



science and policy
for a healthy future

HBM4EU

Informing and evaluating policies for chemical safety

Human biomonitoring in Europe

Keeping an eye on chemicals



- Global chemical output (produced and shipped) was valued at US\$171 billion in 1970. By 2010, it had grown to \$4.12 trillion (UNEP- Global Chemicals outlook)
- Chemical industry is **Europe's 3rd largest** manufacturing industry
- **143,835 chemical substances** have been pre-registered under REACH in Europe
- Eurostat: about **30 M t of carcinogenic, mutagenic and reprotoxic** chemicals produced in 2009.



- Towards a non toxic environment
- Reuse of resources and materials: circular economy
- Living well within the limits of our planet





107 Partners

38 Grant Signatories

Financial volume: ~ 74 M €



science and policy
for a healthy future



Human biomonitoring measures chemicals, their metabolites or reaction products in human tissues

Individual & Personal data



QUESTIONNAIRE

Very often

Often

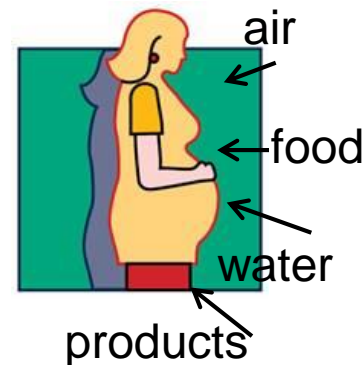
Sometimes

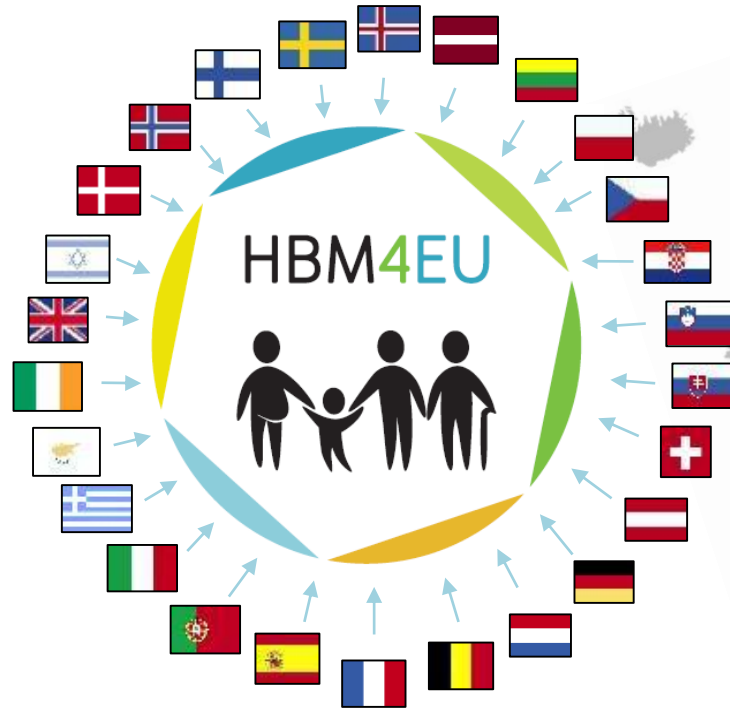
Rarely

EXPOSURE MARKERS

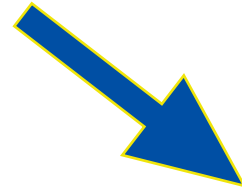
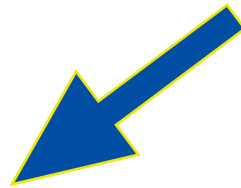
EFFECT MARKERS

HEALTH EFFECTS





science and policy
for a healthy future



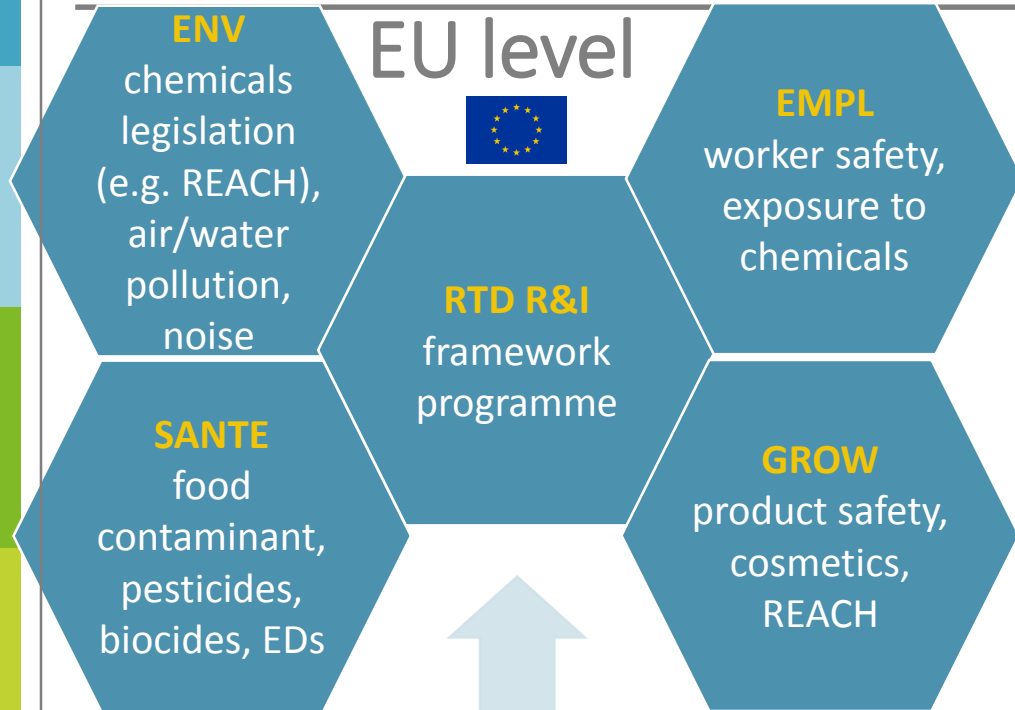
Answer open policy relevant questions as defined by EU Services and partner countries

Give policy makers a fast and easy access to results and data

Guide policy makers for translating results into policy actions

Answer policy relevant questions: involvement of policy makers

EU level



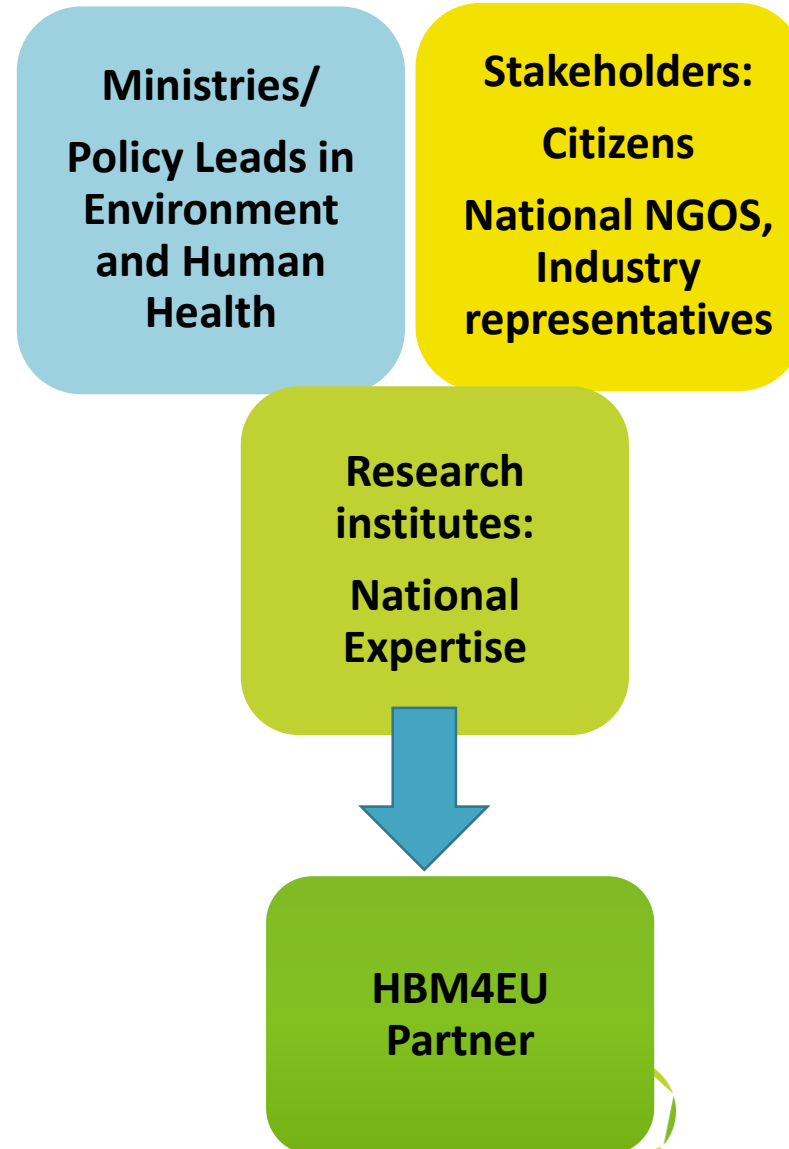
JRC
scientific and technical support

ECHA
REACH regulation

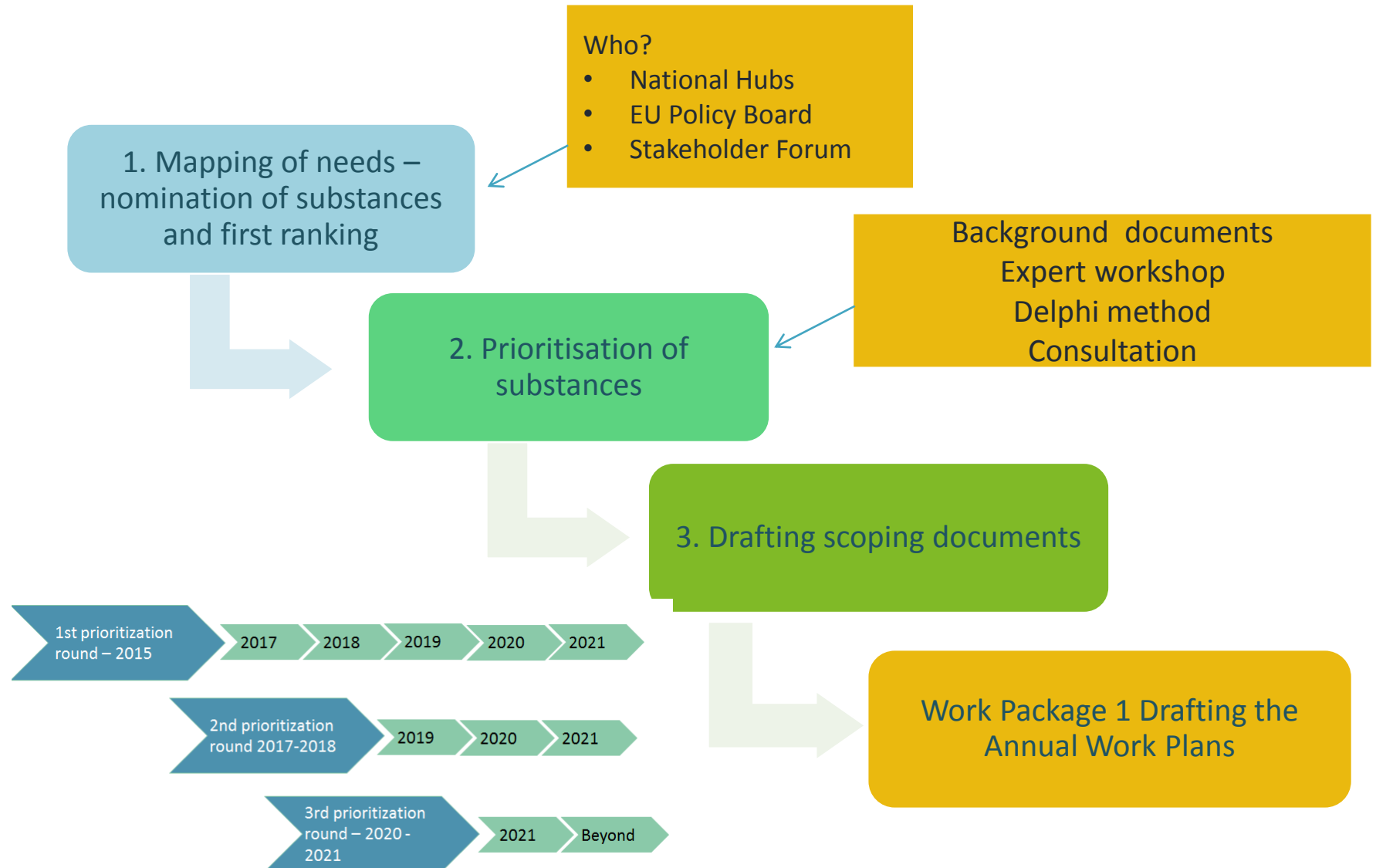
EEA
environment data, information, assessment

EFSA
risk assessment for food and feed

National hubs



Capturing information requests from policy makers



Prioritisation first round

Chemical family/Substances	Goals
Phthalates & Hexamoll [®] DINCH [®]	time trends, focus on substitutes
Poly/per-fluorinated compounds	baselines, time trends, support regulation, biomarkers of exposure and effect
Brominated & organophosphate flame retardants	baselines, time trends, support regulation, research on health impact
Bisphenol A, S and F	overall human exposure and exposure sources, possible further regulation
Cadmium and Chromium(VI)	overall human exposure and exposure sources, Cr(VI): possible geogr. variation
8 carcinogenic PAHs in REACH, 16 USEPA priority PAHs	overall human exposure, impact of PAHs on public health
Aniline derivatives	exposure of workers
Mixtures	identification of chemical mixtures, assessment of effects
Emerging substances	screening for new substances, non-targeted analysis

Study design

Collecting European data from past and ongoing studies

Design new targeted studies to fill in the data gaps

European representative data



- Specific age groups
- Sex
- From different EU regions: North, South, East, Owest
- From high and low population density areas
- Represent different socio-economic classes



- Data analysis at EU level
- Rapid access to data by policy makers
- Open access to research data - the right to access and reuse digital research data (H2020)

Give policy makers a fast and easy access to results and data

- Individual personal data: informed consent, ethical approvals
cfr . General Data Protection Regulation (GDPR)(Regulation (EU) 2016/679)
- Co-ownership of data and samples
- Publication rights



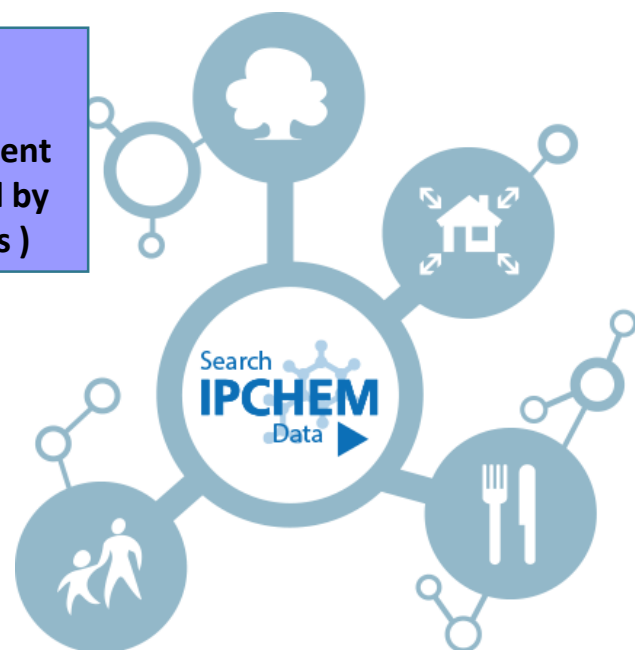
science and policy
for a healthy future



Data owner/provider:
IPChem Participation form
+ HBM4EU Data Transfer Agreement
+ Ethics approval + IC (+ approval by
local data protection authorities)

Data access and use:

- Data use agreement
- Granularity?
- Purpose of data use?
- User groups?



Guide policy makers for translating results into policy actions

Use of HBM results

Develop indicators:

- Spatial trends
- Time trends

Risk and Health impact assessment

- What are safe exposure values?
- % of population above safe exposure values?
- Health impact?

Participatory evaluation of results (policy makers/ scientists/ stakeholders)

- Results of concern?
- Possible domains for further actions

Thank you



HBM4EU is coordinated by the German Environment Agency,

Email: HBM4EU@uba.de

co-coordinated by VITO

Email: HBM4EU@vito.be

<https://www.hbm4eu.eu/>

<https://ipchem.jrc.ec.europa.eu/RDSIdiscovery/ipchem/index.html>



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 733032.

