

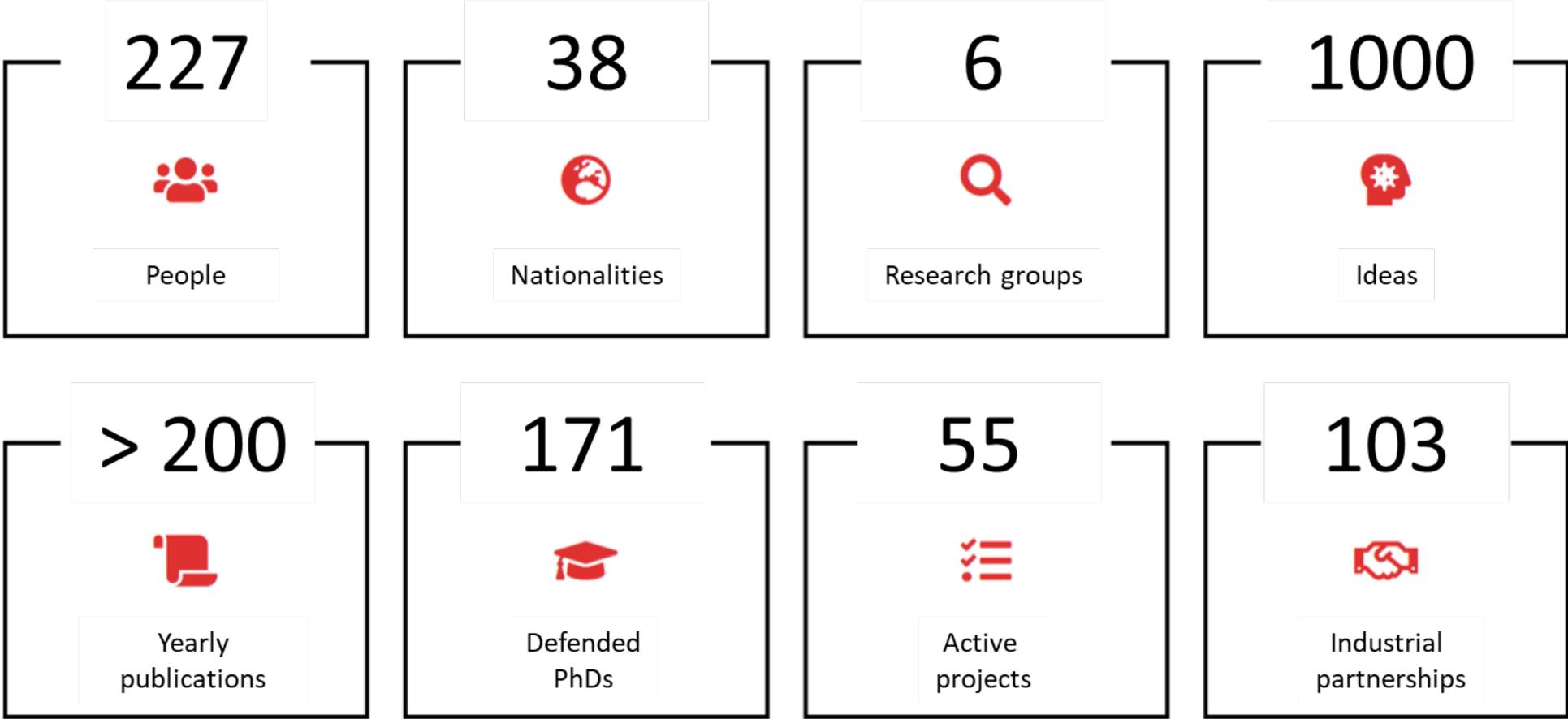


# Interdisciplinary research in CMK: Lessons & Challenges

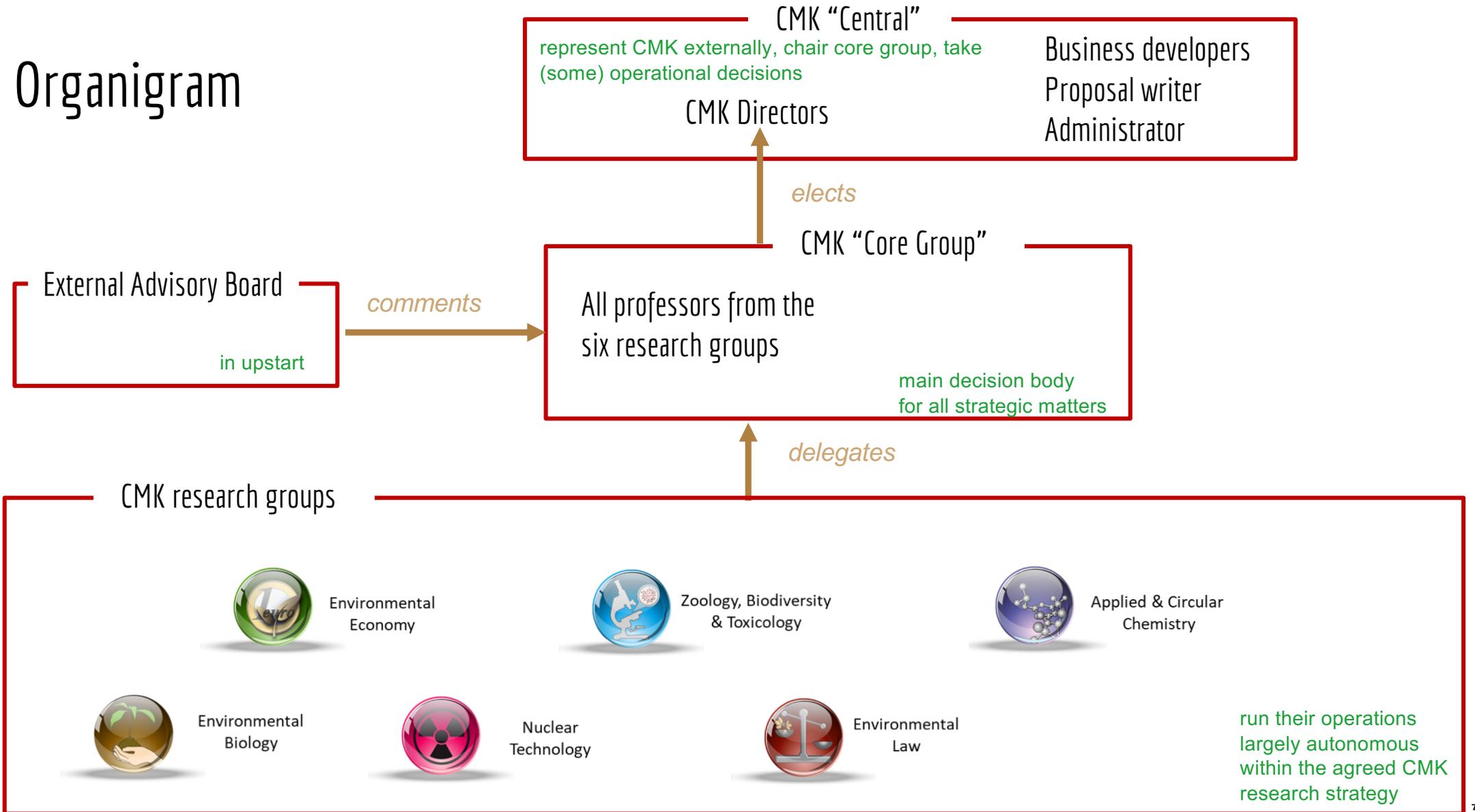
ILEE Symposium May 30, 2022 – Namur  
Robert Malina



# CMK at a glance



# Organigram



# CMK strategy

Every 4 years we sit together in order **to revisit our research lines**, define our **research ambitions** and to translate this ambition into **strategic** and **operational goals**.

The result of this exercise is our **strategic plan**.

## Strategic Plan

**2019-2022**

Centre for Environmental Sciences

Hasselt University

February 2019



# CMK strategy: Our ambition

“The Centre for Environmental Sciences is striving to be an **international academic leader** in **holistic, multi-, and transdisciplinary analyses** pertaining to the environment, a source of **robust science-driven advice** to public and private decision-makers from the local to the international level, and an active **promoter of academic and educational expertise** in developed and developing countries.”

*This ambition is what unites CMK.*



# CMK strategy: Our research lines

We address **3 research themes** that have **high societal urgency**:



Understanding **influences** of the **environment** on **organisms**



Developing and assessing **Sustainable Clean Technologies** to mitigate influences of the environment on organisms



Monitoring, valuing & optimizing **Biodiversity & Ecosystem services** under different stress conditions, including climate change.

**Strategic Plan**

**2019-2022**

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# CMK strategy: Our research ambitions within the 3 research lines



1. Increase academic leadership on environmental stressors on plants and their microbiome
2. Enlarge expertise in plant toxicology to improve plant safety and quality
3. Exploit birth cohort
4. Expand knowledge on nature-based solutions
5. Enlarge expertise in toxicology and epidemiology
6. Further develop innovative toxicity tests
7. Enhance academic leadership on black carbon exposure
8. Enhance understanding of radiation influence on living tissues
9. Enlarge dosimetry expertise



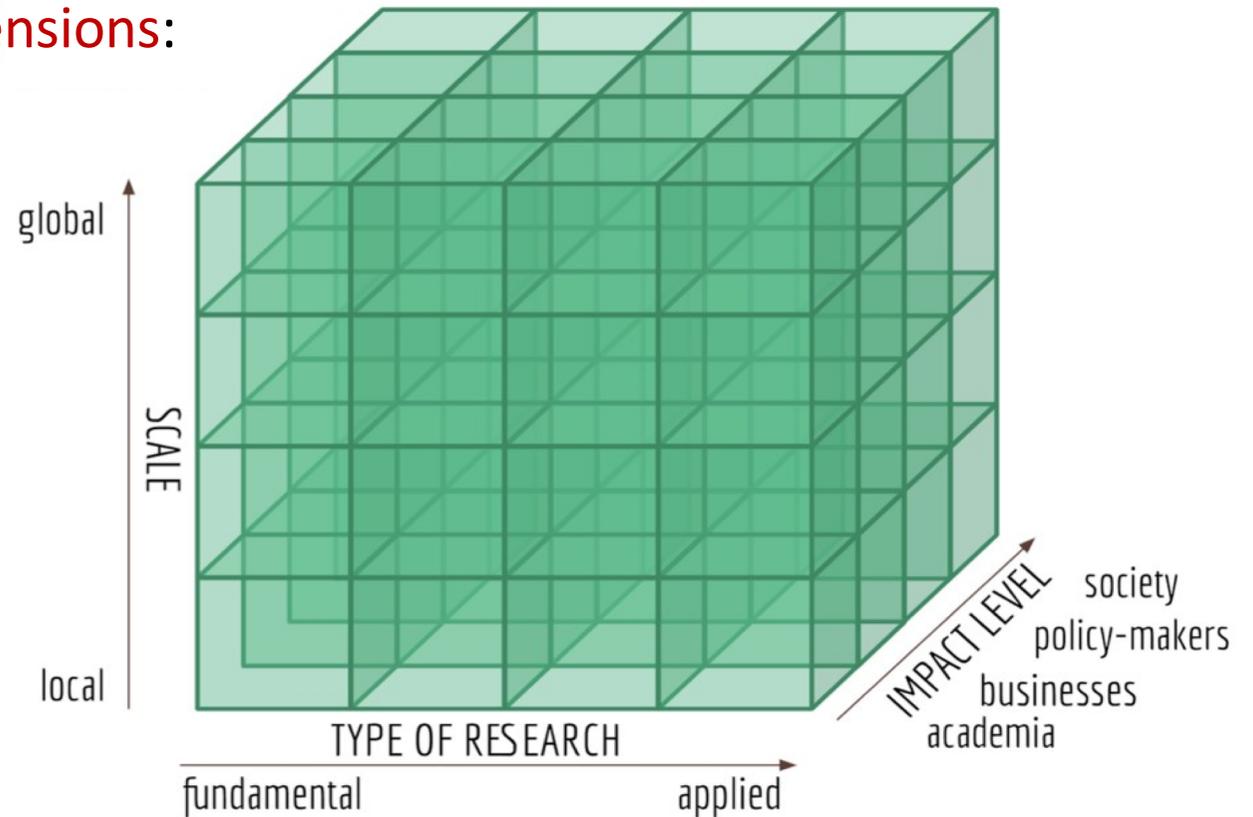
1. Further increase academic leadership on phytoremediation technologies
2. Build-up expertise in new pyrolysis techniques for the production of adsorbents for air, soil and water quality improvements
3. Become expert in the development of sustainable amendments for improved plant growth
4. Become European expert in safe reuse of NORM
5. Build-up expertise in nuclear waste management and decommissioning
6. Become international leader in sustainability assessments
7. Become a European reference in the legal analysis of clean technologies



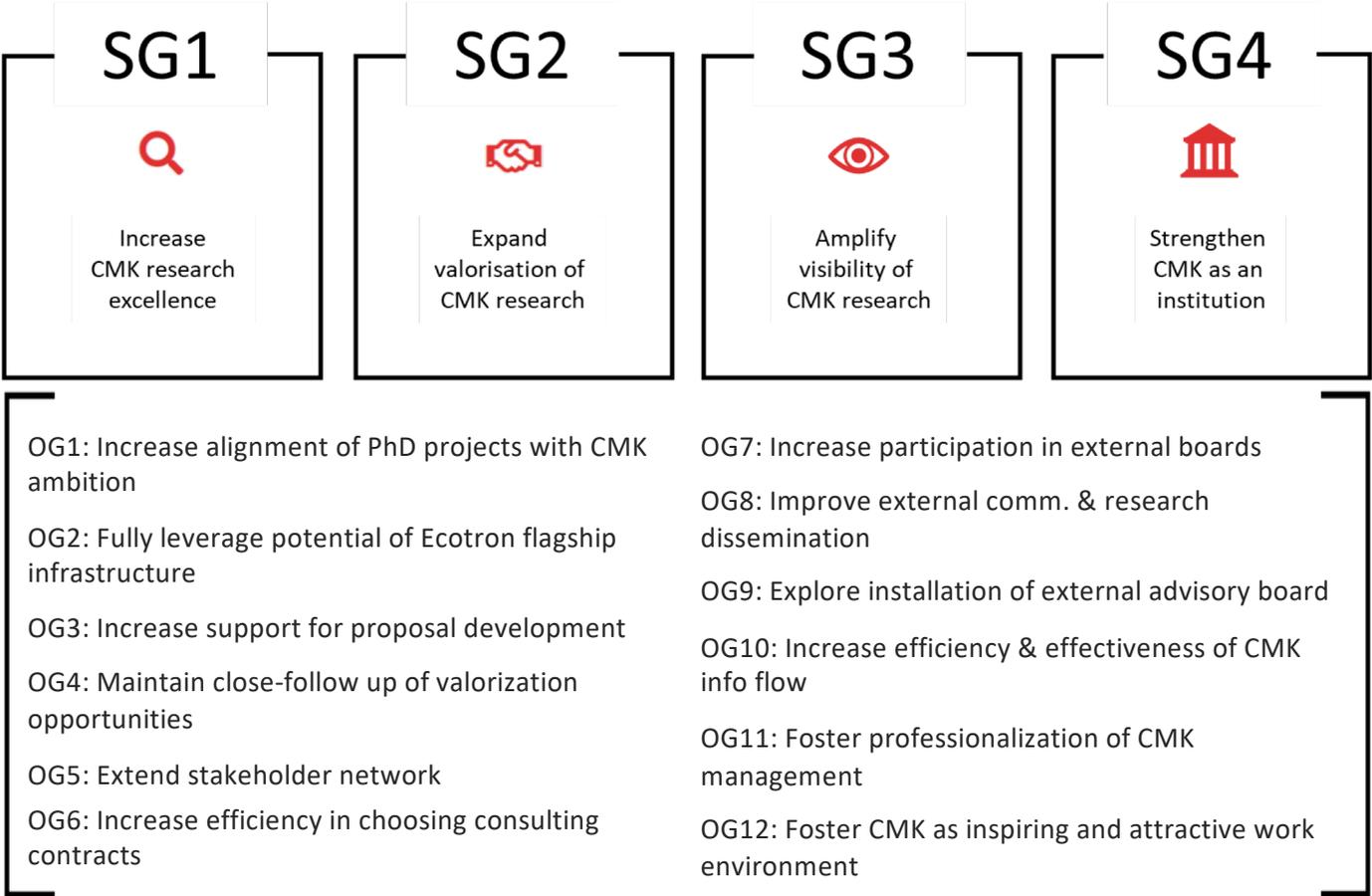
1. Become global leader in multidisciplinary research on climate change impacts on ecosystem services based on controlled experiments
2. Establish the Field Research Centre as platform for high-quality research and education
3. Become a European reference on biological assessment of services provided by green infrastructure and their integrated assessments
4. Further enhance academic leadership on innovative methods for valuation of ecosystem services
5. Elaborate research on conservation management in protected areas
6. Further enhance academic leadership on biodiversity studies in aquatic systems

# CMK strategy: Mapping of research

We encourage our researchers to **position themselves** in **3 dimensions**:



# CMK strategy: Goals



**Strategic Plan**  
**2019-2022**

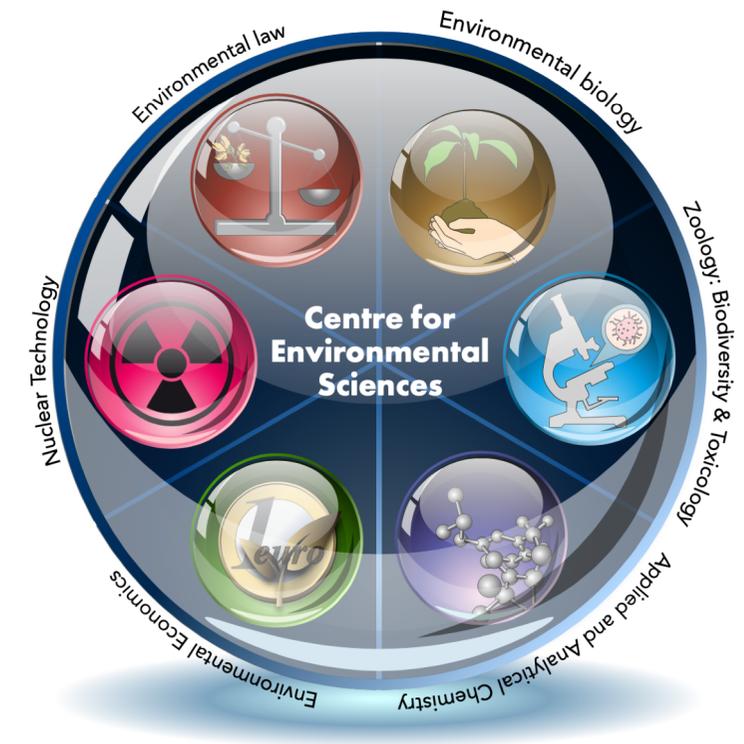
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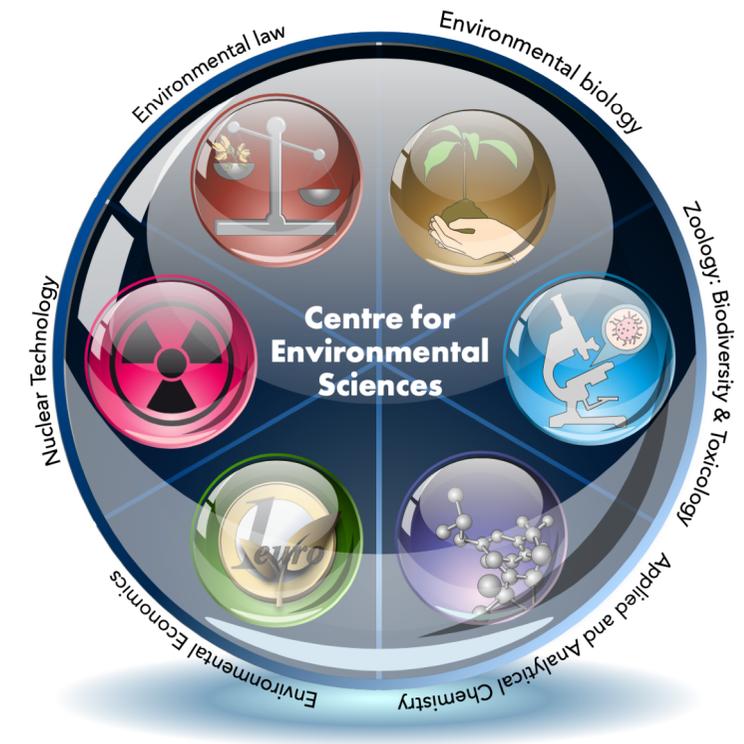
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# How do we try to foster collaboration within the institute?

## CMK Strategy process



Our research strategy makes multidisciplinary explicit and states operational goals on how to achieve it

## CMK PhD fellowships



CMK PhD fellowship proposals need to have involvement from 2 CMK research groups

## CMK Proposal writer



Part time proposal writer, supporting proposals with involvement of at least 2 research groups that are of strategic importance for CMK

# How do we try to foster collaboration within the institute?

## CMK Valorization managers



CMK Valorization managers make connections between research groups

## Hiring decisions



**Nadia Soudzilovskaia** · 2nd  
Professor Ecosystem Functioning, Leader Ecotron Research at Hasselt University

A cross-disciplinary openness is an important factor in the hiring decisions

## CMK Infrastructure



Joint infrastructure used by several research groups

# How do we try to foster collaboration within the institute?

**CMK "culture"**

**CMK Research Seminar: Green infrastructure**  
Biodiversity, Ecosystem services, Wellbeing & Toolkit

Prof. Tom Artois    Prof. François Rineau  
Prof. Sebastien Lizin    Sabine Hubrechts

Total: 76 online CMK participants

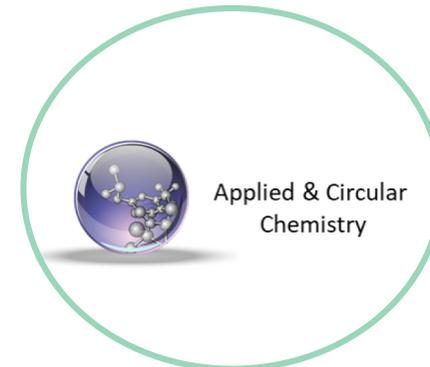
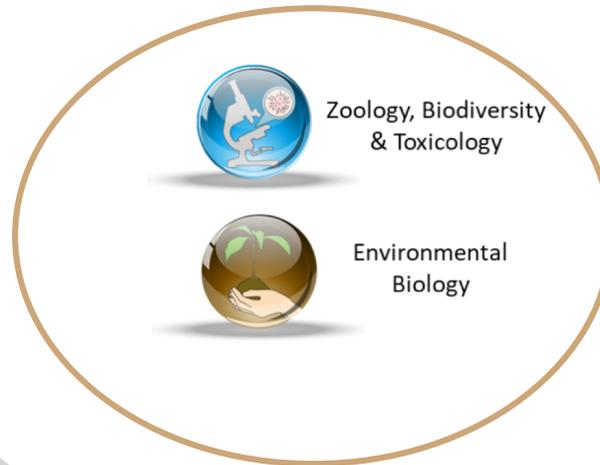
matteofermeglia

Love it

AND IN FULL STYLE WITH THE ONE AND ONLY @CMK\_UHASSELT HOODIE

# An important aspect that we miss

## A physical home



CMK is spread around 5 buildings in Hasselt and Diepenbeek.

So how does collaboration with CMK  
actually work?



**RadoNorm**  
Managing risks from radon and NORM

## Transdisciplinary research on marketing and societal challenges of using NORM in building material

**Nazanin Love**



This project has received funding from the Euratom research and training programme 2019-2020 under grant agreement No 900009.

[Link to Video](#)

0:09 / 10:20



Environmental  
Economics

Nuclear  
Technology

Marketing  
Strategy

Risk  
Communication

Sociology



2:36 / 10:20



# Life as a PhD student



7:10 / 10:20



# BASTA

## INTER-INSTITUTE COLLABORATION



CMK ENVIRONMENTAL LAW

### CMK APPLIED AND CIRCULAR CHEMISTRY

INPUT



PROCESS



OUTPUT

BIOCHAR

SOCIETAL TEA

COST & BENEFITS  
ANALYSIS



ECOSYSTEM SERVICES  
ENVIRONMENTAL IMPACT



CMK ENVIRONMENTAL ECONOMICS

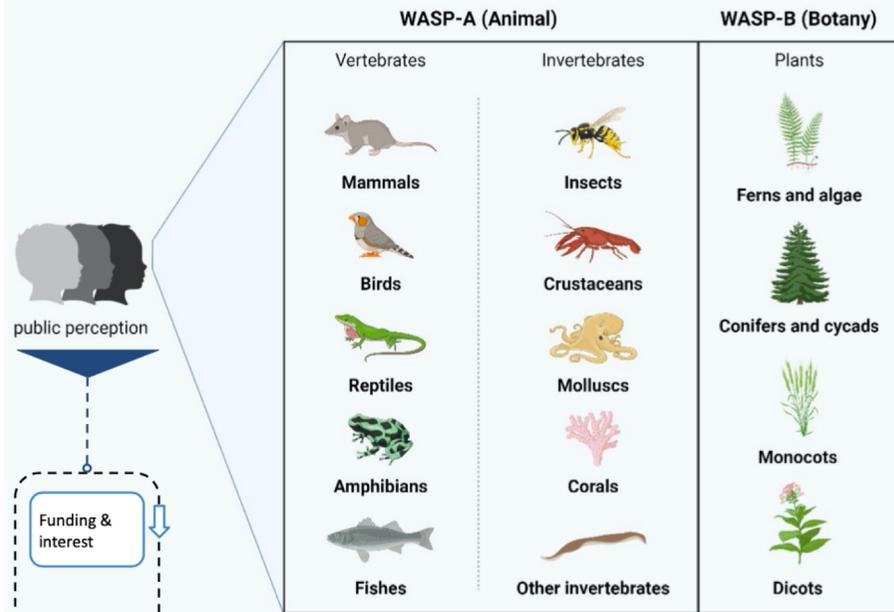


APPLICATIONS



CMK ENVIRONMENTAL BIOLOGY

## What is this research project?



### The problems

- ◆ Conservation is taxonomically biased toward large, mammal species and those species which are not in urgent need of conservation
- ◆ Conservation organizations want to redirect conservation effort toward the most important and threatened species, but lack information of societal preference
- ◆ Particularly, species promotion and knowledge sharing do not match public demand for many species groups, leading to less effective conservation effort

### Our contributions

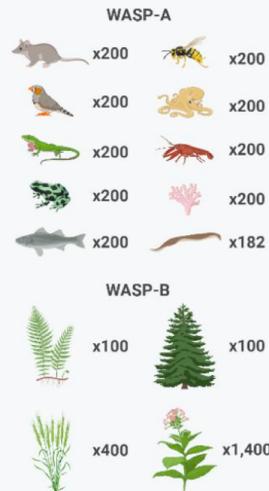
- 📖 An open-access database of public perception covering a wide range of diversity
- 💡 A stated-preference survey method to consistently measure and compare public perception across species taxa
- 🔍 Post-hoc analysis to verify perception-related theories, identify patterns, explore the uncharted area of public perception toward wildlife, especially for reptiles, amphibians, invertebrates and plants

## How can this research contribute to species conservation?

# WORLD ARCHIVES OF SPECIES PERCEPTION (The WASP Project)

## Database Design

### SPECIES SELECTION



Try out a sample survey!

Six traits for animals and six traits for plants are selected based on existing literature

### TRAIT SELECTION

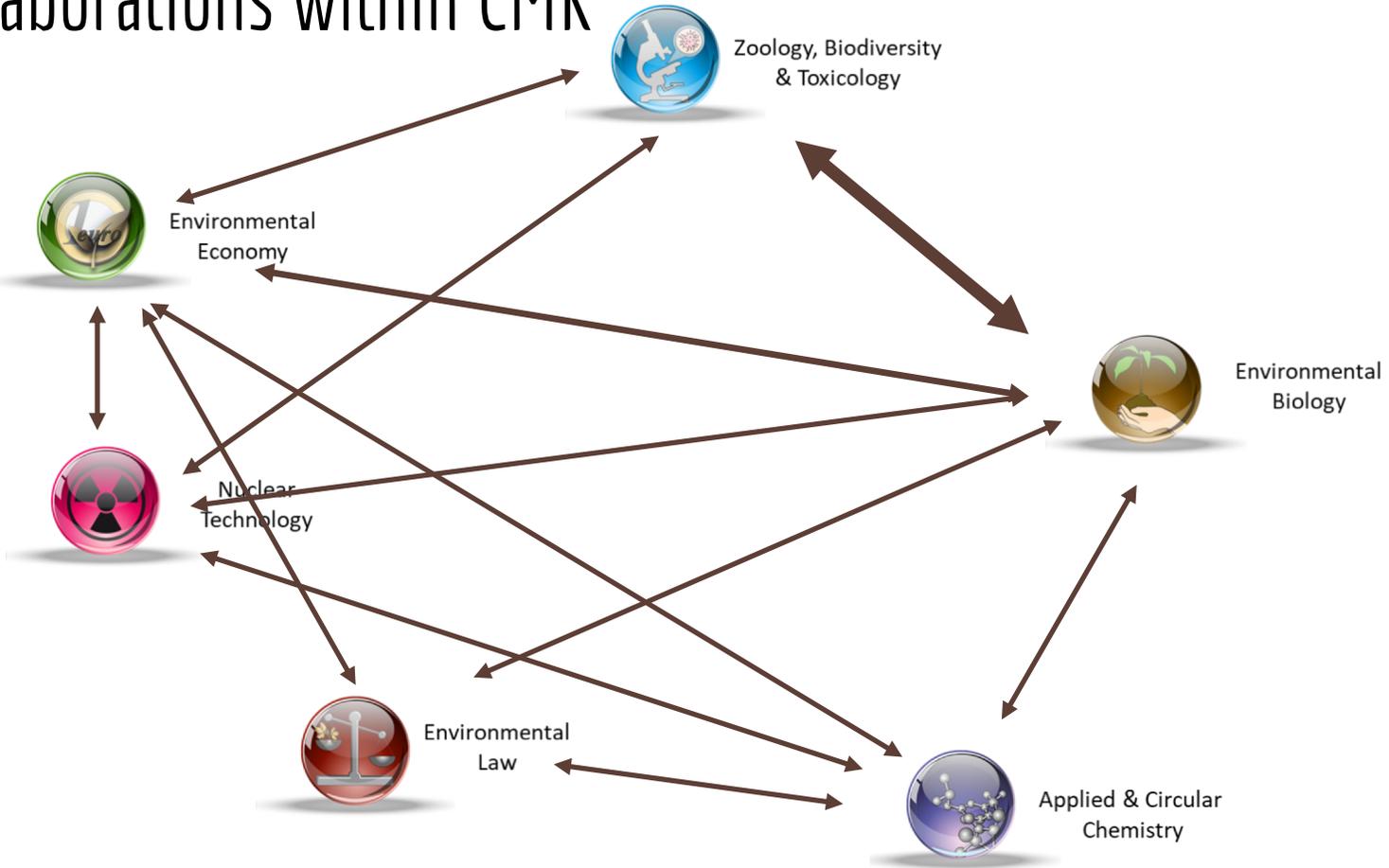


## Survey Illustration



Cute	1	2	3	4	5	6	7	8	9
Beautiful	1	2	3	4	5	6	7	8	9
Dangerous	1	2	3	4	5	6	7	8	9
Endangered	1	2	3	4	5	6	7	8	9
Intelligent	1	2	3	4	5	6	7	8	9
Important for Ecosystems	1	2	3	4	5	6	7	8	9

# Existing collaborations within CMK



Width of arrow indicative of intensity of collaboration



25 YEARS

**CMK**

CENTRE FOR  
ENVIRONMENTAL SCIENCES



**UHASSELT**

robert.malina@uhasselt.be

