Bank (ESB), the German Human Biomonitoring Commission, and the HBM cooperation between the German Chemical Industry Association (VCI) and the Federal Ministry for the Environment, Nature Conservation, and Nuclear Safety (BMU).

She was involved in the development of assessment strategies and guidelines at the national, EU and OECD level, vice-chair and chair of the OECD Endocrine Disruptor Testing and Assessment Task Force from 2006 to 2010. She was Work Package Leader in the EU HBM projects ESBIO, DEMOCOPHES and COPHES, the Consortium to Perform Human Biomonitoring on a European Scale preparing and piloting a European human biomonitoring study. From 2011 to 2014 she was Governmental Councilor of the International Society of Exposure Science (ISES).



Thomas Jakl, PhD

Deputy Director General,
Austrian Ministry for the Environment,,
Chair of the HBM4EU Governing Board

Main Activities: Austrian Environment Ministry, DG for, Waste Management, Chemicals Policy and Environmental Technology – Deputy Director General; Head of Department responsible for risk assessment and risk management of industrial chemicals; Head of EU – Presidency Delegation for international negotiations in the field of Chemicals policy during the Austrian – EU Council Presidencies (1998, 2006, 2018) Former President of EU – Council working group on REACH; Former President of the EU Council working group on international environmental policy (Chemicals)

Membership of professional bodies:

Fed. Ministry for Environment - Deputy Director General

HBM4EU (EU – wide initiative on Human Biomonitoring; Horizon 2020 EU – funded)

Chair of the Governing board, “Ambassador”;

European Chemicals Agency (ECHA) -

Member of Management board (2007-2016; Chair from 2008 to 2012)

Austrian Federal Agency for Site Remediation – Chair of Supervisory board

Austrian Federal Environment Agency – Deputy chair of Supervisory Board

Austrian Forum of Scientists in charge of Environmental Protection – Board of Directors

Other skills: Plant physiologist, PhD, MSc Earth Sciences; Frequent Publisher of Articles in the Fields of Science and Environment related issues (High Quality Newspapers, Journals, Books – Initiator and Co Author of “Chemical Leasing” and “Chemical Leasing goes global”, Springer Vienna-New York). Winner of most important Austrian „Environment - Award“ in the field of Journalism, Winner of the EU – “Genius” Award for “Chemical Leasing”; Lecturer at various universities



Dr. Anna Lönnroth

Head of Unit, Healthy Lives,
DG Research and Innovation/RTD
European Commission

Anna Lönnroth Sjöden is since 1 June 2019 head of the Healthy Lives unit in the People Directorate at the European Commission's Directorate-General for Research and Innovation. The unit aims to ensure that R&I policies and programmes accelerate a better understanding of health at all ages and the achievement of effective and widely implemented strategies for preventing illness. This encompasses the identification and study of all health determinants, including personal biological pre-dispositions and external factors e.g. environmental, climatic, chemical, food, occupational or lifestyle-related. It also encompasses the development of tangible solutions and interventions in terms of health promotion, disease prevention, screening programmes and technologies for assessing exposures. Prior to this assignment, Anna was leading the Strategy for Health unit since September 2018. Prior to this position, she was heading the Life Sciences unit at the European Research Council Executive Agency (ERCEA), where she managed the scientific evaluation and monitoring of ERC frontier research grants. Before joining the ERCEA in 2013, she was deputy head of the Infectious Diseases and Public Health unit in the Health Directorate in the Directorate-General for Research and Innovation. She joined the European Commission in 1994 as a scientific officer to work on EU research funding in genomics. She holds a PhD in molecular genetics from the Karolinska Institute in Stockholm.

Session A
HBM in the context of
global developments



Dr. Holger M. Koch

Scientific Head of Laboratory, Institute for Prevention and Occupational Medicine (IPA), Member of the German Human Biomonitoring Commission

Dr. Holger M. Koch is Head of the Human-Biomonitoring Laboratories at the Institute for Prevention and Occupational Medicine (IPA) - Institute of the University Bochum, Germany. He has co-authored over 175 peer-reviewed publications on exposure and risk assessment of occupational and environmental chemicals such as plasticizers, bisphenols, parabens, sunscreens, aromatic amines and pesticides.

Since 2010 Dr. Koch is member of the Human Biomonitoring Commission of the German Environment Agency (UBA) and from 2010-15 he was member of the Chronic Hazard Advisory Panel on Phthalates (CHAP) of the U.S. Consumer Product Safety Commission (CPSC). Since 2017, Dr. Koch is co-Editor-in-Chief of the International Journal of Hygiene and Environmental Health (IJHEH). In 2018 Dr. Koch was named a Highly Cited Researcher by Web of Science/Clarivate Analytics.



Antonia Calafat, PhD

Chief, Organic Analytical Toxicology Branch, CDC

Dr. Antonia Calafat is the Chief of the Organic Analytical Toxicology Branch, Division of Laboratory Sciences, National Center for Environmental Health, U.S. Centers for Disease Control and Prevention (CDC) in Atlanta, Georgia. She leads CDC's biomonitoring programs for assessing human exposure to pesticides; flame retardants; polycyclic aromatic hydrocarbons; chemicals added to consumer and personal-care products such as phthalates and phenols; and persistent organic pollutants including polybrominated diphenyl ethers; polychlorinated dibenzo-p-dioxins, furans, and biphenyls; and per- and polyfluoroalkyl substances (PFAS). She has developed and maintained extensive collaborative research with leading scientists in the fields of exposure science, epidemiology, toxicology and health assessment, and has published over 515 peer-reviewed articles. Her research has made important contributions to biomonitoring science, including CDC's National Reports on Human Exposure to Environmental Chemicals. Throughout her career, Dr. Calafat has served on numerous advisory committees and scientific panels, including the Advisory Board of HBM4EU. In 2019, she received the Excellence in Exposure Science Award given by the International Society of Exposure Science. Since 2017, she is the co-Editor-in-Chief of the International Journal of Hygiene and Environmental Health. Dr. Calafat earned her PhD in Chemistry in 1989 from the University of the Balearic Islands, Spain. She was a Fulbright Scholar at the Department of Chemistry of Emory University where she completed her postdoctoral training. She joined CDC in 1996.



Shoji F. Nakayama, MD, PhD

Deputy Director, Japan Environment and Children's Study Programme Office, Head, Exposure Dynamics Research Section, Centre for Health and Environmental Risk Research, National Institute for Environmental Studies, Japan

Dr Shoji Nakayama is an MD and holds PhD in public health. His expertise is in exposure science, especially in children's exposure. He is certified as a Public Health Specialist/Supervisor by Japan Board of Public Health and Social Medicine. He is an associate editor of *Environment International* and *Journal of Exposure Science and Environmental Epidemiology*. In 2005, Dr Nakayama was invited to the U.S. Environmental Protection Agency (EPA) and worked on exposure research on perfluoroalkyl substances. In 2009, he moved to EPA's engineering laboratory to help risk management of the emerging contaminants. Then in 2011, Dr Nakayama joined the National Institute for Environmental Studies in Japan. Currently he is Deputy Director of the Japan Environment and Children's Study Programme Office as well as Adjunct Professor of the St. Luke's International University and the University of Tsukuba. Dr Nakayama is a lead exposure scientist for the Japan Environment and Children's Study (JECS), which is a longitudinal birth cohort study involving 100,000 mothers and children. He is devoted to human biomonitoring research including method development for contaminants of emerging concern. Exposome research is his most recent activity. He collaborates with US, Canada, EU and Asian researchers to advance and promote children's environmental health research.



Sam Adu-Kumi, PhD

Director, Chemicals Control and Management Centre, Environmental Protection Agency, Ghana

Dr. Sam Adu-Kumi holds a PhD in Nuclear and Environmental Protection (University of Ghana, Ghana), MPhil in Chemistry (University of Ghana, Ghana), MPhil Environmental Science (University of Bradford, United Kingdom) and BSc in Chemistry (University of Cape Coast, Ghana). Dr. Adu-Kumi currently works with the Environmental Protection Agency, Accra, Ghana, as the Director of the Chemicals Control and Management Centre and is the Registrar of Pesticides in Ghana. Dr. Sam Adu-Kumi is an acclaimed international and national figure with expertise in sound management of chemicals and waste, and is the Focal Person for the following United Nations chemicals-related multilateral environmental agreements (MEAs)/Frameworks and Networks for Ghana, among others: Basel Convention on the Control and Trans-boundary Movement of Hazardous Wastes and their Disposal, Rotterdam Convention on the Prior Informed Consent (PIC) Procedures for Certain Hazardous Chemicals and Pesticides in International Trade, Stockholm Convention on Persistent Organic Pollutants (POPs), Minamata Convention on Mercury, Strategic Approach to International Chemicals Management (SAICM), and World Health Organization (WHO) Chemical Risk Assessment Network.

Dr. Sam Adu-Kumi served as the President of the 8th Conference of the Parties to the Stockholm Convention on Persistent Organic Pollutants (POPs) and is currently a member of the Persistent Organic Pollutants Review Committee (POPRC). Dr. Adu-Kumi is an astute academician and research scientist and effectively combines academic work and scientific research with his official public service functions. He is a part-time senior lecturer at the University of Ghana (Graduate School of Nuclear and Allied Sciences) and is an author/co-author of more than thirty (30) peer-reviewed scientific publications.



Dr. Ninja Reineke

Head of Science, CHEM Trust

Ninja Reineke, Head of Science at CHEM Trust, holds a degree in chemistry and obtained a PhD for her study on emerging marine pollutants. She had worked for World Wide Fund for Nature (WWF) on EU chemicals policy for almost 10 years before joining CHEM Trust in 2013. Her main work areas are EU regulations on endocrine disruptors and persistent chemicals. She also works at the science-policy interface to facilitate the uptake of latest research into regulation, e.g. on combination effects and human biomonitoring studies. All CHEM Trust policy briefings and submissions into recent EU consultations can be found on CHEM Trust's website: www.chemtrust.org/.





www.hbm4eu.eu

Follow us





Virginijus Sinkevičius

EU Commissioner
for Environment, Oceans and Fisheries

Virginijus Sinkevičius is the present Commissioner for the Environment, Oceans and Fisheries, at the European Commission. Mr Sinkevičius was from 2017 to 2019 Minister of Economy, and before he was leading the Committee of Economy at the Parliament of Lithuania. Mr. Sinkevičius was elected to the Parliament in October 2016. Prior, he was a Team Lead for Regulatory Affairs at Invest Lithuania. Mr. Sinkevičius holds BA in International Relations and Affairs from Aberystwyth University and Master's degree in European International Affairs from Maastricht University.



Prof. Dr. med. Gabriele Leng

Head Biomonitoring,
Institute of Biomonitoring, Currenta GmbH&Co.OHG

Prof. Leng studied chemistry and medicine at the University of Western Ontario in London, Canada and the Universities of Bielefeld, Frankfurt and Duesseldorf. She is a Medical Specialist in Occupational Health as well as Hygiene and Environmental Health. Her habilitation focused on the topic biomonitoring of pyrethroids. Since 2002 Prof. Leng is head of Institute of Biomonitoring, Department of Occupational Health, Currenta GmbH & Co.OHG (former Bayer AG), since 2005 she is associate professor at the University of Duesseldorf. Scientific work for:

DFG: Member of the Permanent Senate Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area Development of Analytical methods in biological material as well as Assessment of Biological Exposure Values

DGAUM: Member of steering committee of German Association for Occupational and Environmental Medicine

German Ministry of Labour and Social Affairs (BMAS): Member of Committee for Occupational Health

German Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) and German Environment Agency (UBA): Member of Expert group of Human Biomonitoring Project.



Session B
Health based guidance
values and risk
communication



PD Dr. Claudia Röhl

Head of Department, Environmental Health Protection,
State Agency for Social Services Schleswig-Holstein, Chair
of the German Human Biomonitoring Commission

Claudia Röhl has studied medicine and physics in Berlin (Freie Universität, FU) and Kiel (Christian-Albrechts-Universität, CAU), Germany. As medical doctor and during her habilitation she specialized in environmental medicine, toxicology and risk assessment (European Risk Assessor, TRISK). She was working for 15 years in research at the university in Kiel focusing on the understanding of neurotoxicity mechanisms, the development of in vitro toxicity assays and the field of nanotoxicology. In 2013 she became Head of Unit ZEBET (Centre for the Documentation and Evaluation of Alternatives to Animal Experiments) at the German Federal Institute for Risk Assessment (BfR).

Since 2015 she is Head of Department Environmental Health Protection at the State Agency for Social Services Schleswig-Holstein (LASD SH). Her department is responsible for health risk assessments concerning exposures to environmental chemicals to support primarily the health ministry and local health authorities in risk communication and in the development of risk management measures and strategies to protect regarded target populations. Her lab provides environmental and human biomonitoring data mainly for volatile organic compounds in indoor air and persistent pollutants in human milk.

Claudia Röhl is Chair of the German Human Biomonitoring Commission of the German Environment Agency (UBA) and member of several other scientific committees involved in toxicological risk assessment and the derivation of health based guidance values (Advisory Board of the German Toxicology Society (GT), German Committee on Indoor Guide Values (AIR), EU-LCI working group for the derivation of health-based reference values for construction product emissions).



Prof. Dr. Greet Schoeters

Programme Manager, Environmental Health,
Flemish Institute for Technological Research
(VITO), Belgium

Greet Schoeters is program manager of environment and health projects at VITO and full professor at the University of Antwerp. She has coordinated the Flemish human biomonitoring project since 2002. She has helped to build EU wide human biomonitoring activities through active involvement in the EU projects ESBIO, COPHES, DEMOCOPHES and HBM4EU which she co-coordinates. She is vice chair of the Scientific Advisory Committee of the European Environment Agency and served in different risk assessment committees (EFSA, SCHER). Special interest are the use and implementation of molecular biomarkers to better understand the effects of chemicals in humans and to improve the dialogue with decision makers and stakeholders to promote the uptake and use of the scientific results.



Annie St-Amand, M.Sc.

Head of the National Biomonitoring Program
at Health Canada

Annie joined Health Canada's Healthy Environments and Consumer Safety Branch in 2005 after completing a Master's degree in Toxicology at the University of Montreal. In 2015, she became Head of the National Biomonitoring Program managing the biomonitoring component of the Canadian Health Measures Survey. In this role, she consults with stakeholders to identify chemical priorities, collaborates closely with analytical laboratories to develop methods, and actively works to increase awareness and use of human biomonitoring data through scientific publications, biomonitoring reports, open data releases, and stakeholder outreach. She is interested in exposure science, more specifically in the interpretation of biomonitoring data and the development of tools to interpret population level concentrations that can be useful for chemical risk assessment. She feels privileged to lead a talented team of eight scientific evaluators and to supervise graduate students at the University of Montreal. She is the Chair of the International Biomonitoring Network (IBN) since 2018 and the interim co-chair of the i-HBM, a newly created working group on biomonitoring guidance values under the International Society of Exposure Science (ISES).



Prof. Tanja Schwerdtle

Vice President of the German Federal Institute
for Risk Assessment

Professor Dr Tanja Schwerdtle has been Vice-President of the Federal Institute for Risk Assessment (BfR), Berlin since March 2020. After studying chemistry and food chemistry in Karlsruhe and scientific work at the TU Berlin, the University of Oxford and the Leiden University Medical Center, she was appointed Professor of Food chemistry in Münster. Since 2013 she holds the chair of food chemistry in Potsdam. Mrs. Schwerdtle has worked as an expert for the European Food Safety Authority (EFSA) since 2008.



Koki Takaki, PhD

Administrator for Exposure Assessment and PRTRs,
Organisation for Economic Co-operation and
Development (OECD)

Koki Takaki is an Administrator in the Environment, Health and Safety Division of the OECD. He advances three activities in the OECD; exposure assessment of chemicals, Pollutant Release and Transfer Register (PRTR) and Best Available Techniques (BAT) for preventing and controlling industrial pollution. The activity on exposure assessment aims to assist countries in developing and harmonising methods for assessing the exposure of chemicals to humans and the environment. It includes the development of Emission Scenario Documents (ESDs) which describe the sources, production processes, pathways and use patterns, and aim to quantify the emissions of a chemical into water, air, soil and/or waste. The activity also focuses on specific exposures to human and the environment with projects on occupational biomonitoring, dermal exposure and children's health. Another pillar of the activities is targeted on chemicals in products, in which information exchange systems among stakeholders on chemical in projects as well as the releases of chemicals from the use of products are discussed.



Francesca Racioppi

Head of WHO European Centre
for Environment and Health

Francesca Racioppi is the Head of the World Health Organization European Centre for Environment and Health in Bonn, Germany. Between May 2012 and September 2018, she was a Senior Policy and Programme Adviser on European Environment and Health Governance and Multisectoral Partnerships at the World Health Organization Regional Office for Europe, in Copenhagen. Between 2007 and 2011, Francesca was the acting Head of the Rome Office of the WHO European Centre for Environment and Health. Between 2004 and 2011 she developed and led the Programme on Violence and Injury Prevention in the WHO European Region. Francesca has more than 30 years of international experience in environment and health policies and science. Her specific interest and expertise include the promotion of "health in all policies" approaches, health impact assessment, violence and injury prevention, urban health, active mobility policies and interventions and consumer safety. She has authored several papers and publications. In May 2018 she was awarded an Honorary Doctorate by the Swedish School of Sport and Health Science in Stockholm, Sweden, for her leading engagement in environmental health and active transport.



“For the health of our citizens, our children and grandchildren, Europe needs to move towards a zero-pollution ambition. I will put forward a cross-cutting strategy to protect citizens’ health from environmental degradation and pollution, addressing air and water quality, hazardous chemicals, industrial emissions, pesticides and endocrine disruptors.”

*Ursula von der Leyen, A Union that strives for more -
My agenda for Europe*



Carl-Gustaf Bornehag,
PhD, Prof. for public health sciences

Head of Department of Health,
Karlstad University, Sweden

Bornehag is an environmental epidemiologist focusing on early life exposure for environmental factors such as endocrine disrupting chemicals (EDCs), food and nutrition, life styles etc. of importance for children’s health and development, holding a professorship at Karlstad University, Sweden, and at Icahn School of Medicine at Mount Sinai, NY, USA. He is PI for two major epidemiological studies in Sweden, the Dampness in Buildings and Health study (DBH) following more than 10,000 children from infancy up in adulthood and the SELMA study following more than 2,000 mother-child pairs from early pregnancy, over birth and up in school age. Bornehag is involved in six major projects (where SELMA is playing a key role): PI for the epidemiological part in EDC-Mix-Risk (Horizon 2020) a study integrating epidemiological studies with experimental cell- and animal models with focus on mixtures of EDCs and the impact on children’s health development; PI for RACH-Mix (Swedish Formas) aiming to develop methods for risk assessment of chemical mixtures; co-investigator in ENDpoiNTs and ATHENA(Horizon 2020) with the aim to develop new screening tools for chemicals with endocrine disrupting properties; co-investigator in PRIME(U.S. NIH), focusing on food and nutrition in interaction with chemicals and human health and APED (U.S. NIH) studying prenatal exposure for persistent chemicals and autism in children; and WoMHeR aiming to examine the importance of environmental factors for sexual development and gender identity. Bornehag have published more than 120 peer review articles with a h-index of 35 according to Web of Science August 2020.

Session C
The new EU chemical
strategy and the future
role of HBM



Dr. Birgit Wolz

Head of Division, Environment and Health,
Federal Ministry for the Environment, Nature
Conservation and Nuclear Safety

Dr. Birgit Wolz has been working on a broad range of environmental policy issues in the Federal Government of Germany since 1989. With the exception of her time at Harvard University in 1992/1993 and at the European Bank for Reconstruction and Development in London in 1995/1996, Dr. Wolz has been working for the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety. Since late 2007, she is the Director of the "Environment and Health" division. In this capacity, she is i.a. responsible for all activities related to human biomonitoring including the German Environmental Surveys, the German Environmental Specimen Bank, the HBM cooperation project with the German Chemical Industry and the HBM4EU research project. Dr. Wolz received her Ph.D. in law in 1984 from the University of Kiel and her Master in Public Administration degree from Harvard University in 1993.



Jack de Bruijn, PhD

Director of Directorate B
Prioritisation and Integration at ECHA

Jack de Bruijn started working at the European Chemicals Agency (ECHA) right from the start in September 2007. After having led the Risk Management Directorate for 8 years he is now leading the Directorate for Prioritisation and Integration. The Directorate is responsible for providing information and advice on chemistry and on use and exposure of chemicals to various legislative processes, for developing computational methods and tools for collecting and analysing data and it co-ordinates the identification and prioritisation of (groups of) substances requiring further regulatory actions.

Before joining the Agency Jack worked at the European Chemicals Bureau (ECB) of the Joint Research Centre (JRC/EC) in Italy where he coordinated the development of the guidance documents for REACH. Before joining the ECB he worked for many years for the Dutch national authorities in the area of regulatory risk assessment of chemicals.

Jack is chemist by training and has a PhD in environmental toxicology.



Marco Binaglia, MSc., ERT

Senior Scientific Officer,
Contaminants Team Leader,
Unit on Biological Hazards and Contaminants, EFSA

Marco Binaglia has a Master degree in Organic Chemistry from The University of Perugia and a Specialisation degree in Toxicology from the University of Milan. He joined EFSA as Senior Scientific Officer Toxicologist in 2010 and currently holds this position with the role of Team Leader of the Team on Contaminants at the Unit on Biological Hazards and Contaminants. Formerly he worked as an industrial toxicologist with responsibility in product safety and human and environmental risk assessment of commodity and speciality chemicals in a multinational chemical company. Since 2007 he is a European Registered Toxicologist (ERT).



Cristina de Avila, LL.M

Head of Sustainable Chemicals Unit,
DG Environment, European Commission

Cristina de Avila is Head of the Sustainable Chemicals Unit of the European Commission's Environment Directorate-General. Prior to that, she was Deputy Head of the same unit, where she led the unit's work on REACH and CLP. She has been working on EU chemicals policy since 2004, having been involved in the co-decision negotiations and the implementation of the REACH Regulation since its adoption. Before joining the Commission, Cristina worked for over five years as policy analyst and lobbyist, both in an NGO in Spain and in two public affairs consultancies in Brussels. Her main area of expertise was EU environment policy, in particular the sectors on waste and product policy. Prior to her specialisation in EU law and community environment policy, Cristina worked as a lawyer for over two years. Cristina studied law in the University Complutense of Madrid, has a post-graduate diploma on International Relations from the Institute of Social Studies in The Hague and an LL.M in European Business Law from the University of Amsterdam.





Carlo Pettinelli

Director, Chemicals and Consumer Industries,
DG Grow, European Commission

Carlo Pettinelli is an official of the European Commission.

He holds a University degree (Laurea) in Economy and Business Administration and is qualified as Chartered Accountant (Dottore Commercialista), Certified Professional Auditor (Revisore contabile) and Certified Forensic Auditor. After some years of professional experience in the private sector, in Italy and abroad, he joined the European Court of Auditors in 1994.

In 1998 he moved to the European Commission where, dealing with different tasks, he worked in the Directorates-General for Competition, Audit, Education & Culture and Employment & Social Affairs, where he has been appointed Director. Carlo Pettinelli joined Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs (DG GROW) in February 2011, taking over the responsibility for several industrial sectors policies.

Since 2015 he is in charge of the "Chemicals and consumer industry" Directorate, which is responsible mainly for the chemicals-related activities. This covers both the EU chemicals regulations (REACH, CLP, Fertilizers and several others) and policy initiatives as chemicals in the Circular economy and the European Strategy for Plastics. Furthermore, the Directorate is responsible for trade negotiations of processed agricultural products (PAPs) and some other EU legislations as Metrology, Toys Safety and Cosmetics. From 2015 to 2020 he has been member of the Management Board of the European Medicines Agency (EMA, London and then Amsterdam).

Currently he represents the European Commission as member of the Management Board the Innovative Medicines Initiatives 2 (IMI2) and Bio Based Industry (BBI) Joint Undertakings.



Bas Eickhout, MEP

Member of the European Parliament /
Delegation leader of the Dutch Greens
in the European Parliament

Bas Eickhout (1976, Groesbeek) studied Chemistry and Environmental Science at the Radboud University in Nijmegen and lives in Utrecht. Since 2000, he worked as a researcher at the Netherlands Environmental Assessment Agency (Planbureau voor de Leefomgeving). He worked on several projects which had to do with international environmental problems, such as climate change, agriculture, land-use and biofuels. He co-authored the IPCC report on climate change which received the 2007 Nobel Peace Prize.

Bas Eickhout is a member of the Committee on the Environment, Public Health and Food Safety and a substitute member of the Committee on Economic and Monetary Affairs and the Committee on Budgetary Control. He is also a member of the Delegation for relations with the People's Republic of China and a substitute member of the Delegation for relations with the United States. Eickhout is delegation leader of the Dutch Greens in the Parliament.



Practical details

Conference venue

On-site participation onyl after acceptance by the organisers

Umweltforum
Pufendorferstrasse 11
10249 Berlin

Due to COVID-19 hygiene and distance regulations need to be respected, therefore only limited on-site capacities in Berlin are available.

How will the meeting take place?

The meeting will mostly take place online. There may be a limited number of seats on-site (Venue: Umweltforum Berlin) but for most participants the conference will be streamed live via VIMEO. Several of the speakers will be involved remotely. Others will be participating in Berlin. You can watch the live stream directly on

<https://vimeo.com/event/266219>.

It is recommended to use Google Chrome as browser.

Can I participate on-site?

Priority is given to our speakers and moderators as well as the necessary technical staff and the organizing team. We may have room for on-site participants, but cannot be sure, yet. In case you want to participate on-site, please contact events@hbm4eu.eu or reply to this mail. If your on-site participation is possible, we will contact you. Please do not try to participate on-site without prior acceptance by us.

In case of accepted on-site participation, we strongly recommend checking the current travel regulations in Germany and Berlin. Also please check the regulation for countries you might transit, the regulation of your country of origin (if you have to go into quarantine once you return), and your travel health insurance coverage during COVID-19. Please find the current regulation for Germany here:

<https://www.auswaertiges-amt.de/en/einreiseundaufenthalt/coronavirus>.

And the current regulation for Berlin here:

https://www.berlin.de/corona/en/faq/#faq_1_37

https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Risikogebiete_neu.html

(scroll down to „English archive“ and open the latest version).

Both these regulations may be altered at short notice prior to our conference.

Can I participate actively via the live stream?

The live stream will be combined with a chat function. It will be possible to ask questions and to provide feedback virtually. Oral questions will not be possible. All questions will be collected and provided to the speakers and/or the moderators.



