



3rd Zero Pollution Stakeholder Platform meeting

11 October 2022



Agenda



| | |
|--------------|--|
| 11:30 | Welcome and introduction |
| 11:45 | Session 1: Supporting urban and regional zero pollution action |
| 13:00 | Lunch |
| 14:30 | Conclusion and summary by the co-chairs |
| 14:45 | Session 2 : Promoting zero pollution |
| 15:15 | Session 3: From good intentions to actions |
| 16:10 | Digital Solutions for Zero Pollution in cities and regions |
| 16:20 | Conclusions and next steps |
| 16:30 | End of meeting |



Welcome and introduction

Co-chairs



Session 1

Supporting urban and regional zero pollution action



EUROPEAN UNION



EU MISSIONS

CLIMATE-NEUTRAL & SMART CITIES

Concrete solutions for our greatest challenges



#EUmissions #HorizonEU #MissionCities

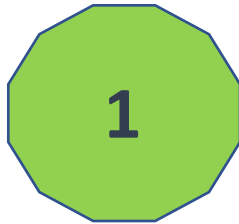


WHY A MISSION ON CLIMATE-NEUTRAL CITIES?

- **75%** of EU citizens live in cities (projected to increase to about 85% in 2050)
- More than **65%** of energy consumption and more than **70%** of CO2 emissions worldwide
- Rooted in **R&I** and oriented towards a concrete **target**
- Co-benefits – lower air/noise pollution (ZP agenda), more urban greening (biodiversity), less waste (circularity). Loveable and **livable cities!**
- The **European Green Deal** at local level: where policy meets people!
- Cities have the **ambition** to go further – we want to help cities achieve their goal of climate neutrality by 2030



OBJECTIVES OF THE CITIES MISSION



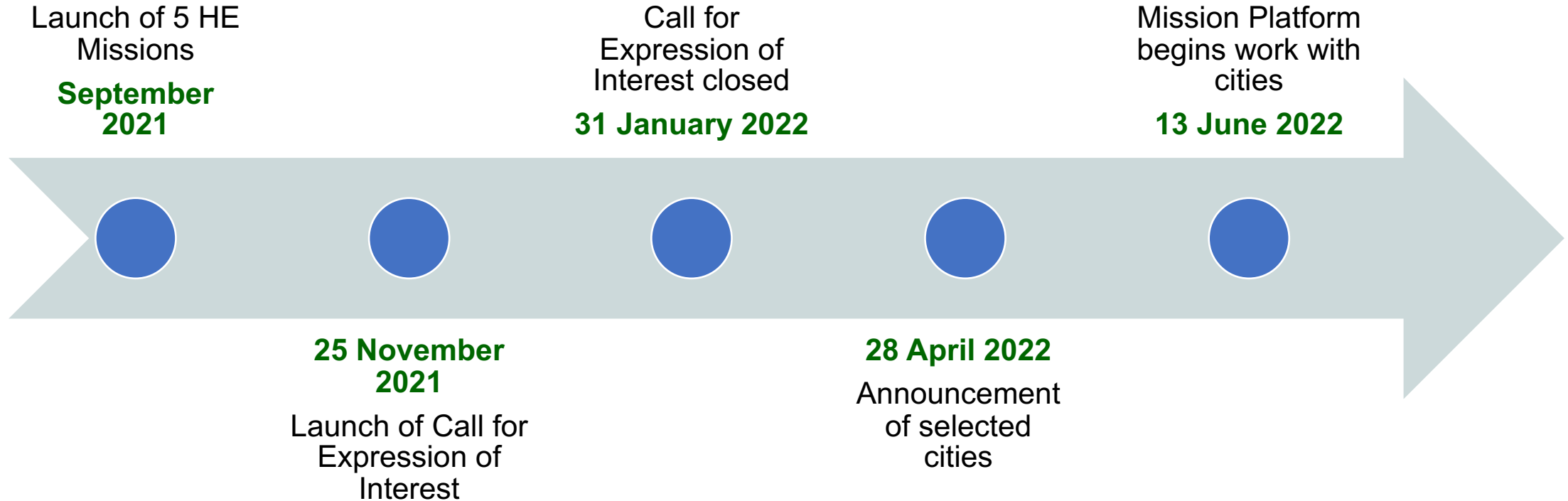
Deliver at least 100 climate-neutral and smart European cities by 2030;



Ensure that these cities act as experimentation and innovation hubs to put all European cities in a position to become climate-neutral by 2050.



TIMELINE





SELECTED CITIES (MISSION CITIES)

- 100 EU cities selected from all Member States and of different types (size, current emissions, level of preparedness), representing 12% of the EU population.
- +12 cities from associated countries.

EU27

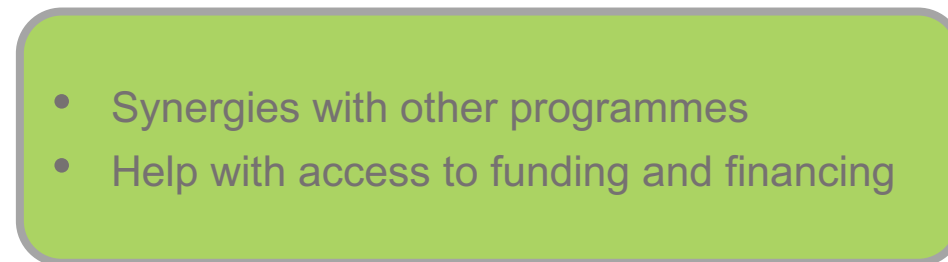
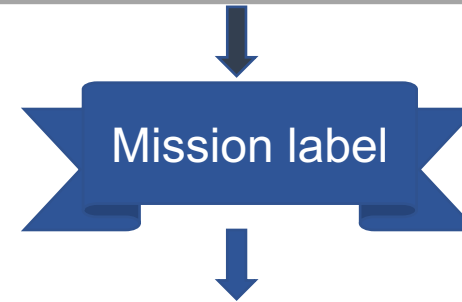


Associated countries





MAIN ELEMENTS OF THE MISSION





FUNDING AND FINANCING

- Individual **investment plan** to be developed with help of the Mission Platform as part of CCC
- Support expected from different **EU funding programmes**
- Cooperation with the **European Investment Bank Group, EBRD** and national Promotional Institutions
- **Private investors** (individuals, private companies, commercial banks)
- **EU sustainable finance agenda** offers new opportunities to encourage investors to invest locally



SYNERGIES WITH OTHER PROGRAMMES FOR CITIES

- The Mission will not replace involvement in other programmes, but **build synergies** with them
- All **relevant initiatives** in which cities are participating and relevant to the Mission's objective are taken into account
- Close cooperation in particular with the **Covenant of Mayors** (for example use of monitoring methodology), the **European Urban Initiative** and the **New European Bauhaus**
- Over 30 of the Mission cities are or have been involved in **European Green Capital / Leaf awards, and the Green City Accord**. Opportunities under the Mission are being presented to these networks, and future synergies being considered.



LINKS WITH THE NEW EUROPEAN BAUHAUS

- **Core values:** Sustainability - Inclusion – Aesthetics
- One of the actions identified by citizens and stakeholders during the **design phase:** reducing exposure to pollution
- **Thematic axes** for transformation include (1) reconnecting with nature and (2) prioritising the places and people that need it most
- **Horizon Europe:**
 - NEB: “The impact of light and noise pollution on biodiversity” and “Eco-friendly consumer products, linked to low-toxicity and zero pollution construction”
 - Linking NEB and the Cities Mission: Project “CReating Actionable FuTures” (CRAFT)
 - Linking the Cities Mission and the Climate Adaptation Mission: Urban Renaturing and Greening



PRIORITIES FOR THE CITIES MISSION

Special focus on:

1. **Climate City Contracts** and the **Mission Label**
2. Fostering **national and regional networks**
3. Unlocking **synergies between programmes** for cities and between Missions



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NET ZERO CITIES

EU MISSION PLATFORM | CLIMATE NEUTRAL AND SMART CITIES



EU CITIES MISSION

Call for Pilot Cities is now open!

**EU
MISSIONS**

€32m call launched 05/09

Open to all EU cities (not just 100 Mission cities)

Deadline 4 November

NetZeroCities is launching a groundbreaking programme that tests new approaches to reaching climate neutrality goals across cities in Europe. This Pilot Cities Programme is part of the EU Mission for 100 climate-neutral and smart cities ("EU Cities Mission"), providing €32 million in grants and hands-on support to cities. The call opens on September 5 and invites applications from all cities that are committing to the objectives of the EU Cities Mission and are located in EU Member States and Associated Countries.

The Pilot Cities Programme will help cities as they test out locally tailored actions towards a climate transition. Selected cities will be provided with grants funded under Horizon 2020, the European Commission's 2014-2020 Framework Programme for Research and Innovation (R&I). Cities will receive such support in the amounts of € 0.5 million, € 1 million, or € 1.5 million in order to deploy and scale up R&I and systemic solutions.

<https://netzerocities.eu/call-for-pilot-cities/>



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Thank you!

#EUmissions

#HorizonEU

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Financing urban and regional innovation for zero pollution



Governance in frontrunner cities for zero pollution innovations: actions and lessons learned



Conclusions and summary

Key urban innovation needs and opportunities identified

Co-chairs



Session 2

**Promoting zero pollution across regions
and through a Scoreboard of EU regions'
green performance**



The 8th Cohesion Report

Chapter 3 - A greener, low-carbon Europe

3rd meeting of the Zero Pollution Stakeholder Platform

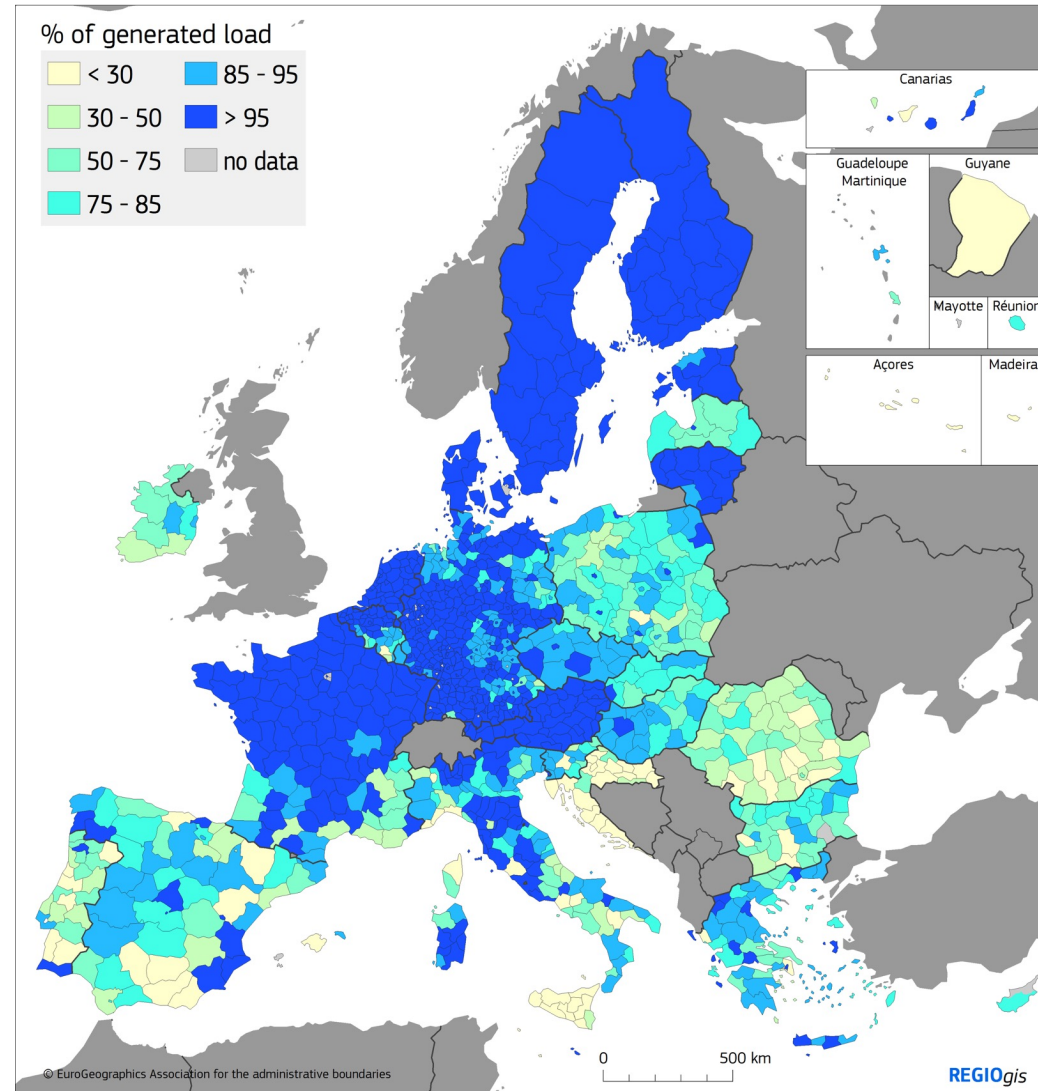
DG for Regional and Urban Policy

The 8th Cohesion Report

- Cohesion Report is a Treaty obligation – published every 3 years
- It informs on the progress made towards achieving economic, social and territorial cohesion
- The report does not focus on cohesion policy, except for some aspects related to its impact on EU regions and territories
- It is meant to kick-off of a debate on the future of cohesion policy

More investment needed to treat waste water

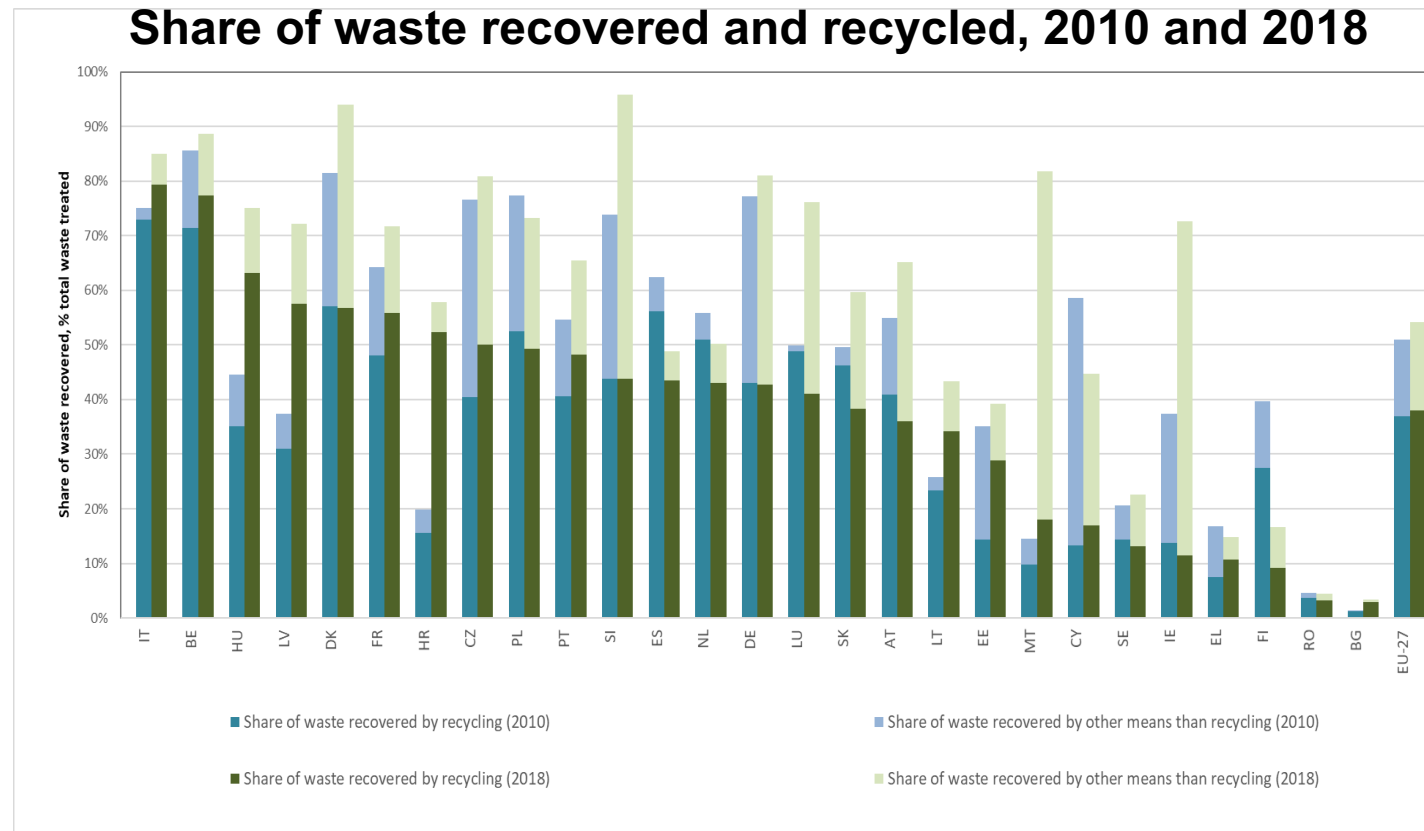
- Good progress regarding collection of waste water with more than 98% of urban wastewater collected in 2018
- Only 40% of water bodies are in a good ecological state
- Almost 79% of regions in EU provide at least secondary treatment to 90% of their urban wastewater...
- ... but only 59% of EU regions provide more stringent treatment
- Less than 30% of urban wastewater receives more stringent treatment in many places



Urban wastewater with more stringent treatment, 2018

Waste production remains high but more is recovered

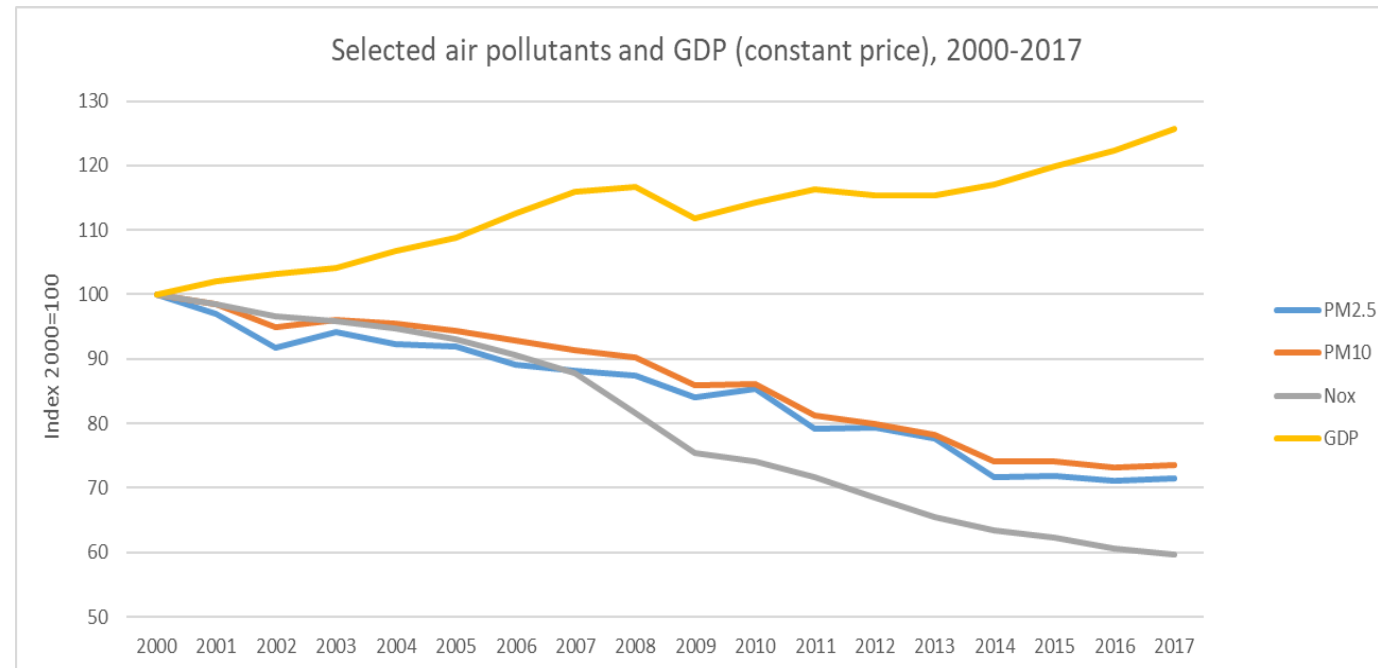
- In 2018, more than 2.3 billion tons of waste were produced in the EU, i.e. around 5.2 tons per person.
- Waste management has been slowly improving. The share of waste recovered increased from 46% in 2004 to 54% in 2018.
- The share of waste recycled has slightly increased in the EU-27, from 37% of total waste treated in 2010 to 38% in 2018.
- Recycling reaches respectively 79% and 77% of waste treated in Italy and Belgium but it is above 50% in only 8 MS. In BG and RO, only 3% of waste is treated by recycling



Air quality has improved, but more needs to be done

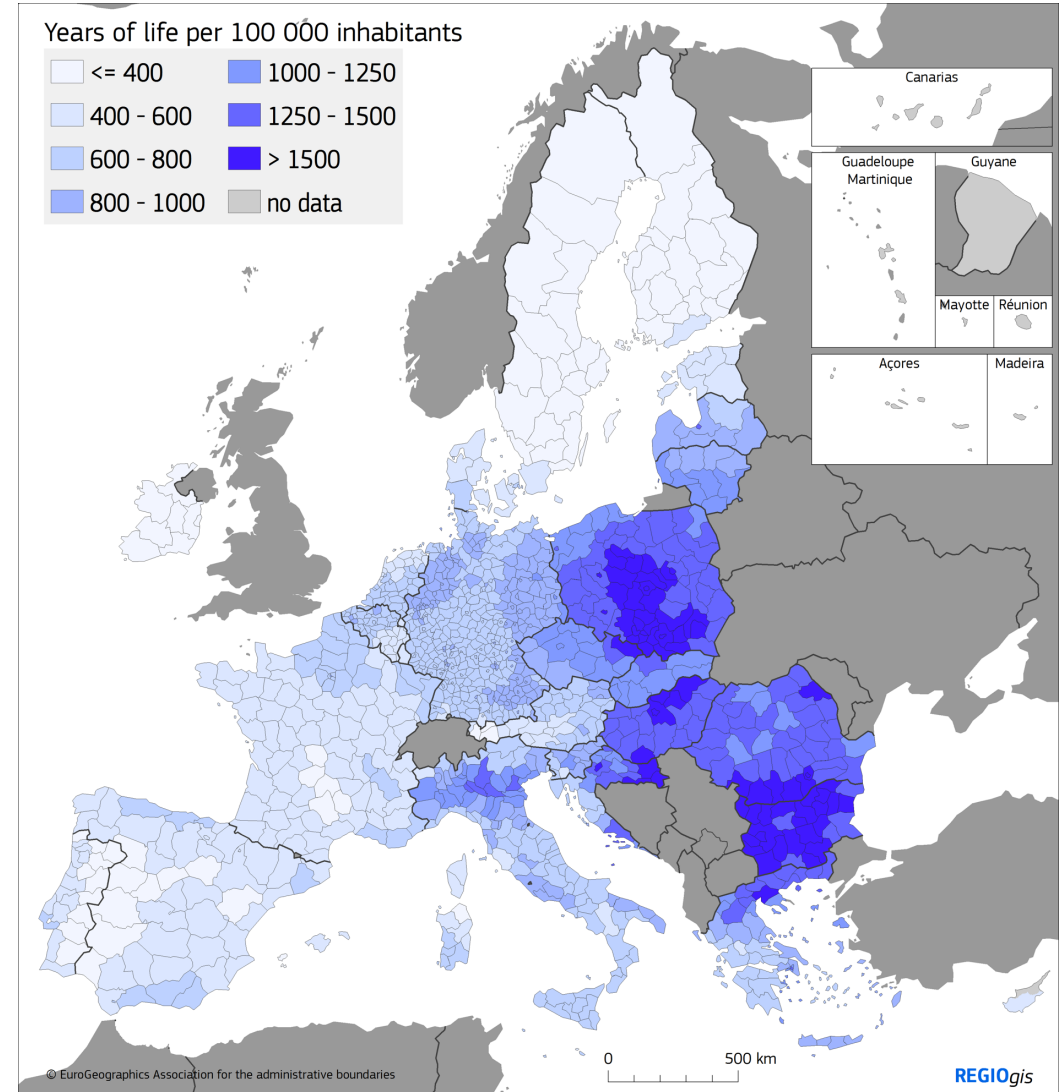
- Emissions of most main air pollutants fell in the EU
- Substantial efforts are still needed to reduce emission levels to meet the 2030 reduction targets
- The areas where the impact on health is greatest are those with the highest concentrations, which also tend to be regions with low GDP per head

Emission of selected air pollutants and GDP, EU-27



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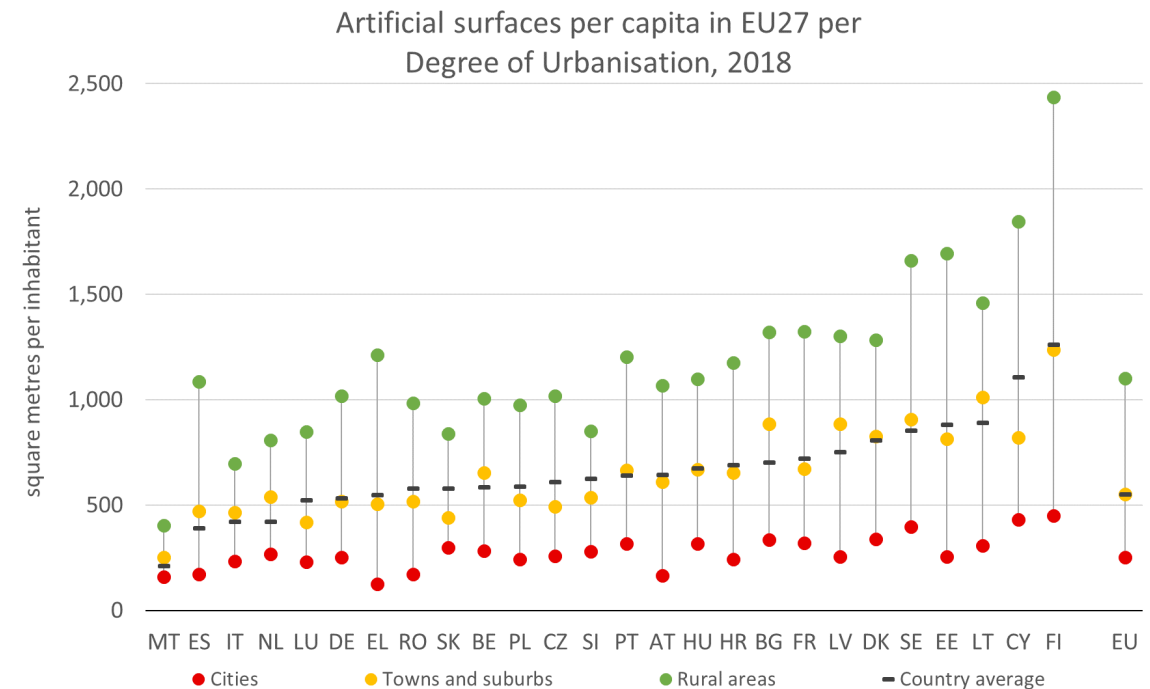
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Years of life lost attributed to exposure to PM 2.5, 2018

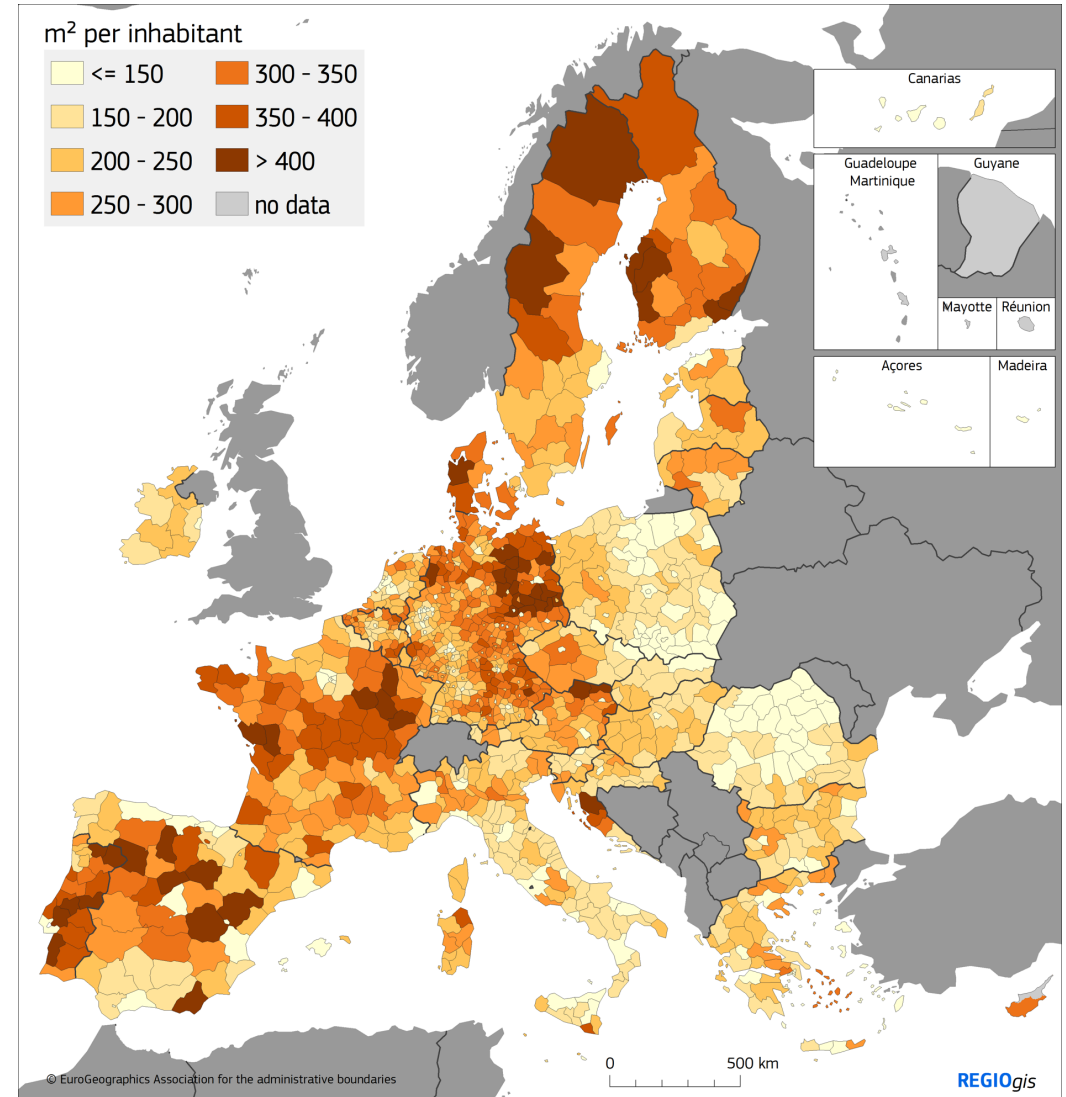
More investment needed to protect soils

- Soil sealing is a major concern as it results in the loss of many of the functions that soil performs.
- Sealed areas per inhabitant is much lower in most regions in eastern Europe than in western Europe (France, Spain, Portugal and Germany).
- Per inhabitant, land classified as built-up areas and transport infrastructure is also higher in rural areas than in cities.
- It remained the same in EU cities while it increased significantly in rural areas.



More investment needed to protect soils

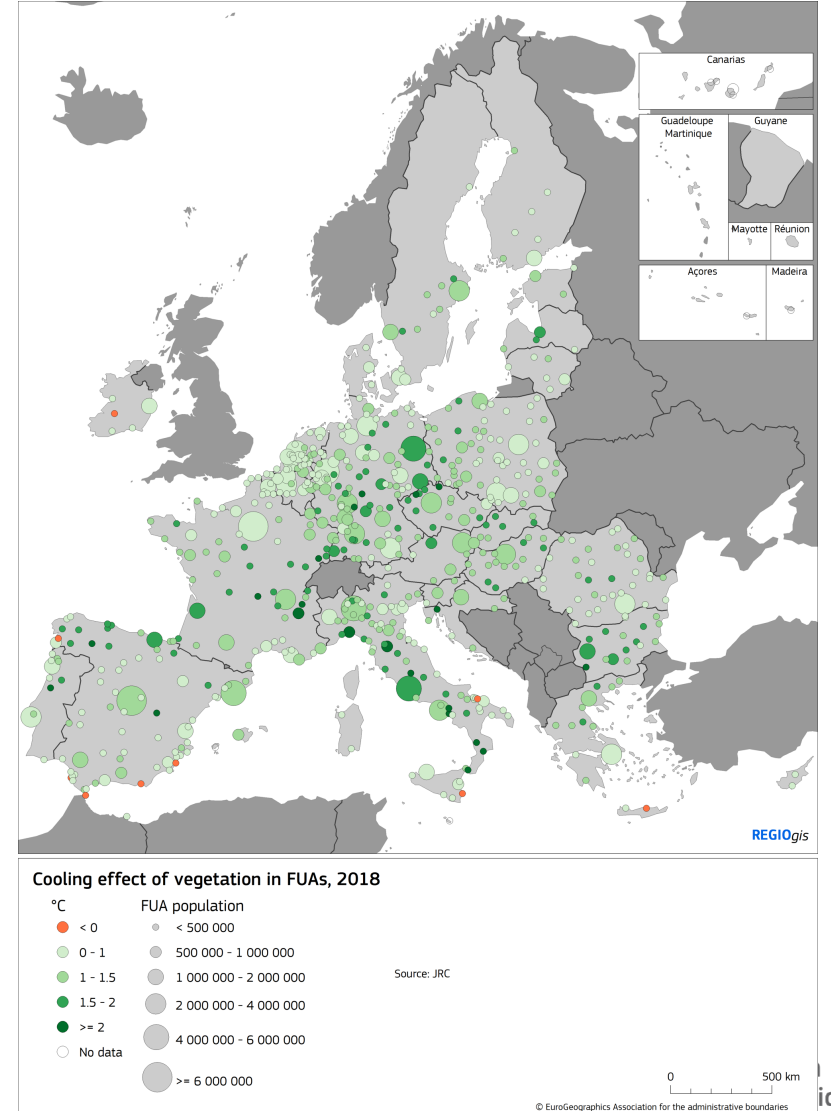
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Imperviousness per inhabitant, 2018

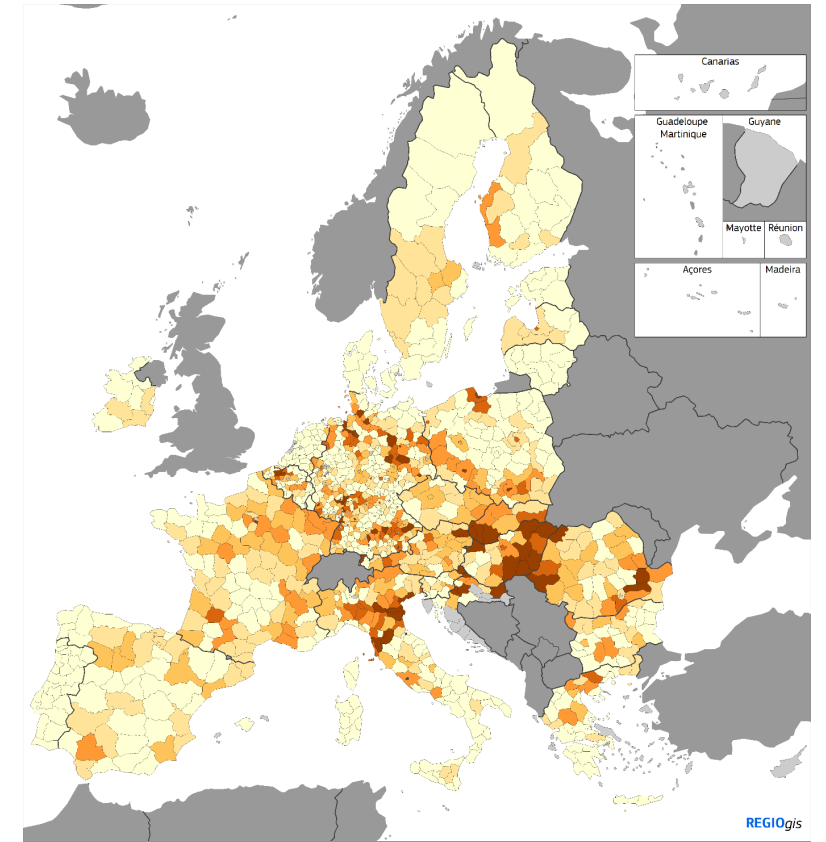
More investment needed to restore ecosystems and develop and nature-based solutions

- Healthy ecosystems are necessary to halt biodiversity loss
- They also deliver important services (food, pollination, carbon sequestration, ...)
- Provide solutions to some key environmental challenges :
 - mitigation of natural disasters (e.g. flood)
 - reduce urban heat island effect
- On average, European cities would be up to 5°C hotter without vegetation.
- Almost half of the urban population does not live close enough to urban green areas to benefit from temperature reduction by trees and urban forests

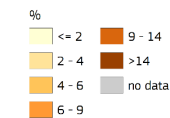


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- Provide solutions to some key environmental challenges :
 - mitigation of natural disasters (e.g. flood)
 - reduce urban heat island effect
- Some 13% of built-up areas in the EU are located in flood plains, so requiring protection from floods
- The ecosystem deficit shows that for 68% of these areas, or 9% of the total built-up area in the EU, flood risk could be reduced by improving upstream ecosystems
- Sustainable ecosystem management to reduce the risk of floods is a priority



Artificial areas with ecosystem deficit, 2012



Source: JRC

0 500 Km

© EuroGeographics Association for the administrative boundaries

Conclusions

- The EU faces unprecedented challenges of environmental sustainability:
 - Depletion of scarce resources and various forms of pollution, with the associated risk to human health and well-being
 - Degradation of ecosystem services
 - Accelerating biodiversity loss
- There are good news (e.g. water and air quality improved) but also still lots of efforts to be done
- Regions/territories widely differ in the challenges they face. The appropriate level of intervention is to a large extent regional/local.

Thank you



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European Committee
of the Regions

**Promoting zero pollution
across regions**

***Towards a Scoreboard of
EU regions' green performance***

3rd Zero Pollution Stakeholder Platform





Flagship 3 - *Promoting ZP across Regions*

Towards a **Scoreboard of EU regions' Green Performance** :

- By **2024**, jointly with **Committee of the Regions**
- To assess **efforts of EU regions towards ZP targets, and**
- To award for the **Green Region of the Year**, *in synergy with REGIOSTARS*, in view of
 - **raise awareness of civil society** on time progress of ZP performance of regions
 - contribute to a **ZP race for administrations, business including tourism**





EU Frameworks



- 8th EU Cohesion Report;
- 2022 Regional Yearbook, SGD Report (ESTAT)
- *Quality of life in European Cities - Survey*
- Knowledge Centre for Territorial Policies
- Link Monitoring Indicators in *Green City Accord*
- 8th Environmental Action Programme
- EEA's model 'pressure, state and impact'
- Zero Pollution Monitoring & Outlook





Key actors and Process



EU

Member States

Regions

Cities and municipalities

Zero Pollution Monitoring and Outlook



Scoreboard of EU regions' green performance



Green City Accord monitoring





Challenges and Opportunities



- Purpose, added value and use
- Aggregation and Weighing
- Distance to target vs. efforts
- Data availability and digestion





Timelines



2022

- State of the art on region's work
- Scoping Study

2023

- Stakeholder Workshop (Q1)
- Scoreboard Conceptual Framework
- Data collection

2024

- Assessment
- Publication of first pilot scoreboard





Discussion



- Expectations on a new scoreboard for regions
- Your score on zero pollution performance in your region – ZP criteria and indicators to assess regional performance?
- Scoreboard Added value - take into account cohesion/REGIOSTAR criteria
- Positive Messages/Use linked to scoreboard
- Use of ZP scoreboard by EU citizens, administrations, business or other stakeholders
- Links btw the scoreboard development for regions (flagship 3) and other flagships on Zero Pollution Monitoring





Session 3

From good intentions to actions: towards phasing out pollution from pharmaceuticals in cities and regions



Progress and plans on the strategic approach on pharmaceuticals in the environment

European Commission, DG Environment
3rd Zero Pollution Stakeholder Platform meeting
11 October 2022

Strategic Approach to Pharmaceuticals in the Environment

adopted March 2019

Six Areas of Action, 33 actions in total

- Increase Awareness and Promote Prudent Use of Pharmaceuticals
- Support Development of Pharmaceuticals Intrinsically Less Harmful for the Environment and Promote Greener Manufacturing
- Improve Environmental Risk Assessment and Its Review
- Reduce Wastage and Improve the Management of Waste
- Expand Environmental Monitoring
- Fill other Knowledge Gaps

Strategic Approach to Pharmaceuticals in the Environment

Update on Progress and Implementation

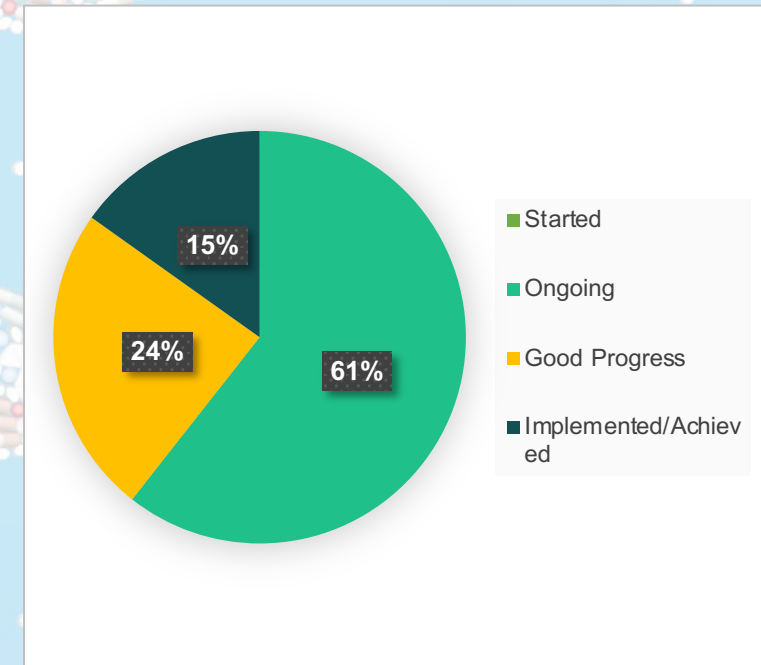
- Published November 2020 together with **Pharmaceutical Strategy**

- <https://ec.europa.eu/environment/water/water-dangersub/pharmaceuticals.htm>

- Positive reception in EP and Council
(but desire for more legislative measures)

- Overall good progress

- All actions at least started
- Many ongoing, some already completed



Strategic Approach to Pharmaceuticals in the Environment

Update on Progress and Implementation

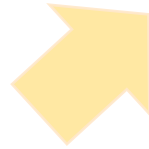
- Proposal for a **Revision of Industrial Emission Directive (April 2022)** – broader scope e.g intensive rearing sector
https://environment.ec.europa.eu/publications/proposal-revision-industrial-emissions-directive_en
- **Revision of Water Framework Directive/Environmental Quality Standards Directive/ Groundwater Directive** (adoption foreseen on 26 October 2022, see slides no 5,6,7)
- **Revision of Urban Waste Water Treatment Directive** (adoption foreseen on 26 October 2022, see slides no 8,9,10)
- **Evaluation of Sludge Directive** – evaluation finalised, **adoption foreseen soon** ; important to reduce presence of pharmaceuticals in sludge.
- **IPCHEM** (Info platform chemical monitoring) now contains better data on pharmaceuticals
[IPCHeM Portal \(europa.eu\)](https://ipchem.europa.eu)
- **Taxonomy** work - pharmaceutical sector identified as substantially affecting pollution

Strategic Approach to Pharmaceutical in the Environment

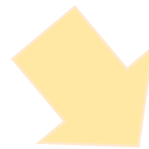
Revision of Water Framework Directive/Environmental Quality Standards Directive/Groundwater Directive

Purpose of revision:

- a legal obligation under existing legislation
- the legislation needs to be adapted to current pollution threats
- 2019 Fitness Check concluded that the key area to improve and to achieve better results is on chemicals.



Surface water: revision of Environmental Quality Standards (EQS) either because they may no longer be appropriate and/or no longer represent an EU-wide risk or for substances not covered so far



Groundwater: several substances identified by the Groundwater watch list as groups of (emerging) pollutants of concern to be added in the Annexes of the Groundwater Directive

Strategic Approach to Pharmaceutical in the Environment

Revision of Water Framework Directive/Environmental Quality Standards Directive/Groundwater Directive

Surface water

- Pharmaceuticals:

Hormones (e.g. Estrone

Antibiotics (e.g. erythromycin)

Painkillers (e.g. ibuprofen)

- Antimicrobial resistance genes

Groundwater

- Pharmaceuticals

Carbamazepine

Sulfamethoxazole

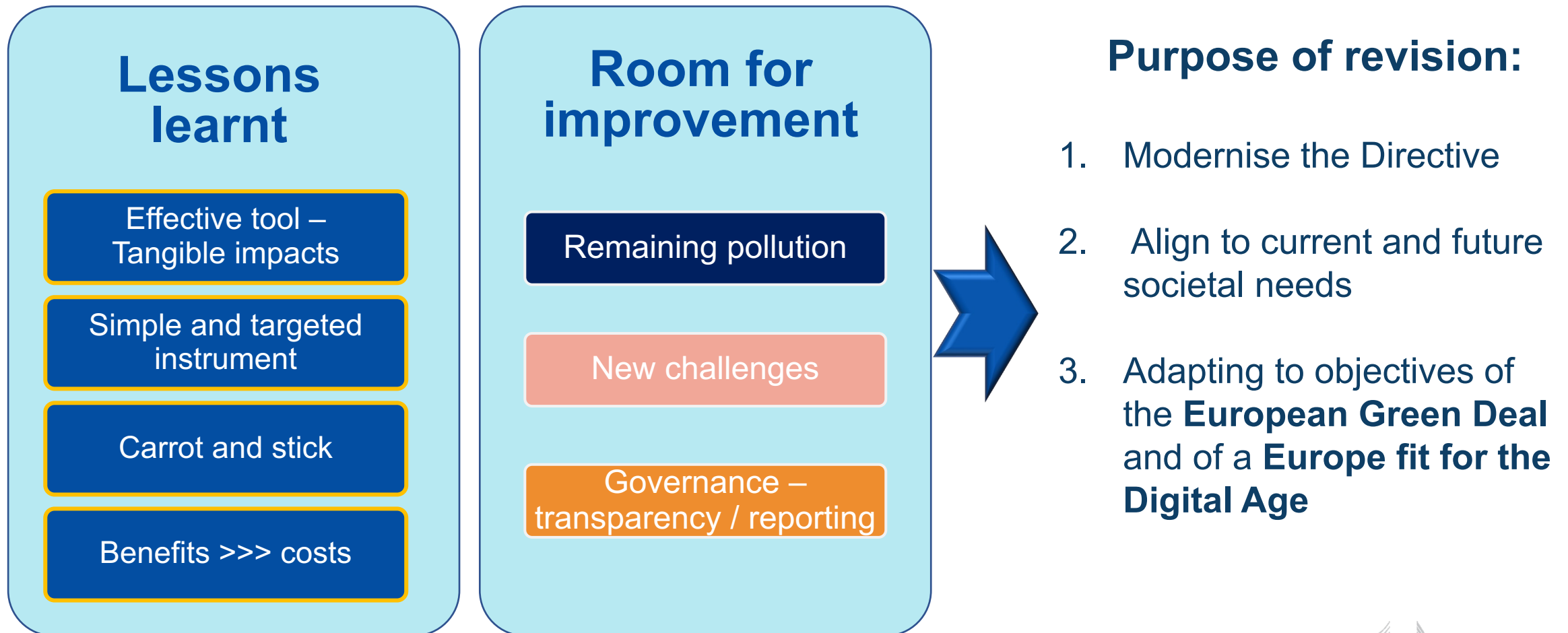
Pharmaceutical active substances – total



Strategic Approach to Pharmaceutical in the Environment

Revision of Urban Waste Water Treatment Directive (UWWTD) - 91/271/EEC

Impact assessment



Strategic Approach to Pharmaceutical in the Environment

Revision of Urban Waste Water Treatment Directive (UWWTD) - 91/271/EEC

Three key areas for the review

Remaining pollution from urban sources

Urban run-off, stormwater

Small agglomerations

Individual Appropriate Systems

Compliance

New challenges

Micro pollutants

GHG, Energy use

Sludge

Health

Modernisation and Governance

Transparency

Reporting

Affordability, producer responsibility

Access to sanitation

Thank you

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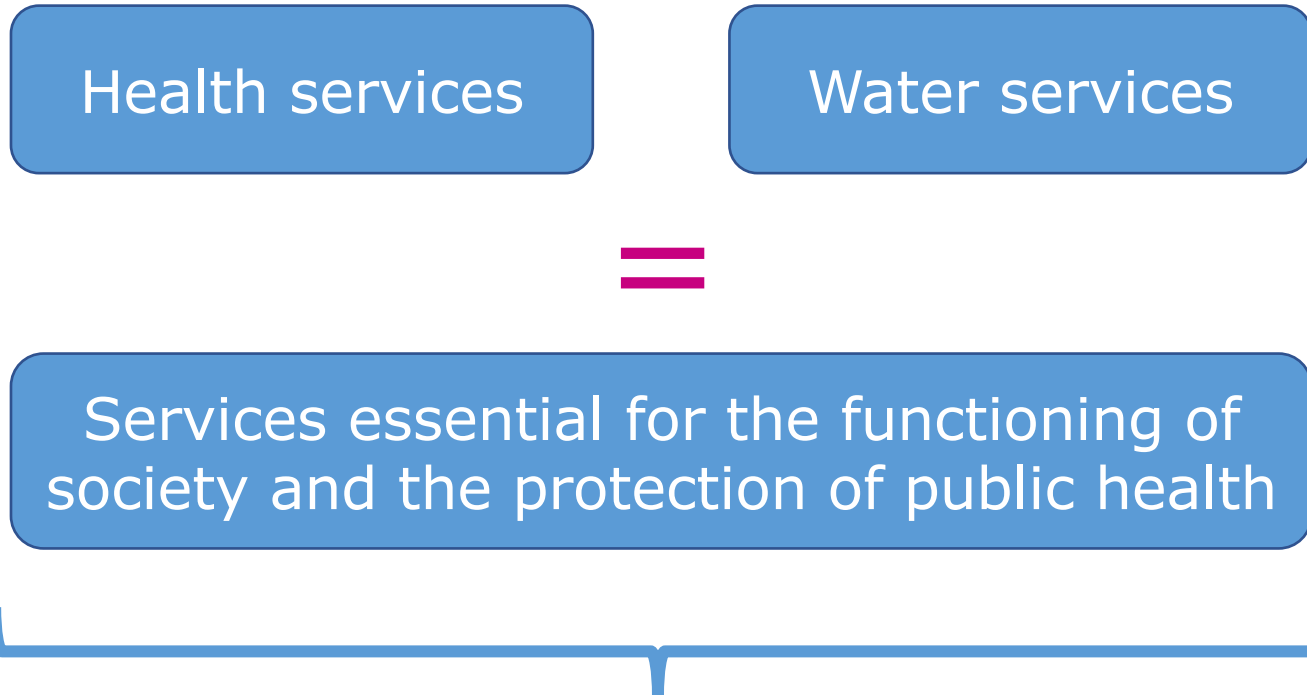


Progress on implementing the Pharmaceuticals Strategy and environmental dimension in the revision of pharmaceutical legislation



**3rd Zero Pollution Stakeholder Platform meeting
From good intentions to actions: towards phasing
out pollution from pharmaceuticals**

Starting point 1



- **All value chain members must contribute to minimising PiE**
- **The Water Sector is willing to contribute**

Starting point 2

Existing EU rules and commitments must be respected

- **Article 191.2 (TFEU)**
- Article 9.1
(directive 2000/60/EC),
- Zero Pollution Action Plan
- Opinion of the European Court of Auditors on the implementation of the Polluter Pays Principle (2021)
- Council Conclusions regarding the European Court of Auditors' report on the implementation of the Polluter Pays Principle (2021)



What is the overall progress made in the environment and health area?

- ~ Many successful take-back schemes for unused pharmaceuticals
- ~ EU pharmaceutical legislation weak (no extended ERA, limited data accessibility, no environmental consideration in API authorisation, no measures for limiting marketing or OTC for most hazardous API)
 - Call for evidence: measures on OTC?
- ~ UWWTP: Numerous pilot and large-scale plants with micropollutants removal, limited to a few countries

Have we succeeded in involving all relevant stakeholders, where is additional effort needed?

- ~ No real European dialogue
- ~ Most advanced national dialogue: NL
- ~ Other dialogues: DE, SE
- ~ Involvement of full value chain necessary (patients, hospitals, doctors, pharmacies, producers, NGOs, water sector)



What are remaining gaps? Where are additional steps needed in order to minimise the pharmaceutical in the environment?

- ~ Stronger pharmaceutical legislation
- ~ EPR scheme for advanced treatment at WWTP
- ~ Environmental, climate and cost analysis of abating measures (for example: advanced waste water treatment because of one single substance?)
- ~ Impact of new requirements for WWTP on raw material prices (for example: activated carbon)

Thank you for your attention



EurEau

Rue du Luxembourg 47-51,

B-1050 Brussels, Belgium

Tel: +32 (0)2 706 40 80

Fax: +32 (0)2 706 40 81

BE 0416 415 347

secretariat@eureau.org

www.eureau.org

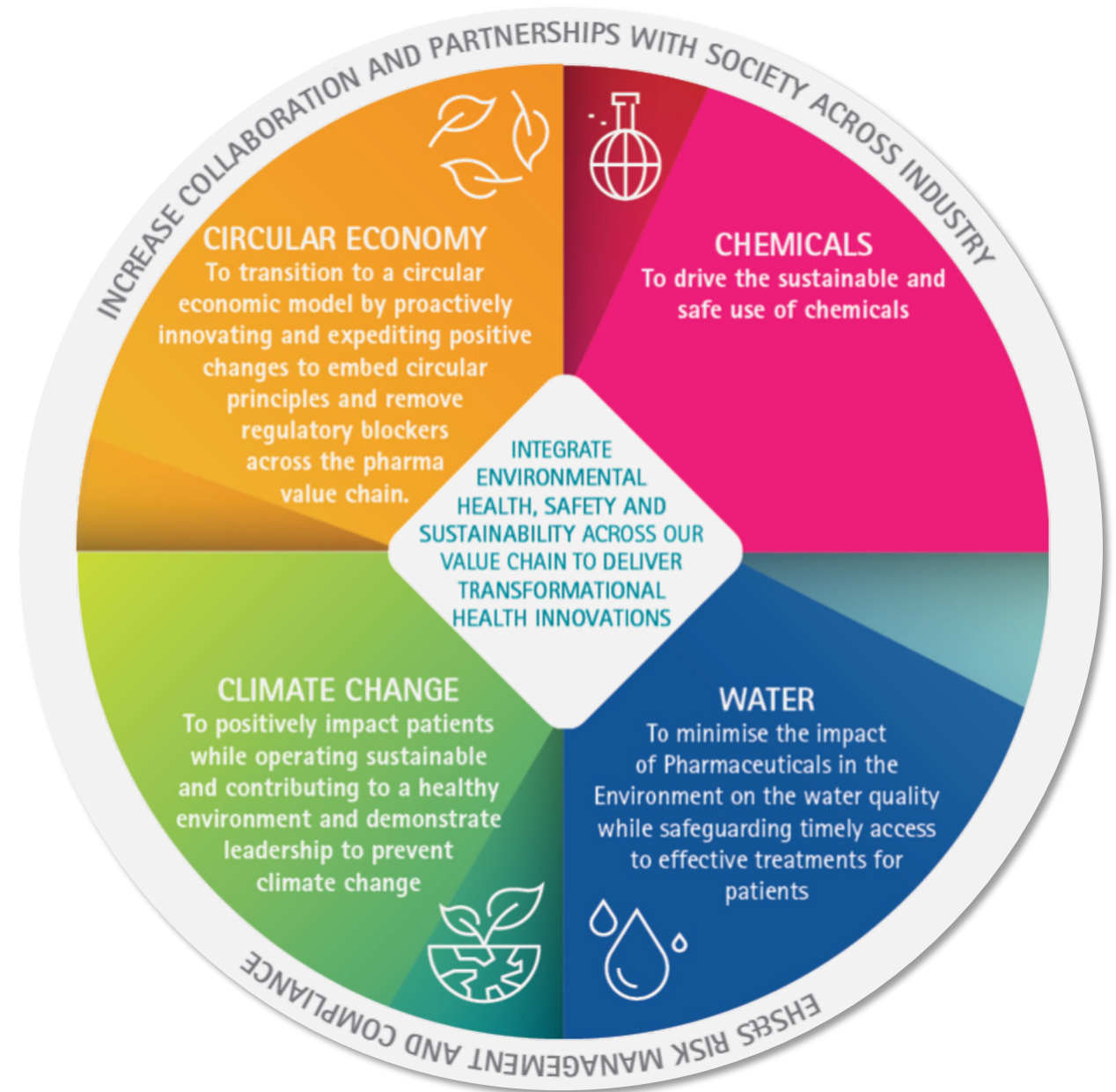
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3rd Zero Pollution Stakeholder Platform meeting

***FROM GOOD INTENTIONS TO ACTIONS:
View of the Industry (AESGP & EFPIA) on PiE***

Sustainability strategy of the pharmaceutical industry in the context of the EU Green Deal and the Zero Pollution Action Plan



DRUG PRODUCT

1. RAW MATERIAL

- Non Hazardous Materials

2. DESIGN

- Biodegradable
- Green Chemistry Principles
- Dosage optimisation
- Maximise Shelf Life

3. PRODUCTION

- Green energy at production facilities
- Carbon footprint of production
- Maximise API vs raw material efficiency
- Minimise API emissions

4. DISTRIBUTION

- Apply Green Logistics
- Carbon footprint of distributor(s)
- Manufacture at point of use

5. CONSUMPTION, USE, REUSE, REPAIR

- Dosage & Pack size optimization
- 'Personalised' medicines
- Promote Patient Compliance (particularly for Chronic conditions).

6. COLLECTION

- Incineration of Drug product waste
- Take Back Schemes
- Education of Patient

7. RECYCLING

- Develop certified drug recycling programs

DEVICES

1. RAW MATERIAL

- Non Hazardous Materials
- Certified or Recycled Materials.

2. DESIGN

- Reusable or refillable
- Less Material Variation
- Maximise life of the device
- Build LCA/DfE into Design Process

3. PRODUCTION

- Suppliers to meet sustainability criteria
- Minimise Env. footprint of production
- Local sourcing of parts

4. DISTRIBUTION

- Apply green logistics
- Carbon footprint of distributor(s)

5. CONSUMPTION, USE, REUSE, REPAIR

- Offer repair options
- Maximise dose for each device.

6. COLLECTION

- Segregate waste at source to optimise recycling
- Consider Take Back Schemes

7. RECYCLING

- Use recyclable packaging
- Clear recyclability signs on packaging



PACKAGING

1. RAW MATERIAL

- Non Hazardous Materials
- Certified or Recycled Materials.

2. DESIGN

- Optimise Packaging Size
- Less material variation
- Design to minimise secondary/tertiary packaging

3. PRODUCTION

- Suppliers to meet sustainability criteria

4. DISTRIBUTION

- Local Sourcing
- Apply green logistics
- Carbon footprint of distributor(s)

5. CONSUMPTION, USE, REUSE, REPAIR

- Maximise consumption on packaging lines
- Reuse transport packaging

6. COLLECTION

- Segregate waste at source to optimise recycling
- Consider Take Back Schemes

7. RECYCLING

- Use recyclable packaging
- Clear recyclability signs on packaging

RAW MATERIALS

1. RAW MATERIAL

- Non Hazardous Materials

2. DESIGN

- Biodegradable
- Green Chemistry Principles
- Use approved schemes e.g. Palm Oil

3. PRODUCTION

- Green energy at production facilities
- Carbon footprint of manufacturer
- Maximise mass production efficiency
- Minimise hazardous production methods
- Secondary raw materials

4. DISTRIBUTION

- Apply Green Logistics
- Carbon footprint of distributor(s)
- Manufacture at point of use

5. CONSUMPTION, USE, REUSE, REPAIR

- Recirculation of solvents
- Reuse of catalysts

6. COLLECTION

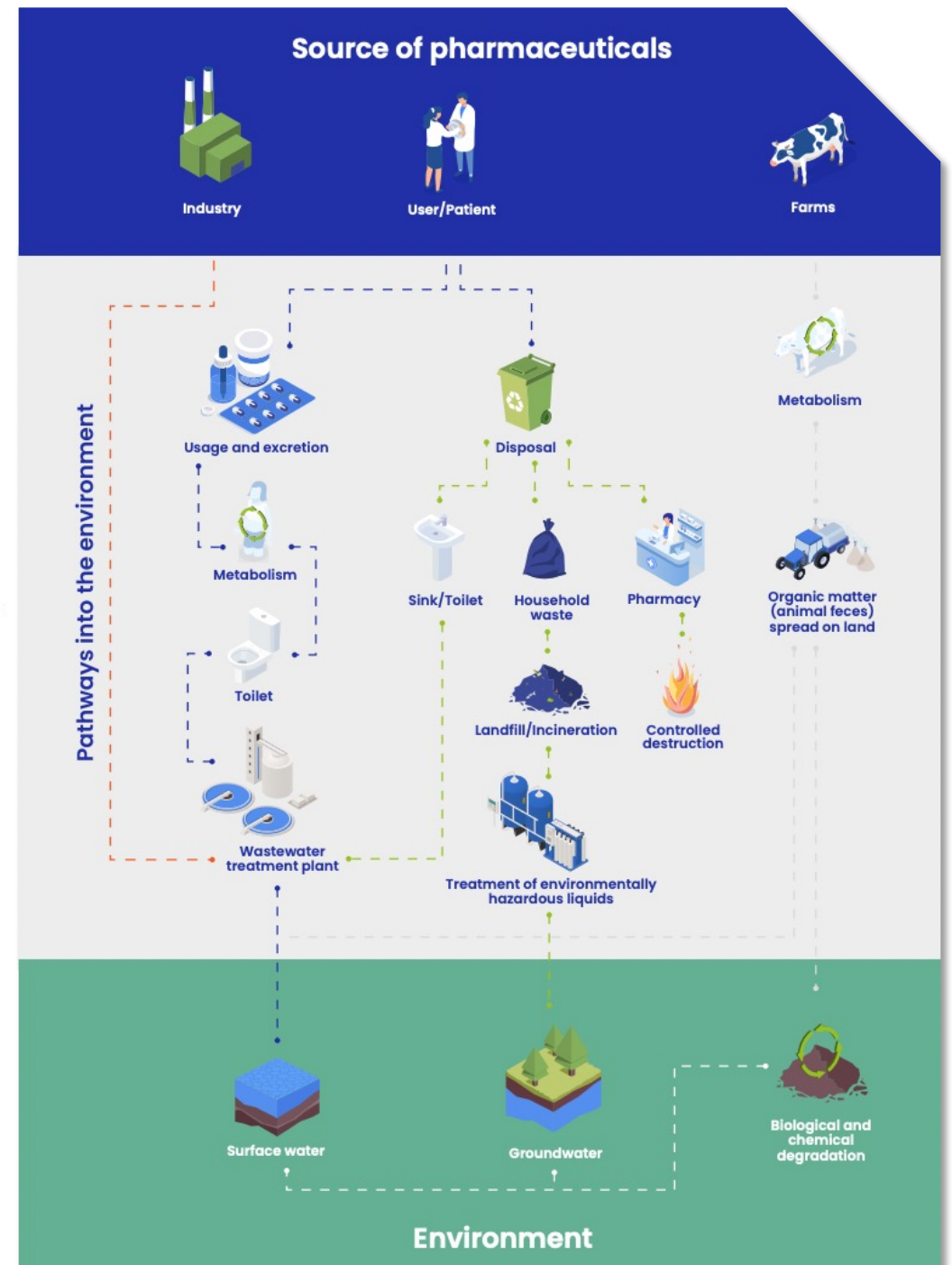
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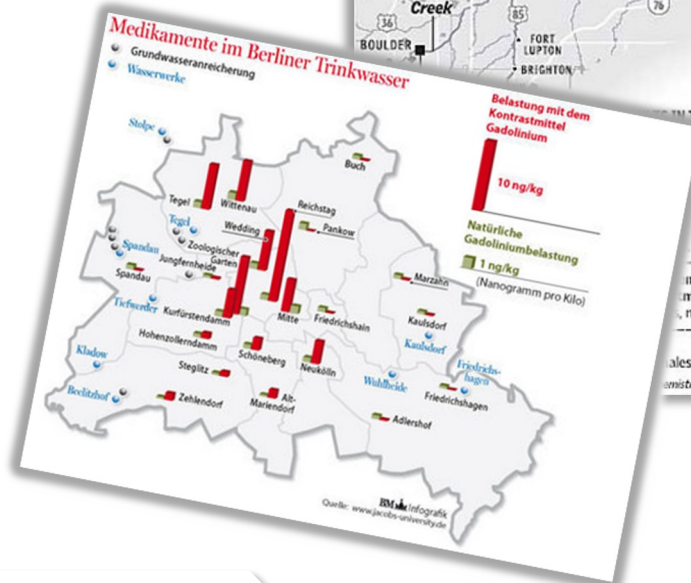
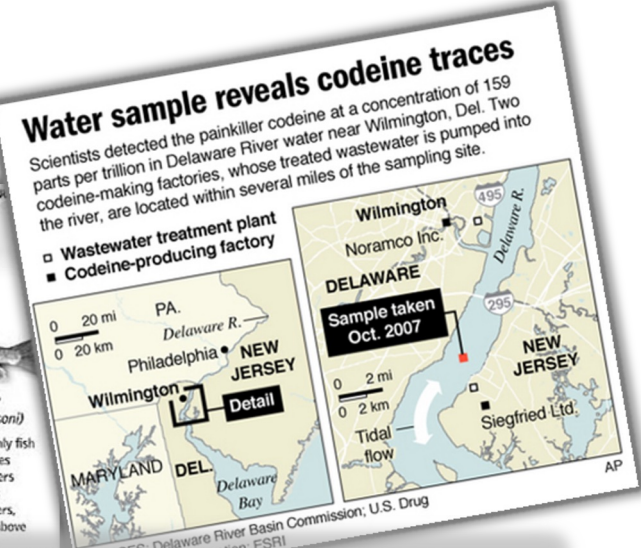
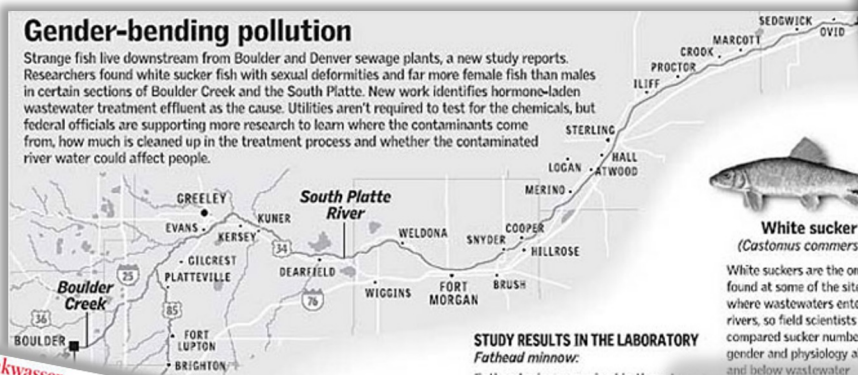
- Solvent reuse
- Re-use of water for primary rinses
- Re-use of bi-products and waste streams for other purposes
- Recycling of metals (esp PGMs)

Origins of PiE

- - - - In Europe only trace levels can be attributed to waste from production.
- - - - A smaller fraction comes from the expired or unused medicines that are not correctly disposed of.
- - - - The largest part is a result of normal patient and consumer use and excretion into wastewater treatment systems. The exact percentage however varies, depending on the medicines characteristics.



Pharmaceuticals in the Environment: Occurrence



STUDY RESULTS IN THE LABORATORY

Fathead minnow: Fathead minnows raised in three types of water: Boulder wastewater effluent, half effluent and half upstream water from Boulder Creek and upstream water.

After 7 days: In the effluent and effluent, males begin producing a female sex hormone at levels higher than males.

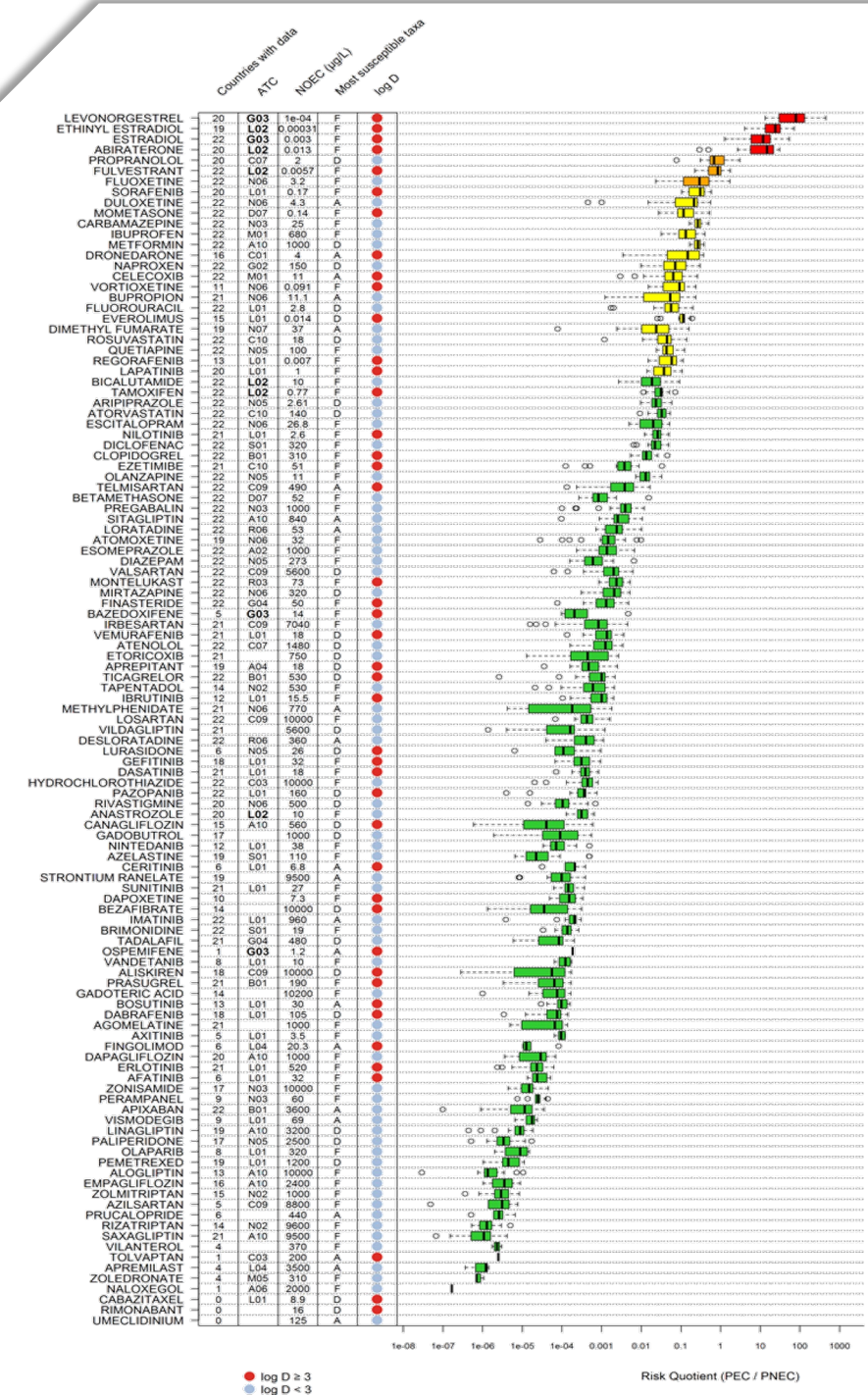
After 14 days: In the effluent and effluent, males begin to lose their "nuptial tubercles," whisker-like appendages associated with mating.

After 28 days: In the effluent and effluent, male testes diminish significantly in weight because they no longer producing sperm.



Occurrence \neq Risk

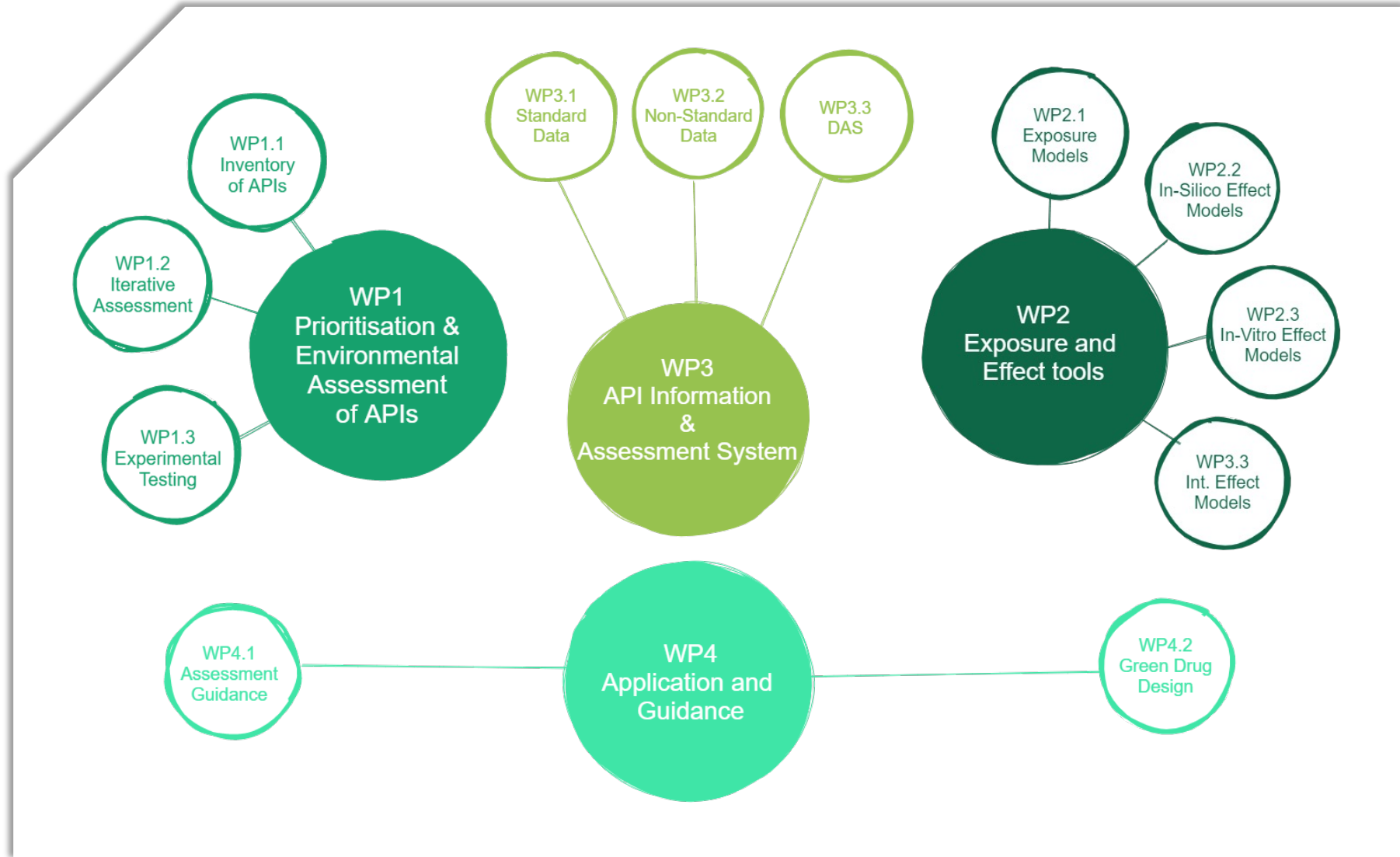
- APIs ordered based on maximum RQ values
i.e. the EU country with the highest exposure
- Data were colour coded according to the Swedish Fass.se pharmaceutical classification scheme
- The colors of the boxes show the environmental risk, according to the fass.se scheme:
 - $PEC / PNEC > 10$ High Risk
 - $1.0 > PEC / PNEC > 10$ Moderate Risk
 - $0.1 > PEC / PNEC > 1.0$ Low Risk
 - $PEC / PNEC < 0.1$ Insignificant Risk





PREMIER

PRIORITISATION AND RISK EVALUATION
OF MEDICINES IN THE ENVIRONMENT



Industry initiatives



MANUFACTURING EFFLUENTS MANAGEMENT
Technical guidance

Establish a shared set of principles to identify and mitigate the potential impacts of active pharmaceutical ingredients (API) in wastewater from manufacturing operations.

eERA
Proposal for an extended ERA

Designed to strengthen the current ERA process and industry's commitment to conduct robust and risk-based ERAs without compromising environmental protection or patient access to medicines across the life cycle of the API.

EPR

Balancing challenges on Urban Wastewater Treatment with access to Medicines in Europe. Impact assessment of policy options to PiE and unprecedented and disproportionate use of EPR applied to human medicines.



Common antibiotic manufacturing framework and science-based assessments effectively control antibiotic releases



Responsible supply chain management and better business conditions across the industry.



Digital Solutions for Zero Pollution in cities and Regions

Digital Solutions for Zero Pollution

Update on the preparation of
recommendations
with focus on urban and regions

Zero Pollution Stakeholder Platform meeting
Tuesday 11th October 2022
Brussels

Zero Pollution EU Action Plan



Flagship 7: Living Labs for green digital solutions and smart zero pollution

By 2023, the Living Lab members will develop recommendations on using for a climate and environment-friendly use of digital solutions to accelerate zero pollution efforts, with a particular focus on citizen engagement.

Operationalisation: the Joint Working Group on Digital for Sustainability including Zero Pollution

The **overall objective** is mobilize Living Labs to answer:

- How can Living Labs support their cities and regions in becoming Green and Digital

The **expected outcomes** are the following:

- **set of recommendations** that can be addressed to policy makers, the Living Lab themselves and Cities/Regions, together with a list of Key Performance Indicators to assess their efficiency and effectiveness;
- **raise awareness** with the Cities/Regions of the opportunity of using Living Labs to become green and digital Cities/Regions and achieve Zero Pollution objectives.



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Hes·so

Living Labs family and their drivers

- The concept of “family resemblance” applied to Living Labs accounts for the **diversity of the existing Living Labs** and yet manages to highlight that there are **shared features** of Living Labs.

- The orientation towards zero pollution builds upon a general drive towards sustainability and more specific actions taken by a part of this word



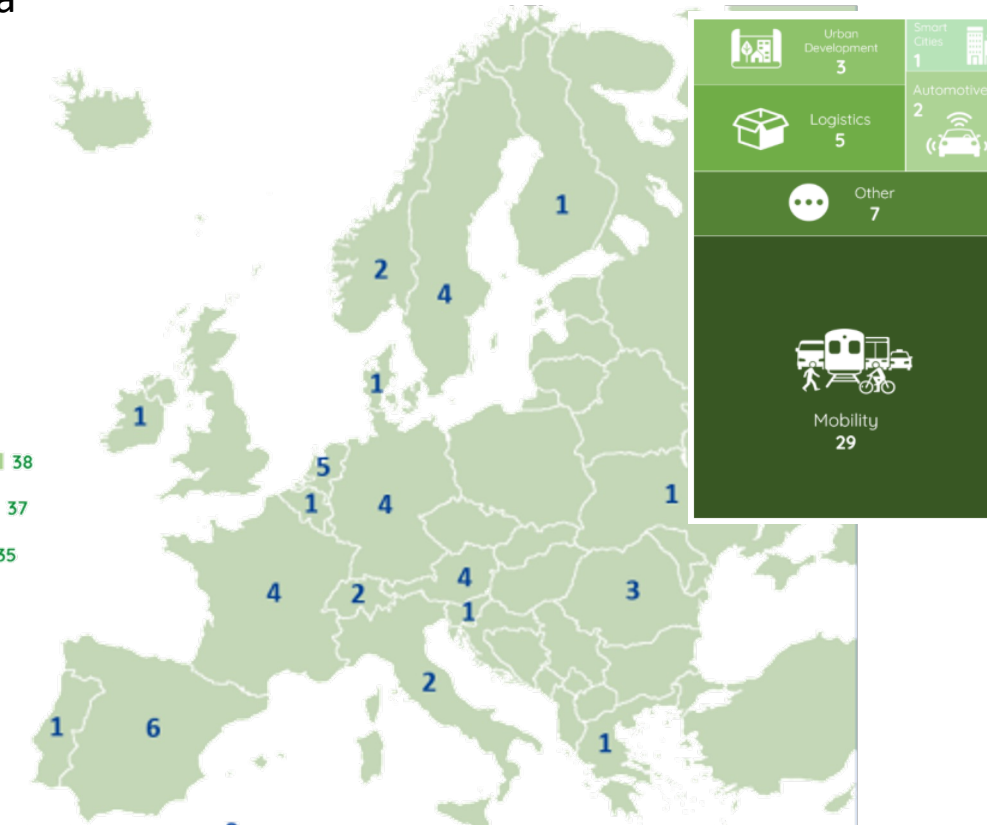
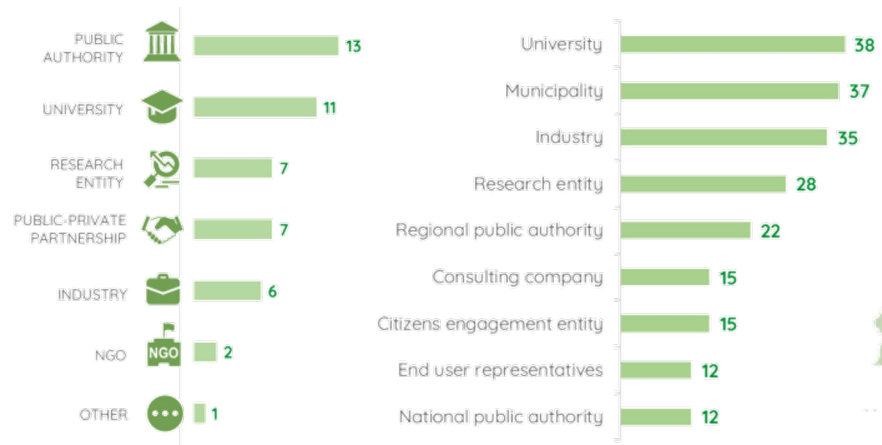
Source: ENOLL Action-oriented Task Force Mobility

Living Labs operationalization within urban and regional contexts for zero pollution

EIT Urban Mobility report identifies 201 European urban mobility initiatives including living labs, test beds and other initiatives containing Living Lab elements.

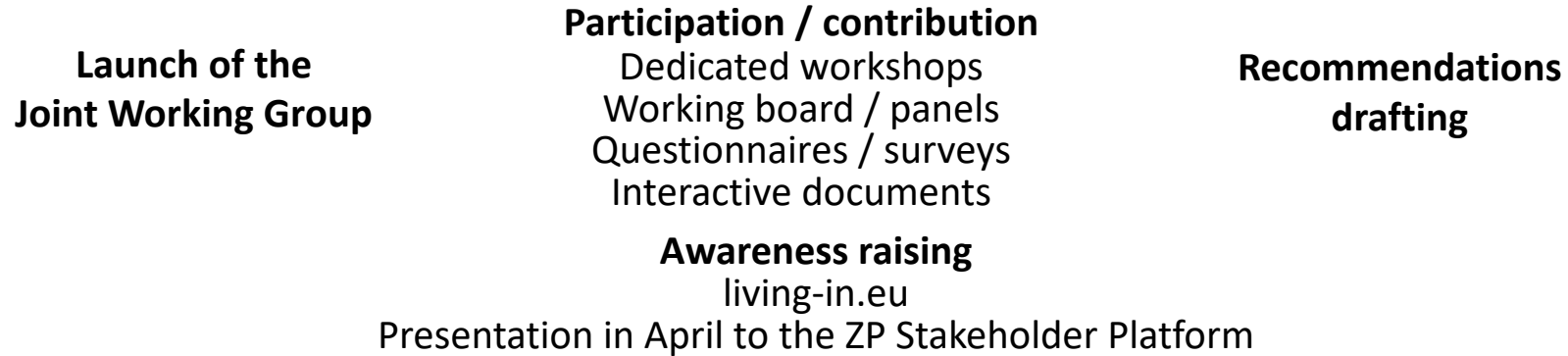


47 out of 201 are corresponding to the core Living Lab criteria



The process towards the recommendations

Awareness, dissemination and interaction
with converging processes, platforms and events



| | Dec-21 | Jan-22 | Feb-22 | Mar-22 | Apr-22 | May-22 | Jun-22 | Jul-22 | Aug-22 | Sep-22 | Oct-22 | Nov-22 | Dec-22 |
|------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|--------|--------|--------|
| Identification phase | ■ | ■ | ■ | | | | | | | | | | |
| Launch event | | | | ■ | ■ | | | | | | | | |
| Workshops and feedbacks | | | | | W1 | ■ | ■ | ■ | ■ | W2 & W3 | | | |
| Recommendations drafting | | | | | | | | | | | ■ | ■ | ■ |
| Recommendations presentation | | | | | | | | | | | | | ■ |

- Workshop 1: 04/04/2022, online, number of participants: 25
- Workshop 2: 12/09/2022, online, number of participants: 3 external technical experts on air, water, soil and 22 participants
- Workshop 3: 21/09/2022, in-person, at the Open Living Lab Days, Turin, number of participants: 20

How can Living Labs contribute to the adoption of green digital solutions and to zero pollution transition?

Test before-invest

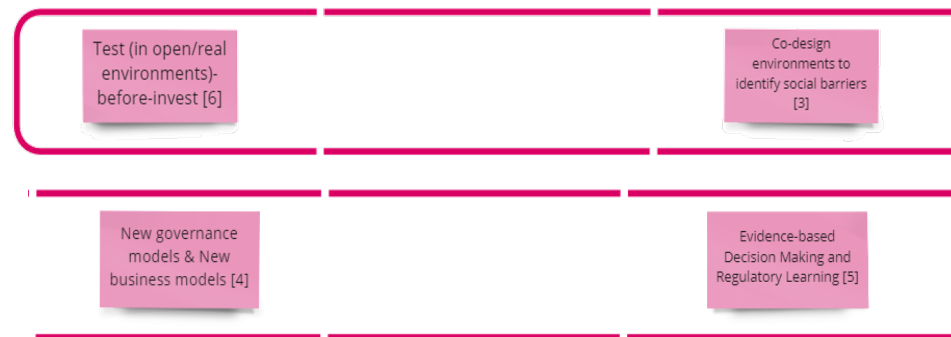
- Experiments **in open/real environments** to enhance relevance and speed
- **New governance and businesses models**
- **Dematerializing** processes
- Enhance the strong **link** and mutual benefits between **the environment and health**

Knowledge generation and sharing among stakeholders/cities

- **Co-design environments** to identify social barriers
- **Attracting youth and children** to move families and society
- **Making citizens and cities aware** of the paradigm-shift process

Evidence-based Decision Making and Regulatory Learning

- **Data gathering, management and monitoring**
- **Measure** what is really relevant and let all understand
- **Collect evidence** for policy leading to actions at local/national/EU level (including Missions)



How industries and institutions can draw on Living Labs to generate and spread solutions to zero **air/water/soil** pollution, including digital ones?

Increase impacts through citizen empowerment and capacity building

- Invest in the **co-design of experimental loops** for engaging in experiments
- Ensure engagement for **cooperation among the value chain** and between actors
- Agree on **common definitions of soil health** and thresholds of pollution by ecosystem type for better policy design
- **Promote awareness** of shared values of soil, soil health, soil services
- **Inclusion & Social Solutions**
- Break silos and **communicate**

Digital sustainability

- **Standardized metrics** for assessing impact
- **Evaluation and monitoring** of the pollutant and socioeconomic costs of soil pollution
- **High granularity monitoring** and **high-definition modeling** to support decision making
- **Increase the readiness** of the ecosystems through big demonstrators
- **Beyond the Death Valley of innovation**
- **Adaptive Technologies**



Validation of the outputs

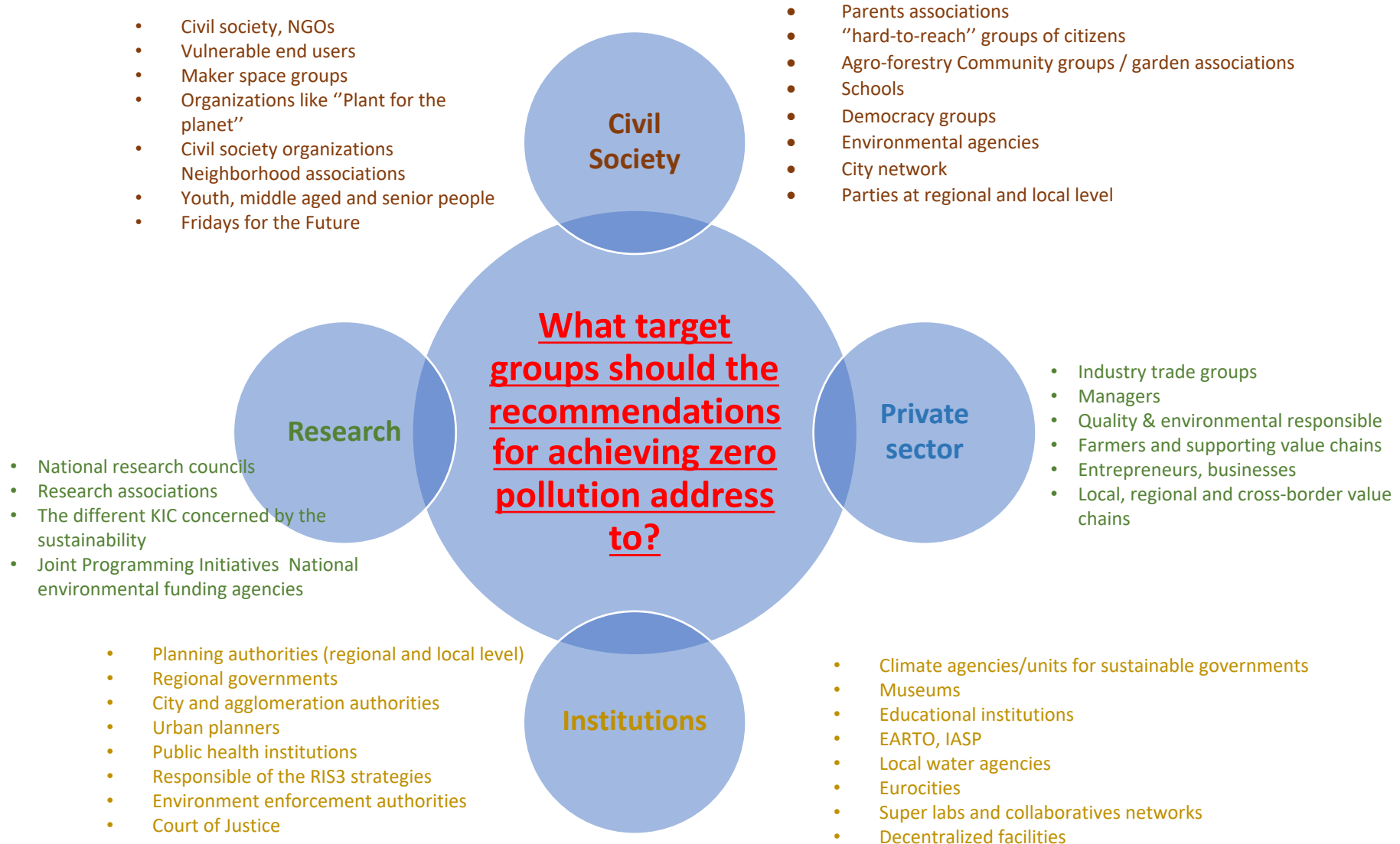
- Co-planning is needed even within the various departments of the Municipality (**cross sectorial cooperation**)
- The three dimensions of pollution (water, soil and air) should be tackled as a whole and not independently
- Need for new ways to share best practices identifying the impact
- Sectorial silos should be broken (tackled by **interoperability**)
- Digital twins can support **interconnectivity**

During the drafting of recommendations:

- A **challenge-based approach** should be followed that allows **interoperability of processes, innovation, people engagement and empowerment** and the **adoption of best practices**.



Stakeholders to which, in principle, submit recommendations



What's next?

- First full draft of recommendations available during November 2022 (feedback asked)
- Final document with recommendations for **December 2022**
- Possibility of reacting/adopting/building upon by members of the Platform

Contact Information

ENoLL Action-oriented Task Force Mobility / Hellenic Institute of Transport/ Centre for Research & Technology Hellas
gea@certh.gr

ENoLL Action-oriented Task Force Energy & Environment / HES-SO
valentino.piana@hevs.ch



**European
Network of
Living Labs**

Q&A



Conclusion and next steps

Co-chairs



Thank you for joining us!

Contact us

ENV-ZERO-POLLUTION@ec.europa.eu
zero.pollution.stakeholders@technopolis-group.com

https://ec.europa.eu/environment/zero-pollution-stakeholder-platform_en

