

KU LEUVEN



LEUVEN ONE HEALTH

ROBBERT BOUDEWIJNS

Institute?

A KU Leuven Institute is an interdisciplinary platform with sufficient critical mass, which in principle (but not necessarily) exceeds a single Group. It brings together research groups from different disciplines around a scientific topic. A KU Leuven Institute builds on a consortium of participating ZAP/OP3 staff (target: min. 15), each contributing specific expertise and knowledge within the proposed themes of the KU Leuven Institute. KU Leuven Institutes can be developed around centres of excellence and major priorities, or around internationally embedded programmes such as grand challenges or missions (cf. EU FP9 programme). The focus lies on important themes (such as large-scale, high-impact and often mutually dependent religious-philosophical, cultural, social, economic, political, ecological, medical or technological changes) in strategically important areas. A KU Leuven Institute has a significant scientific and/or societal impact that can, in theory, include any type of science, and aims to establish or facilitate more external partnerships.



Leuven.AM – KU Leuven
Institute for Additive
Manufacturing



iSi Health - KU Leuven
Institute of physics-based
Modeling for In Silico
Health



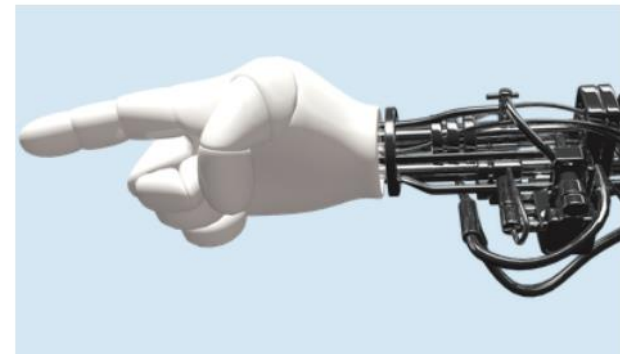
LIM - KU Leuven Institute
for Mobility



LKI - Leuven Cancer
Institute



SIM² - KU Leuven Institute
for Sustainable Metals and
Minerals



Leuven.AI - KU Leuven
Institute for Artificial
Intelligence

Leuven One Health - Mission



Strengthen interdisciplinary collaboration on One Health themes between KU Leuven researchers



Give an identity and visibility to OH research at KU Leuven, in order to set up collaborations and initiatives with outside partners



Represent KU Leuven One Health researchers on the (inter)national stage.

Raise (inter)national awareness, educate researchers, citizens and policy makers about OH themes and their importance, and to provide advice to policy makers on complex issues through reports and opinion pieces.

Promote systems thinking as methodological basis



[What is the One Health approach?](#)

[How does the One Health approach work?](#)

[What is the European Commission doing?](#)

[Zoonotic threats](#)

[Climate change and health](#)

[Latest updates](#)

[Documents](#)

What is the European Commission doing?

As one of the main drivers of Antimicrobial Resistance (AMR) is the overuse of existing antimicrobials, the Commission has adopted the [EU Guidelines on the prudent use of antimicrobials in human health](#) { EN | ... } and the [EU Guidelines on the prudent use of antimicrobials in animal health](#) { EN | ... } to reduce the inappropriate use and promote careful use of antimicrobials in people and animals.

The Commission issues regular [progress reports](#) { EN | ... } on the implementation of the 2017 Action Plan Against AMR.

Since 2017 EU's response to AMR was further strengthened, among other initiatives, through:

- [Regulation on veterinary medicinal products](#) (2019)
- [Regulation on the manufacture, placing on the market and use of medicated feed](#) (2019)
- [Strategic Approach to Pharmaceuticals in the Environment](#) (2019) { EN | ... }
- [Pharmaceutical Strategy for Europe](#) (2020) { EN | ... }
- numerous training activities on AMR topics for both Member States and non- EU countries through the [Better Training for Safer Food \(BTSF\)](#) { EN | ... } initiative

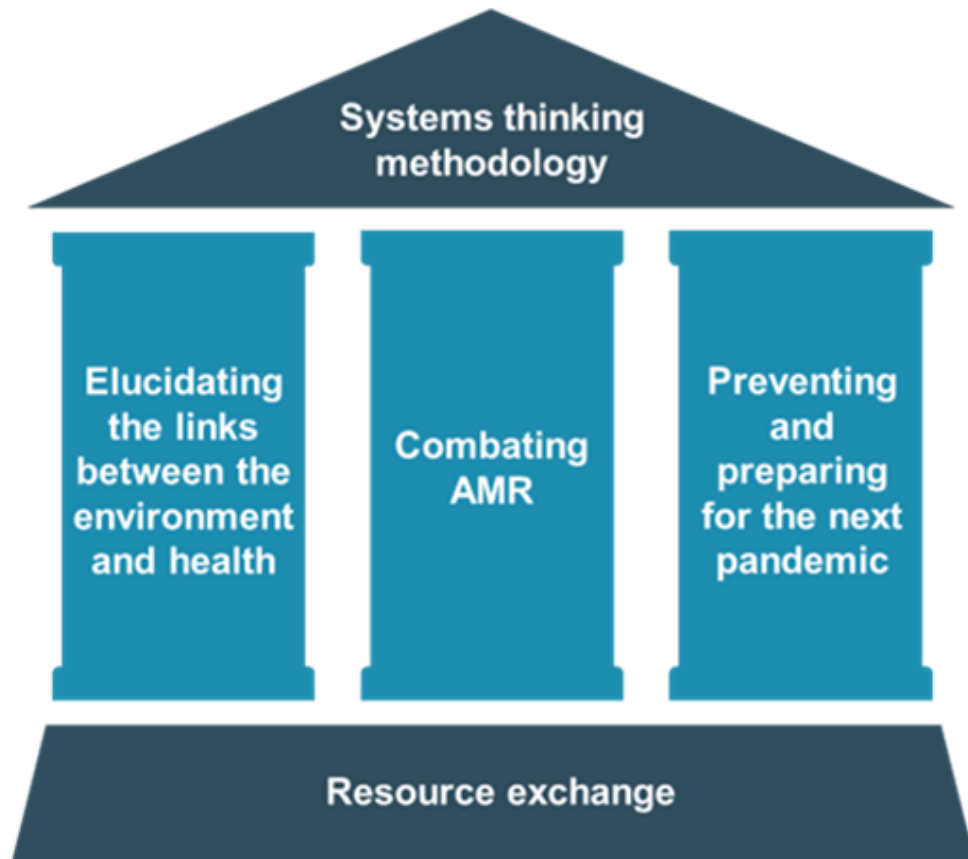
A recent major step forward is the adoption of the Pharmaceutical package on 26 April 2023, which include a [proposal for a Council Recommendation on AMR](#) { EN | ... } containing a broad range of measures to combat AMR in the fields of human health, animal health and the environment, through a One Health approach.

The EU is committed to improving [animal welfare](#) { EN | ... } legislation which will also contribute to the fight against AMR and improve the health of animals.

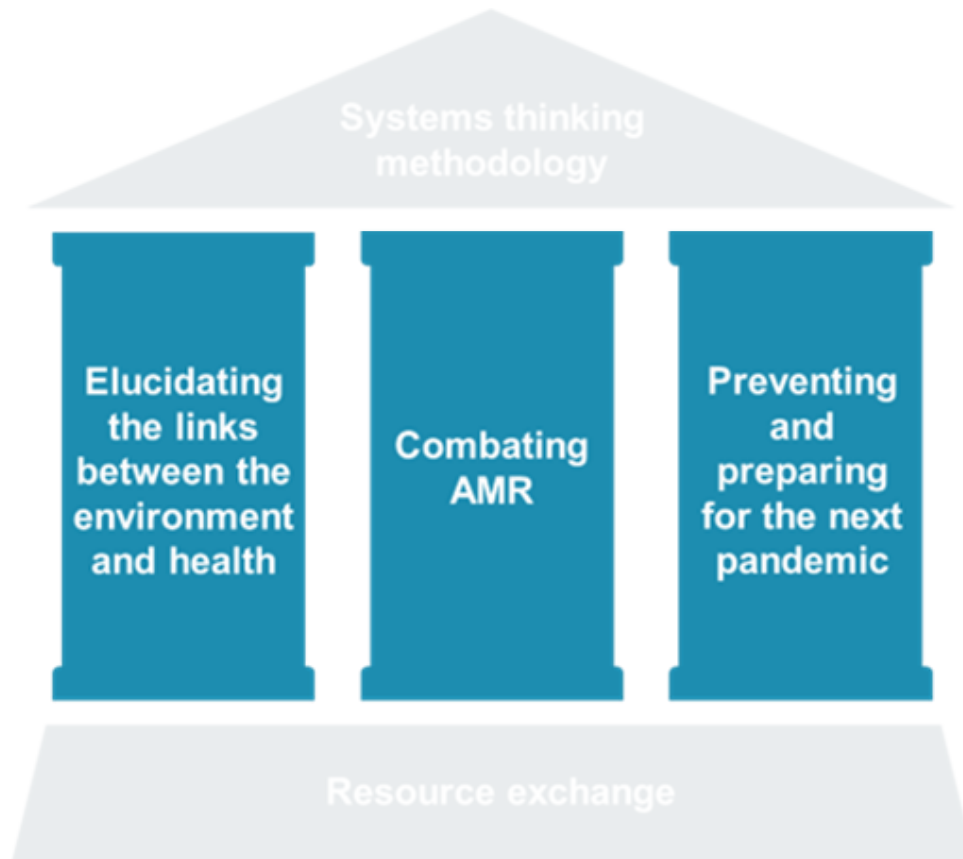
Top 3 health threats in the EU (HERA):

The Commission's [Health Emergency Preparedness and Response Authority](#) (HERA) today presents a priority list of top-3 health threats that require coordination of measures at EU level in the context of medical countermeasures. The [HERA Board](#) agreed on a list which includes three threat categories of life-threatening or otherwise seriously harmful hazards to health which have the potential of spreading across Member States: (1) **pathogens with high pandemic potential**, (2) **chemical, biological, radiological and nuclear threats**, and (3) threats resulting from **antimicrobial resistance**.

Leuven One Health - Concept



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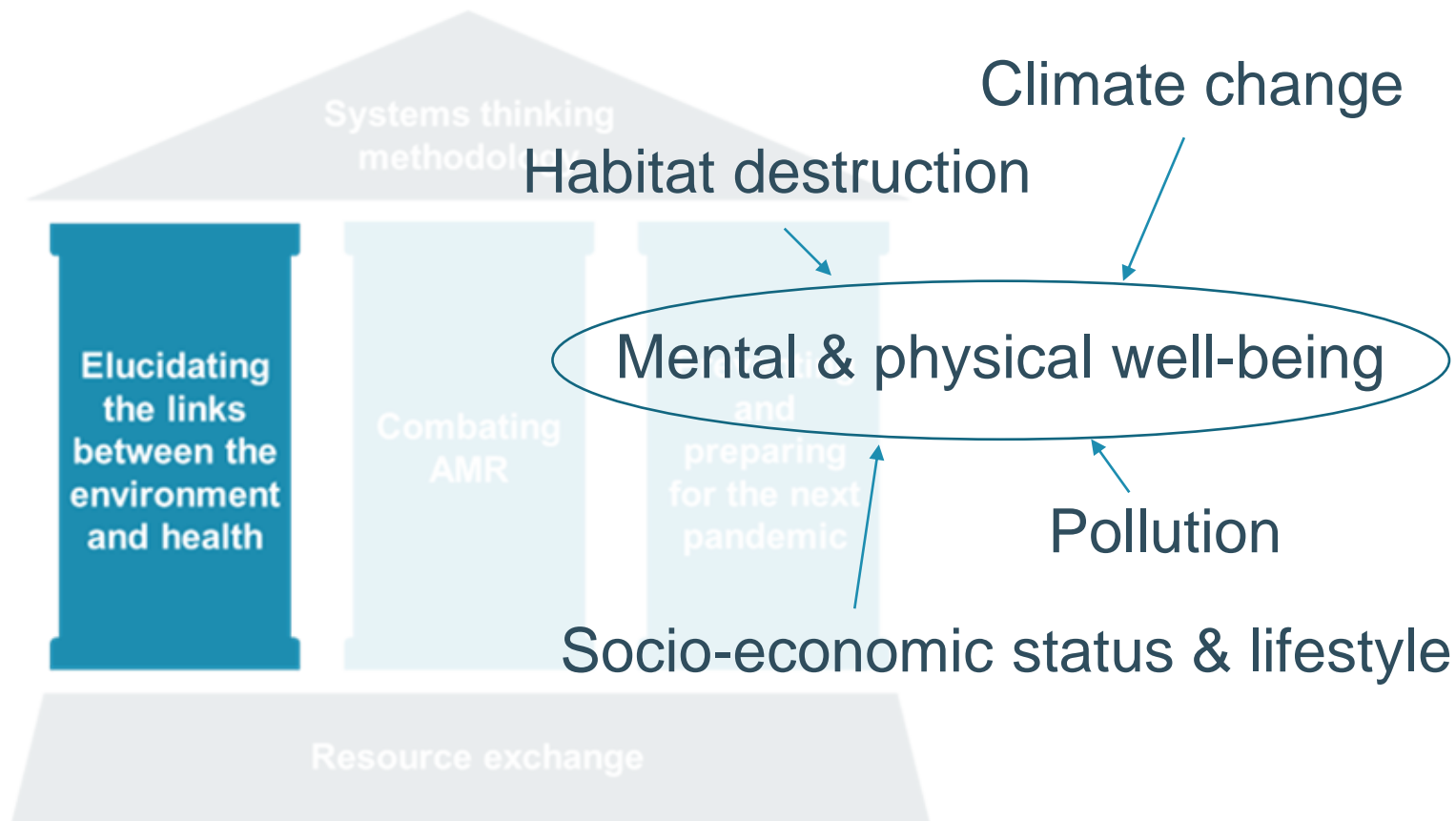


International priorities
Lasting relevance

Expertise within
KU Leuven

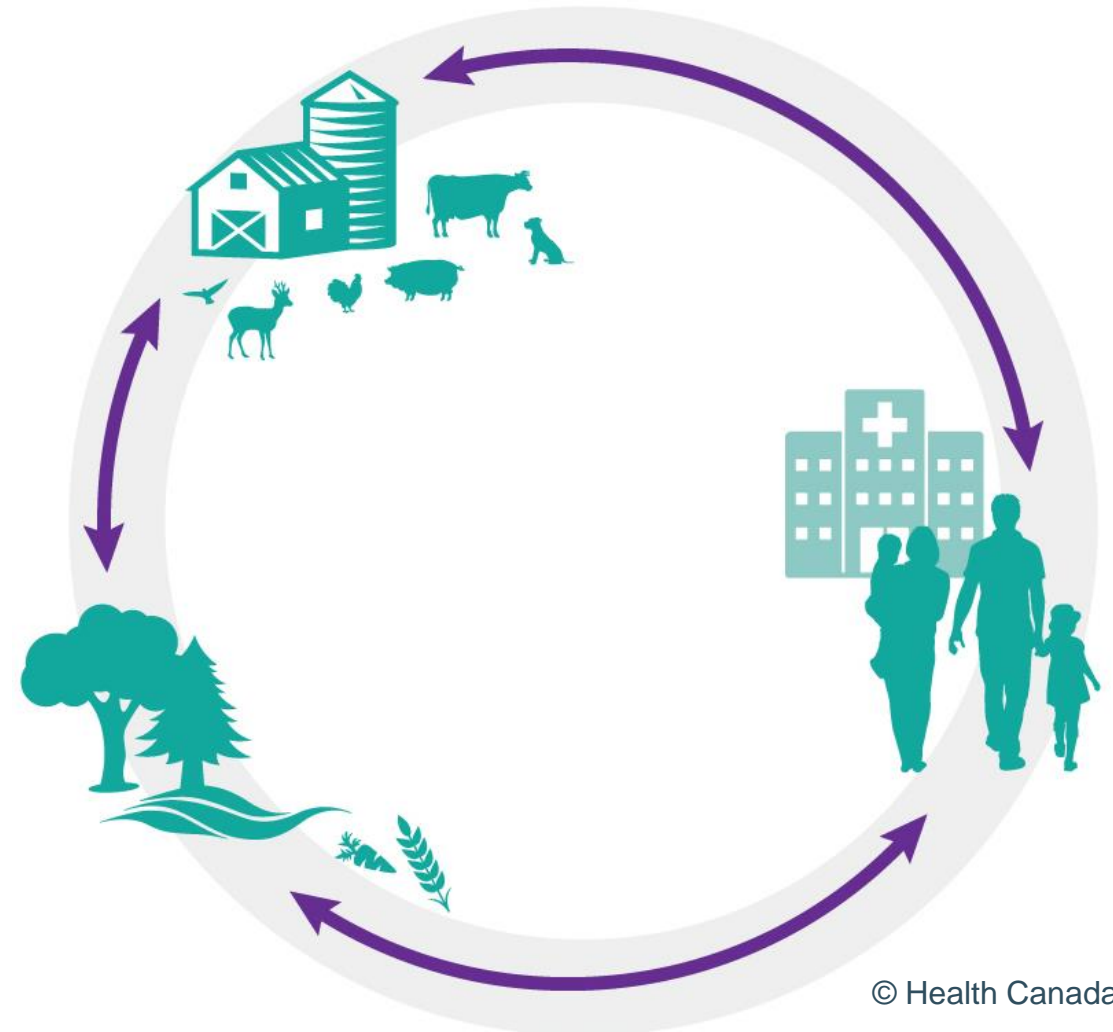
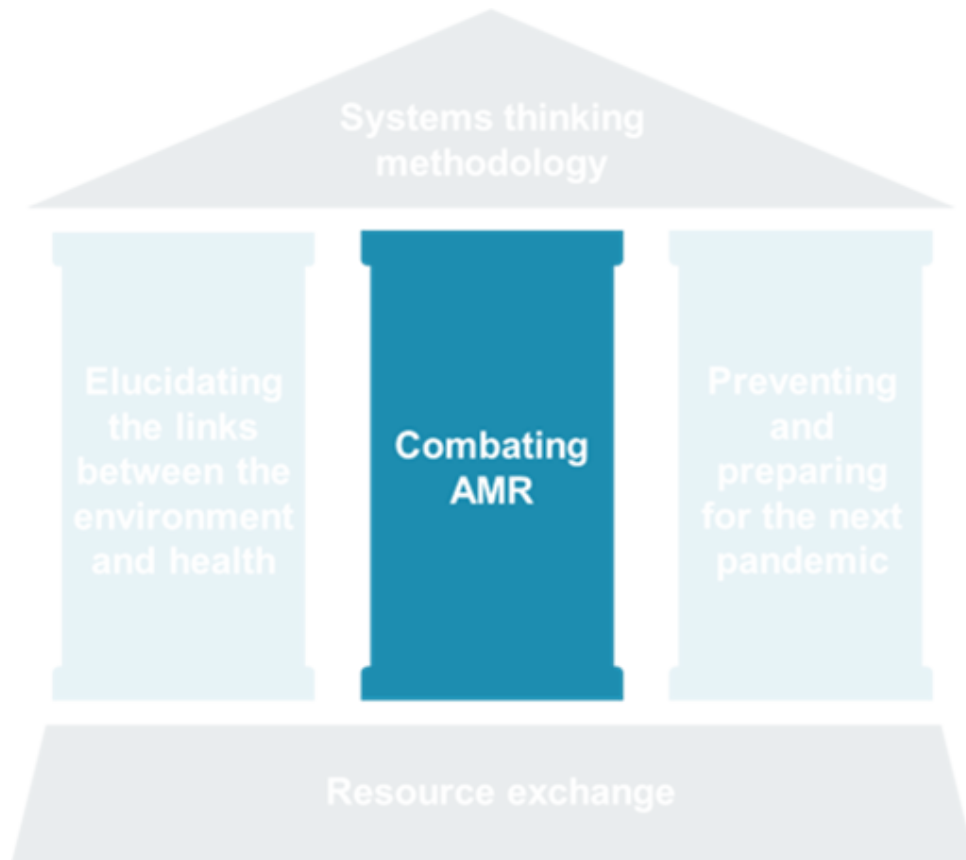
Thematic research lines

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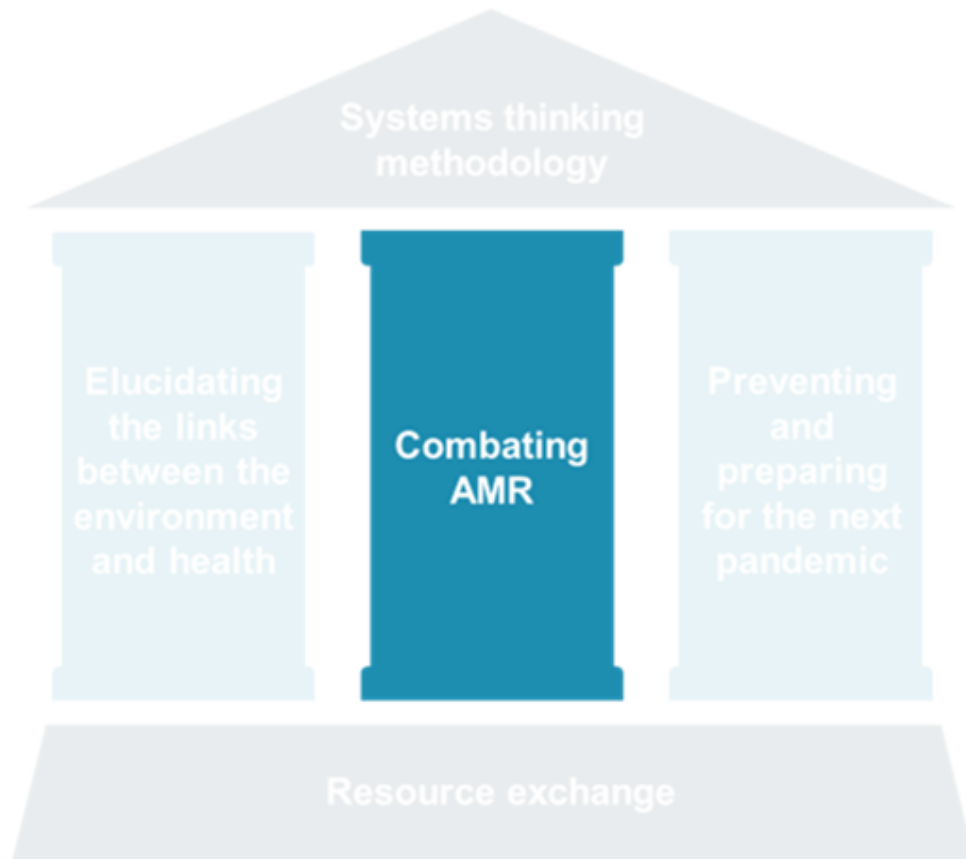
- WHO: top 10 threats
 - Climate change
 - Air pollution
- EU:
 - Green Deal
 - Zero pollution 2050
- Flanders:
 - Nitrogen
 - CO₂ (Moonshot)

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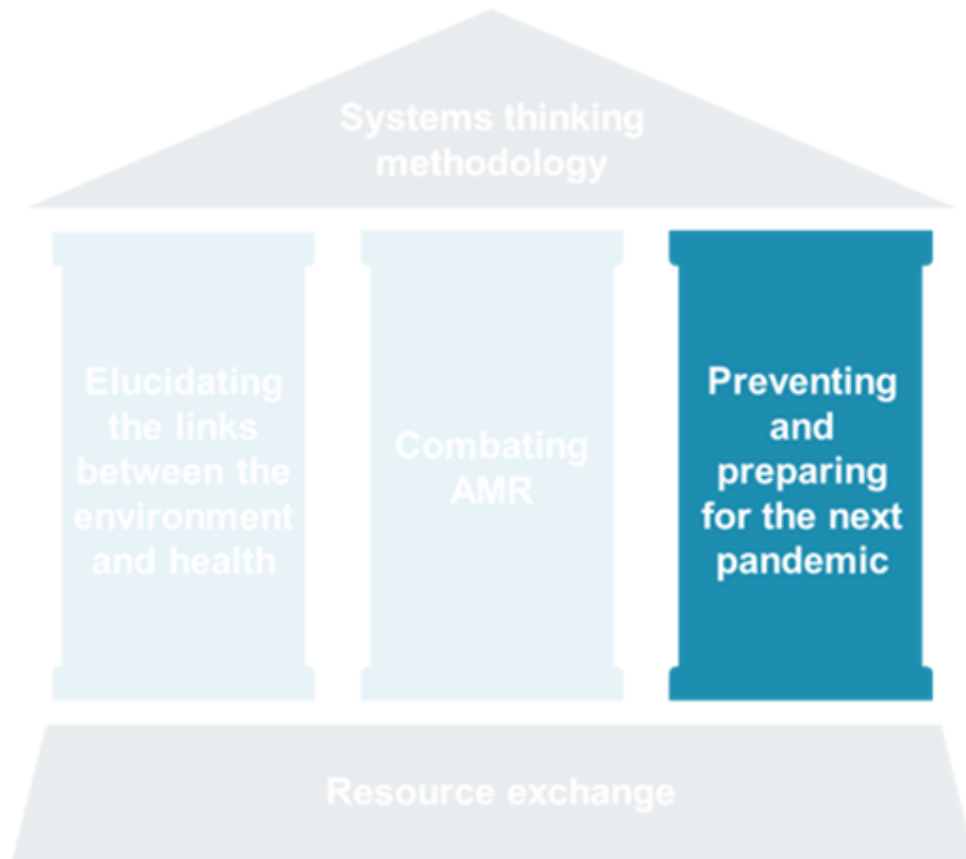
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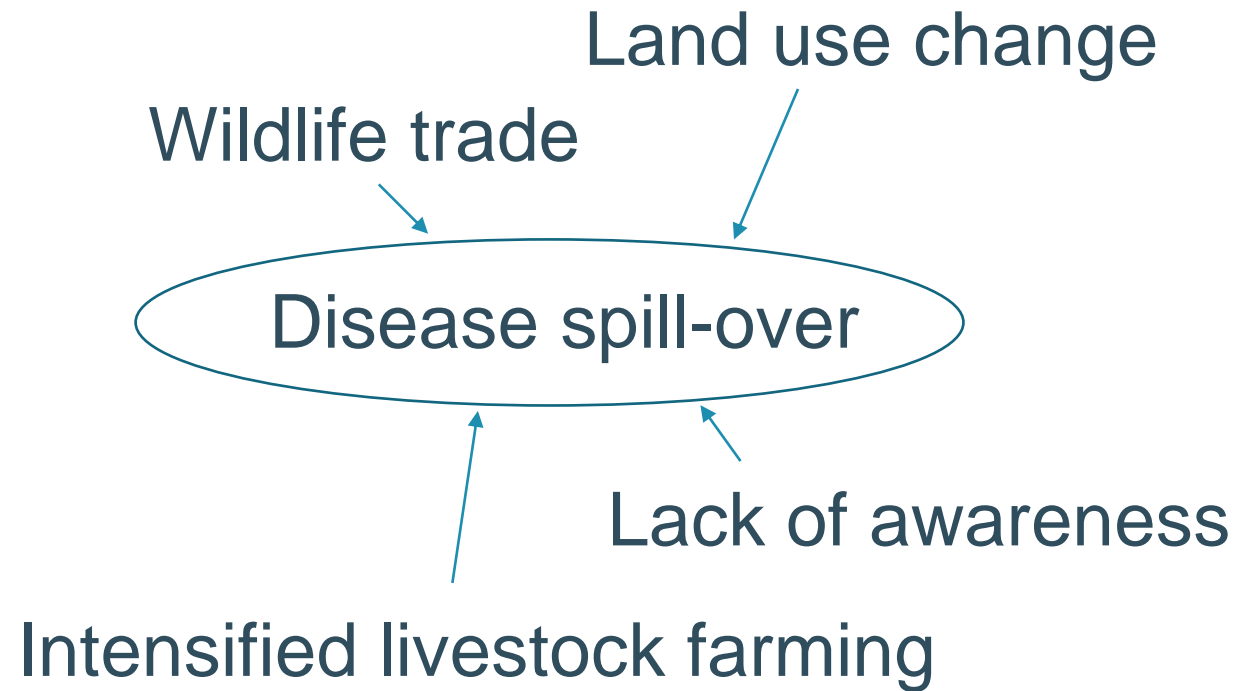
- WHO: top 10 threats
- EU:
 - One Health action plan
- Belgium:
 - National action plan
 - Innovative research

Monitoring of AMR Reduction
International coordination
New antibiotics Novel strategies

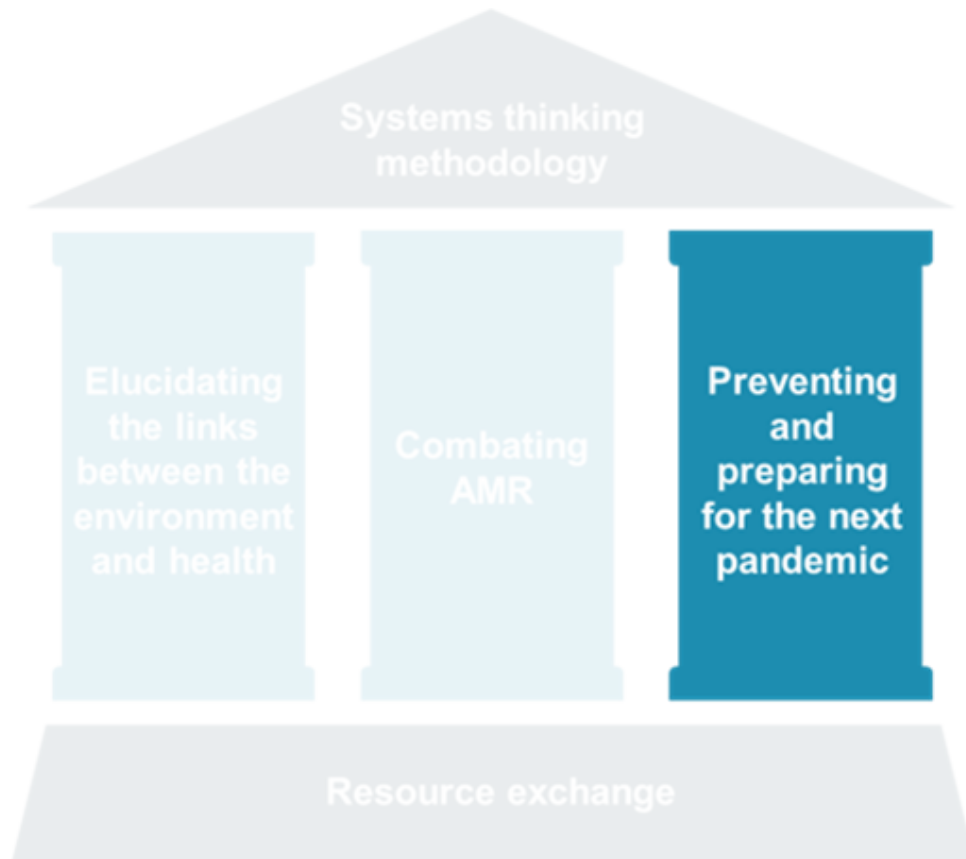
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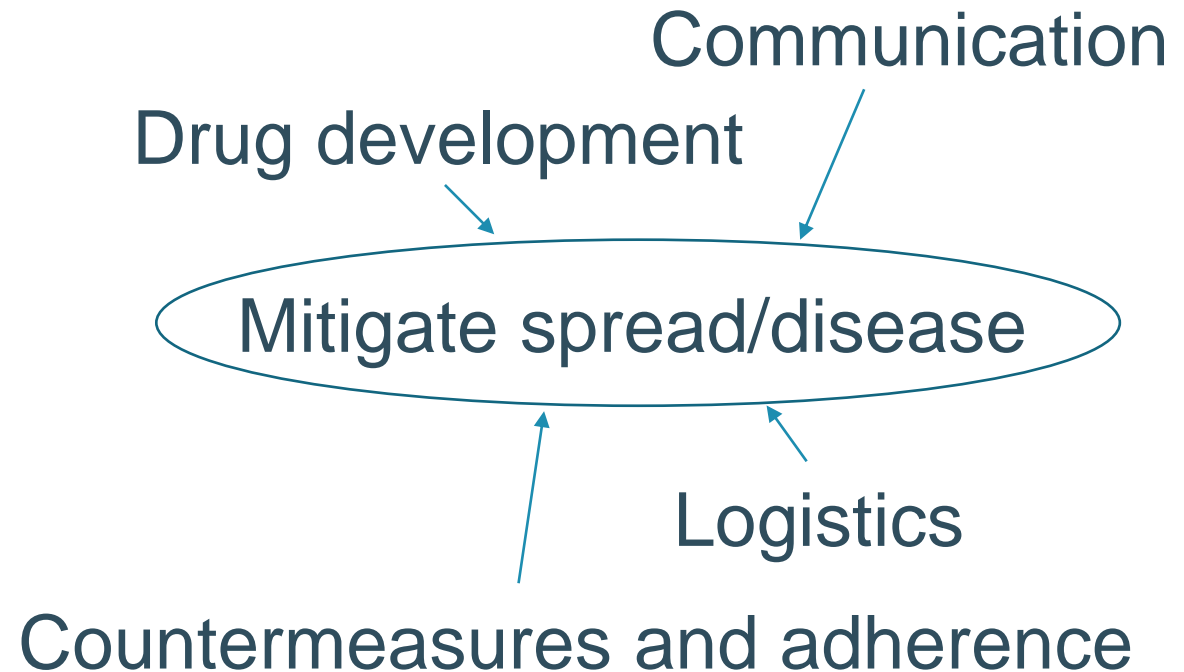
Prevention:



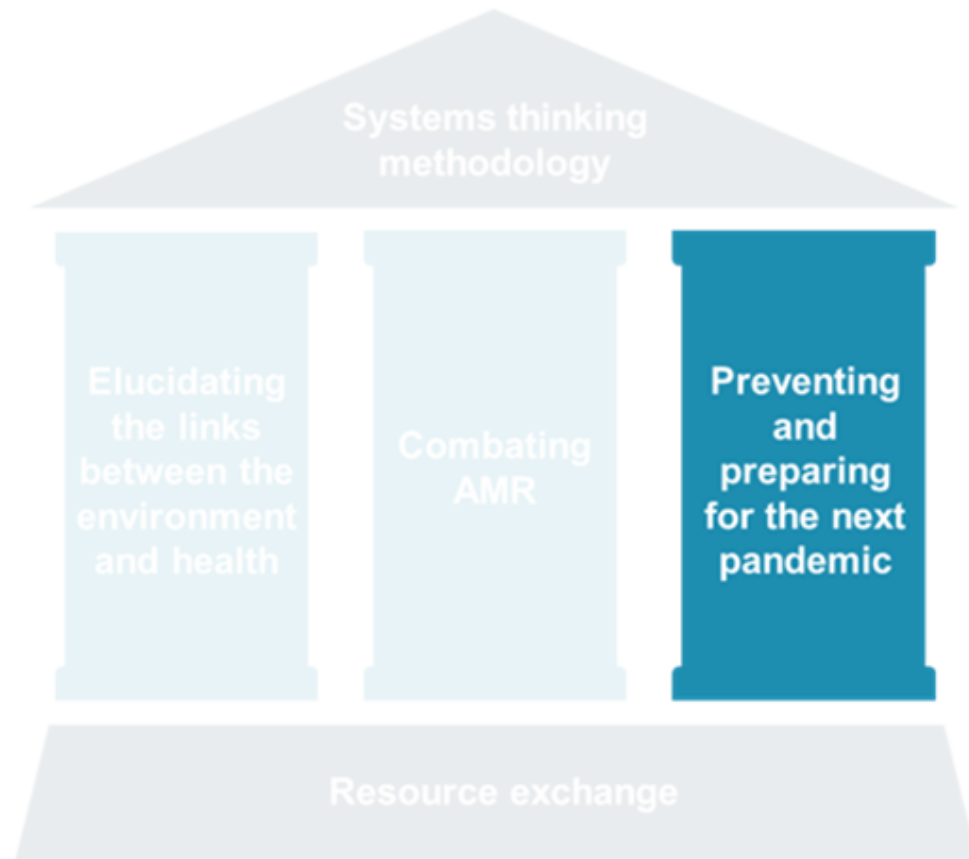
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Preparedness:

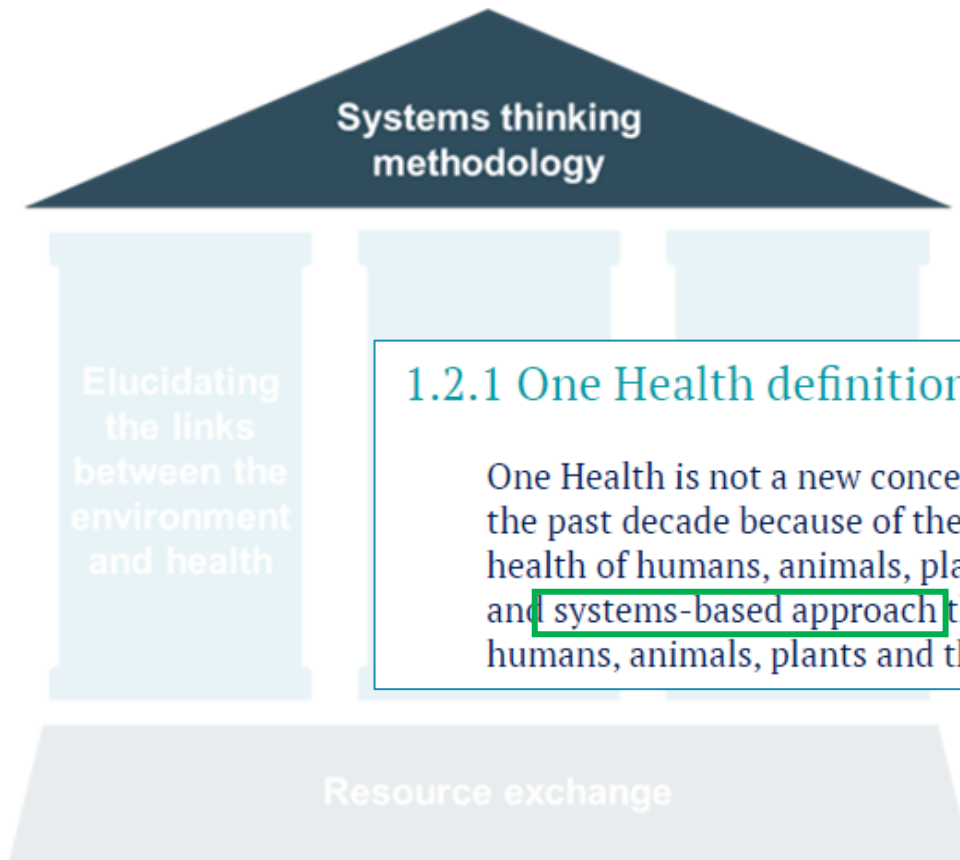


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- WHO: top 10 threats
 - Influenza
 - Dengue
 - Ebola
 - Disease X
- EU:
 - HERA
- PREZODE

Leuven One Health - Concept



*One Health is an **integrated, unifying** approach that aims to **sustainably balance** and optimize the health of humans, animals, plants and ecosystems. It recognizes the health of humans, domestic and wild animals, plants and the wider environment (including ecosystems) are **closely linked and interdependent.***

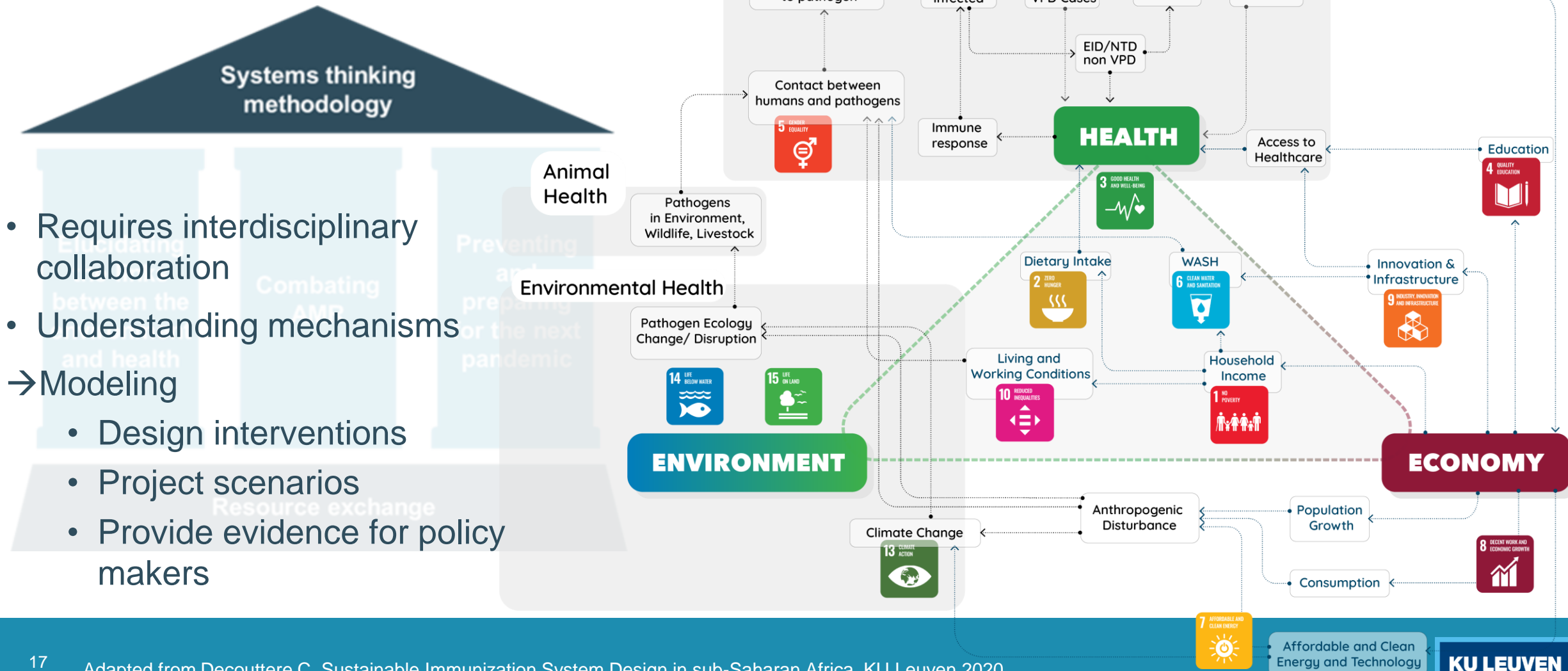
1.2.1 One Health definition

One Health is not a new concept, but it has received renewed attention and evolved over the past decade because of the increased frequency and severity of threats linking the health of humans, animals, plants and the environment. One Health calls for a holistic and **systems-based approach** that recognizes the interconnection between the health of humans, animals, plants and the environment.

*and
together to foster
systems, while
technology and air,
change, and*

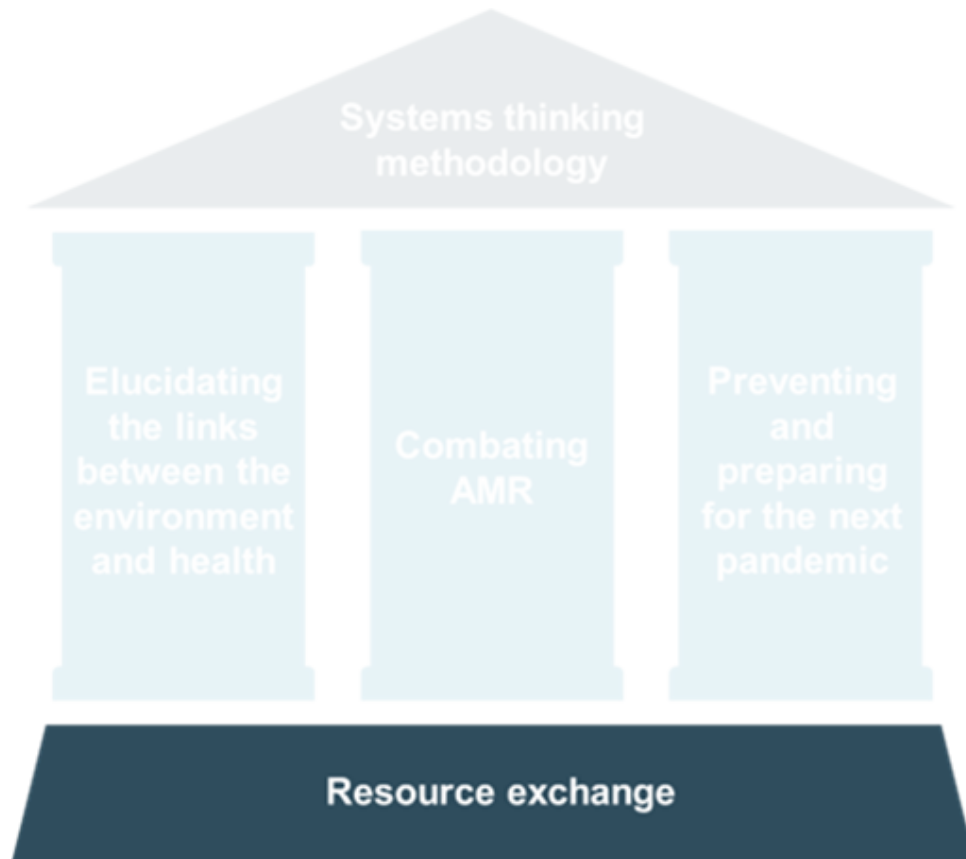
Activities	Deliverables	Timeline
6.4.5 Ensure that systems thinking is a core module for academic and in-service One Health professionals	<ul style="list-style-type: none"> Systems thinking is integrated into core modules in One Health undergraduate and graduate degrees, training courses and certificates for medical, veterinary and environment sector undergraduate and graduate school candidates 	1 ✓

Leuven One Health - Concept



- Requires interdisciplinary collaboration
- Understanding mechanisms
- Modeling
 - Design interventions
 - Project scenarios
 - Provide evidence for policy makers

Leuven One Health - Concept



- Increase visibility of One Health datasets/models at KU Leuven
 - Promotes re-use
 - Spatial/GIS data
 - Systems models
- Experience exchange on ethical compliance/GDPR
- One Health citizen science community
 - Saves time/effort

Research

Setting of priorities and goals, strategy per research line
Building of project portfolio: Horizon, BRAIN-be, ID-N,...
Set-up of data & citizen science platform

Education

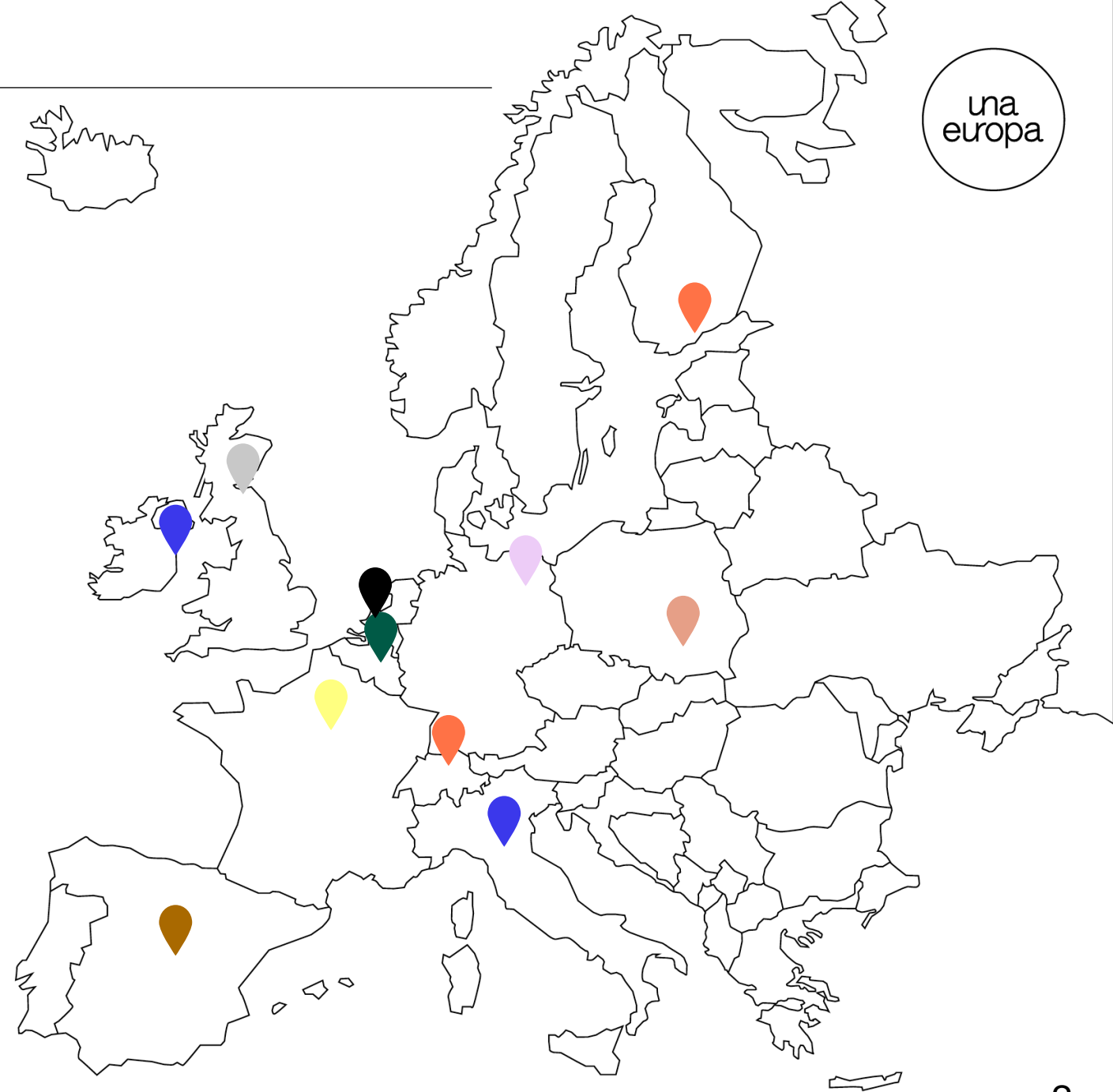
One Health summer school
Young One Health Society
Systems thinking course

Networking

Annual institute event
One Health event for Belgian EU presidency
Belgian One Health network (FWO-WOG)
Una Europa
External advisory board



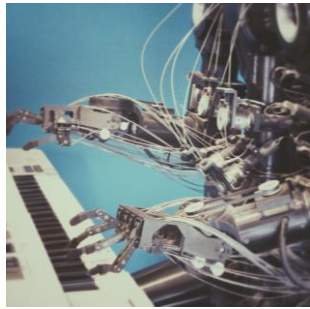
- + Freie Universität Berlin
- + Università di Bologna
- + University College Dublin 
- + University of Edinburgh
- + Helsingin Yliopisto 
- + Universiteit Leiden
- + Uniwersytet Jagielloński w Krakowie
- + KU Leuven 
- + Universidad Complutense de Madrid
- + Université Paris 1 Panthéon-Sorbonne
- + Universität Zürich



Una Europa Focus Areas



Cultural Heritage



Data Science & AI



Europe and the World



One Health



Sustainability



Future Materials

LEUVEN ONE HEALTH

STEERING COMMITTEE

EXECUTIVE COMMITTEE

SYSTEMS THINKING METHODOLOGY

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Decouttere**

Nico Vandaele

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Ben Somers

Peter Hoet

Jean-Marie Aerts

AMR

Patrick Van Dijck

Jan Verbakel

Hans Steenackers

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