European Commission

Research and Innovation

#HorizonEU

HORIZON EUROPE POLICY SUPPORT FACILITY

2021 – 2027

TOPIC 4 - Enabling Environments for Supporting and Sustaining Citizen Science

MARGARET GOLD, Citizen Science Lab, Leiden University

AGENDA DAY 1

Time	Description
08.30	Bus pick up from Hotel President, travel to Veszprém site visit
10.30	Arrive in Veszprém, at University of Pannonia (coffee, tea, snacks)
10.30-10.40	Welcome from the chair and presentation of the agenda (Alan Irwin, 10 minutes) Welcome by Prof. András Gelencsér, rector of the university (10 minutes)
10.40-11.00	Interactive presentation on the Climate Change project (20 minutes)
11.00-12.30	Discussion, Feedback and Analysis on ''Sustaining Citizen Science" by Margaret Gold (90 minutes)
12.30-13.00	Bus pick up from university to Lake Balaton, boarding on the boat at Balatonüred Port
13.00-14.00	Lunch on the boat
14.00-14.20	Short presentation on the Biodiversity project by prof. Gábor Földvári (20 minutes)
14.20-15.50	Discussion, Feedback and Analysis on ''Sustaining Citizen Science" by Margaret Gold (90 minutes)
15.50-16.00	Wrap-up of day one and short insight on Day 2 agenda (Alan Irwin)
16.00	Bus pick up from the boat at Kenese, travel to Budapest Hotel President

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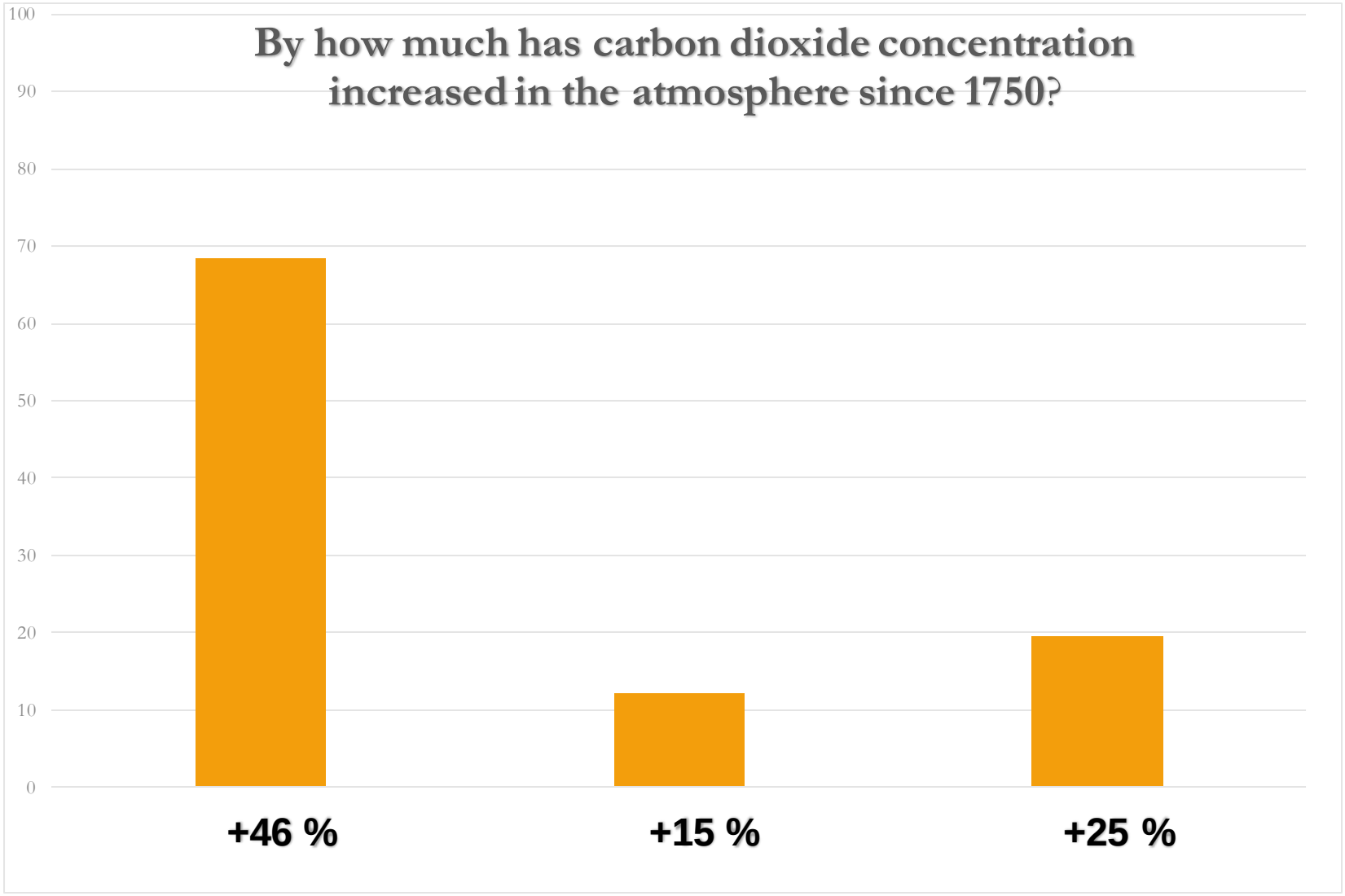
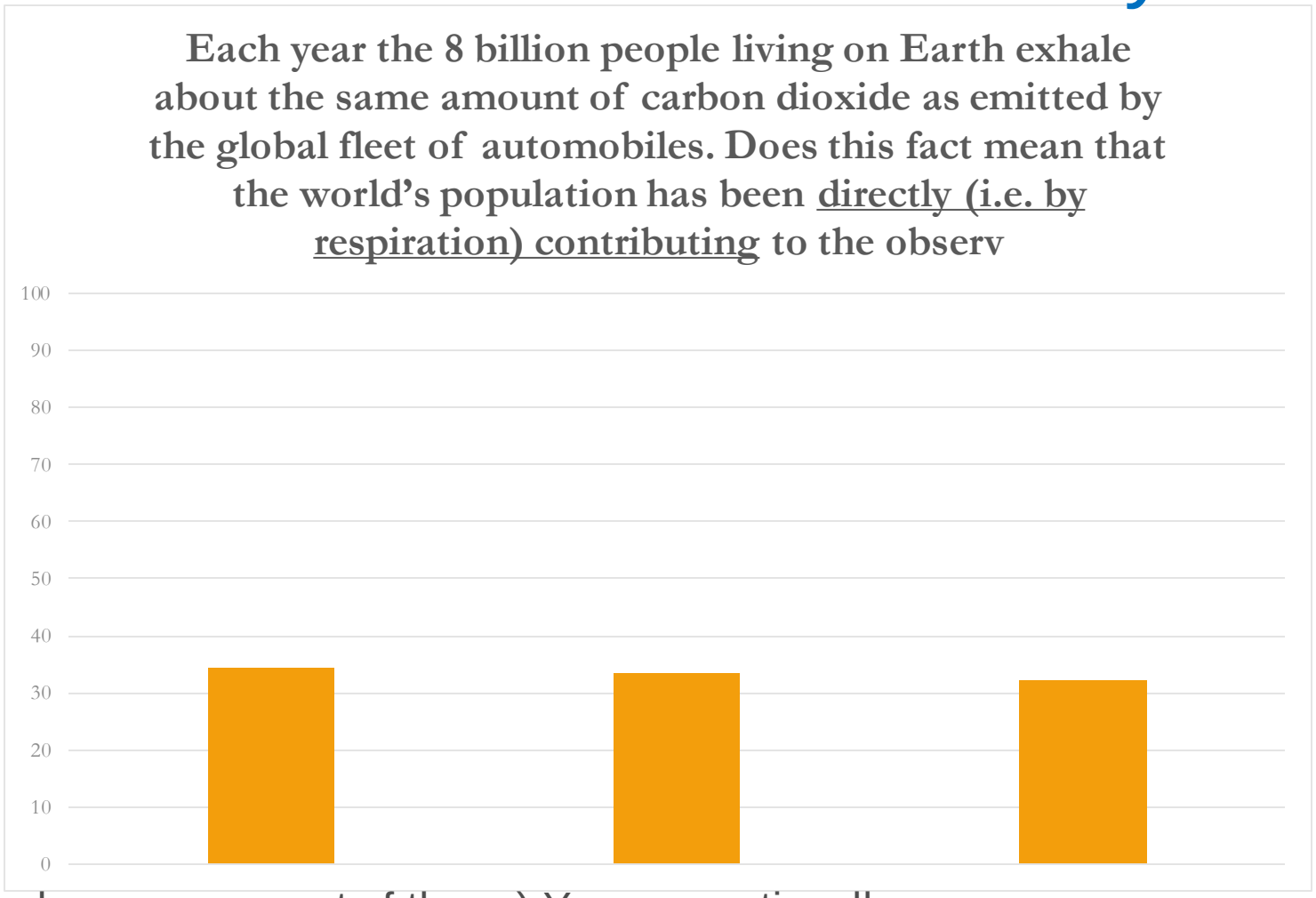
Climate change educational quiz

- Launched on Earth's Day 2021 through national media
- Completed by 5,656 people
- Those with university degree, PhD, STEM teachers were strongly overrepresented
- Short explanation followed each question
- **Average score: 35 %**

Mainstream facts – largely OK



Basic knowledge of the climate system is missing

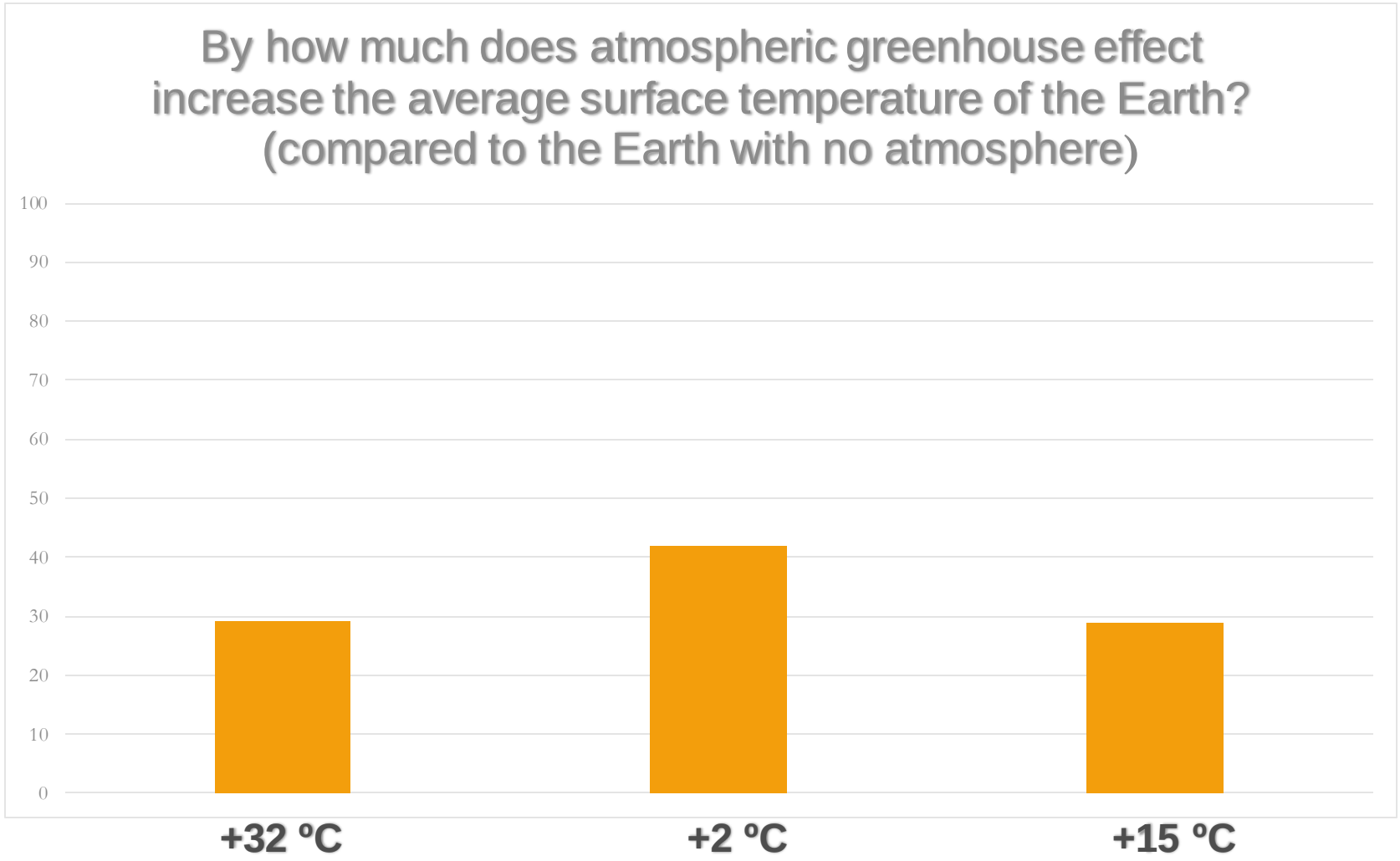


b) No, because we humans are part of the natural carbon cycle that does not add carbon dioxide to the atmosphere

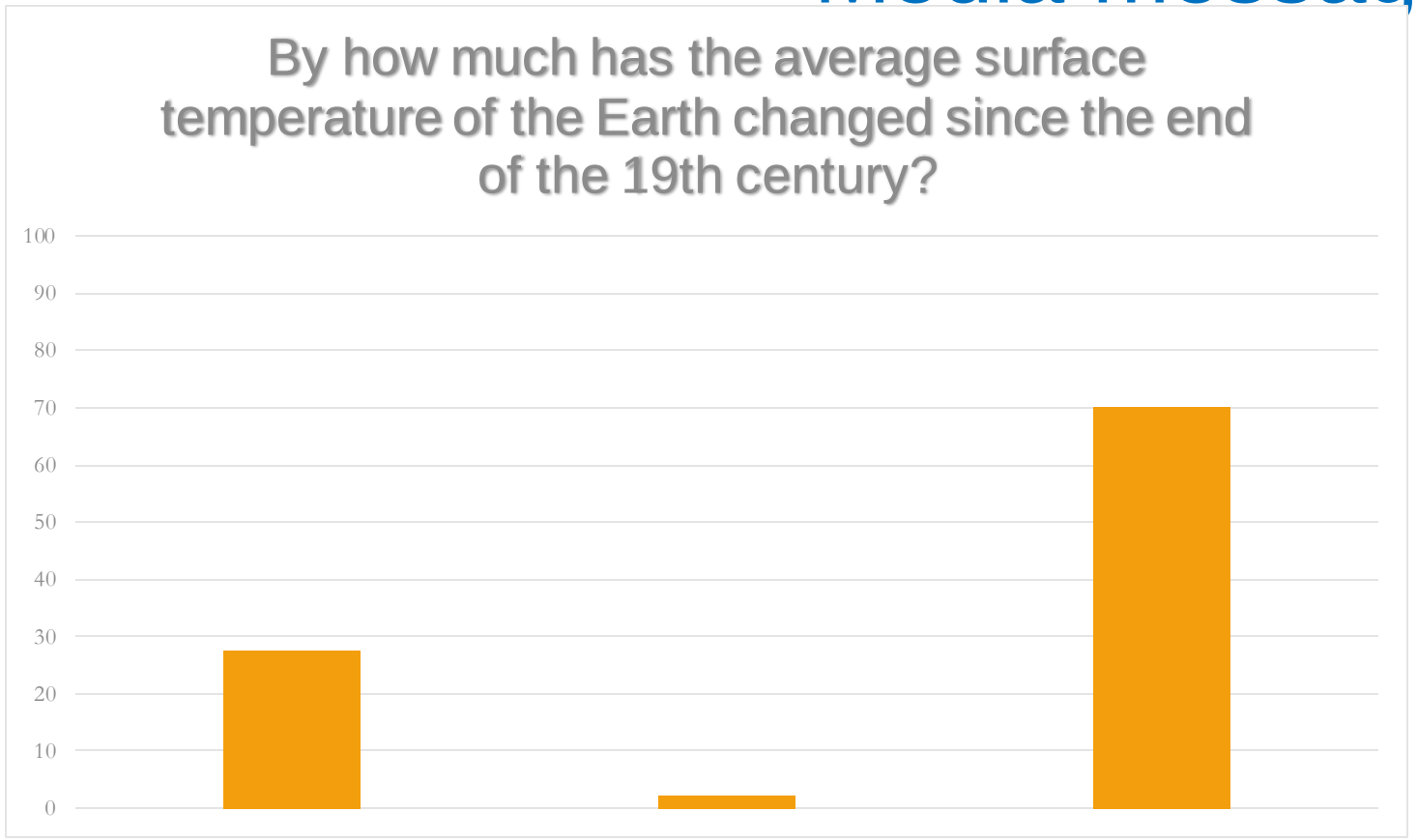
a) Yes, proportionally as the Earth's population is increasing

c) Yes, because carbon dioxide is carbon dioxide, regardless of its source

Basic knowledge of the climate system is missing



Media messages got wrong



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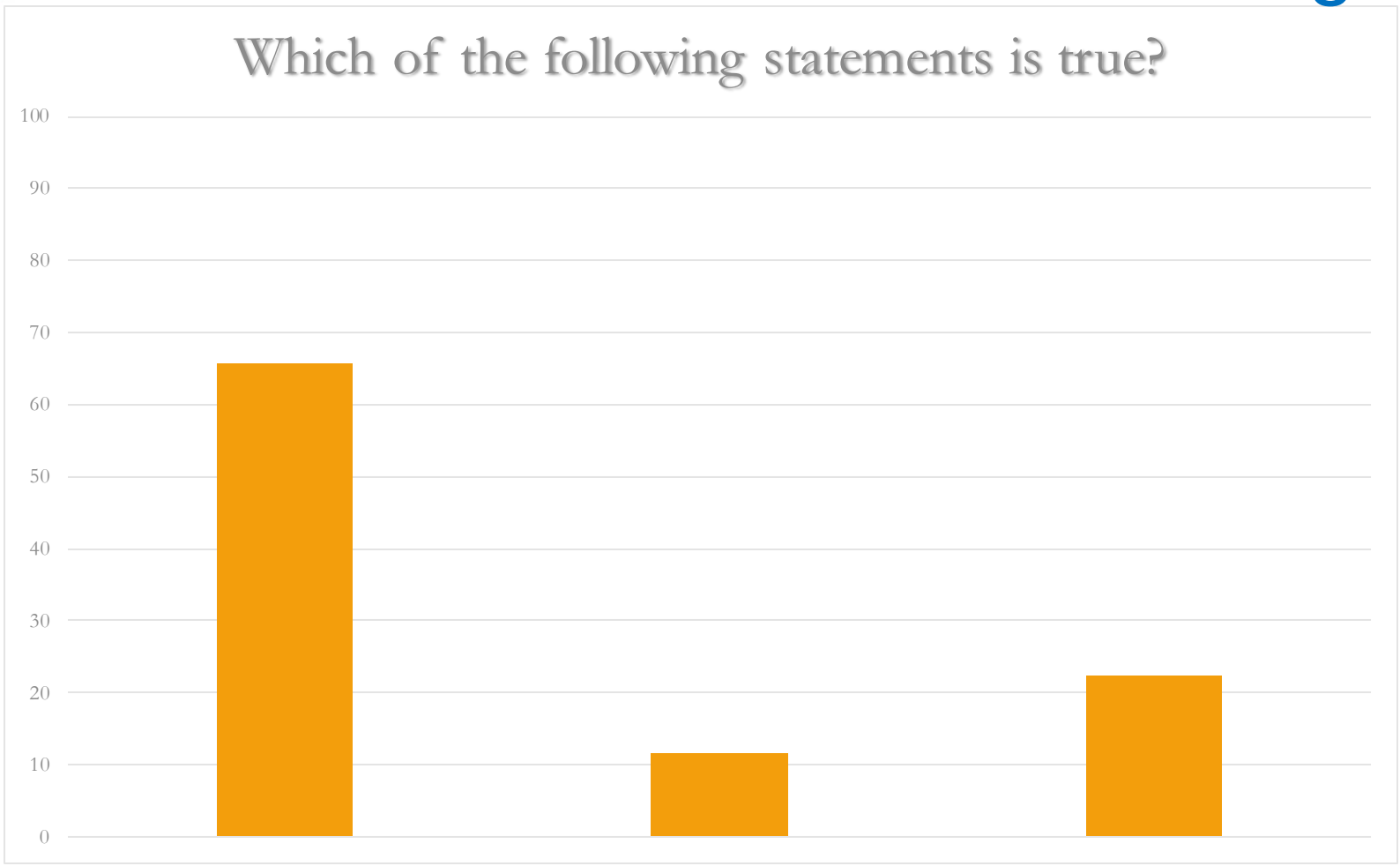

Recently the Arctic is warming four times faster than the Earth on average

Since the atmospheric concentration of carbon dioxide is the same across the globe, the Earth is warming uniformly

The increase in surface temperature over the Arctic is lower than elsewhere since part of the excess energy is being used to melt the ice

TOPIC 4 WORKSHOP PART II – DAY 1

11:00 – 11:15	**Energizer** – where in the world? *Where are you from, where do you live, where did you go on holiday?*
11:15 – 11:30	**Brief re-cap** - the enabling factors
11:30 – 12:00	**Bragging rights** - what are your shining examples? *Share your prepared example of an enabling factor in your country*
12:20 – 12:30	**Paired interviews** – how did you do that? *What example would you like to learn more about?* *Who haven't you spoken with yet?*

----------lunch on the boat----------

European Commission

TOPIC 4 WORKSHOP PART II – DAY 1

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----------lunch on the boat----------

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What is an Enabling Environment?

the factors that enable Citizen Science initiatives to be launched, sustained, grow and thrive – and ultimately achieve their aimed-for impacts and outcomes

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Legal & Policy Frameworks

Internal Policies & Culture

Capacity Building & Networks

Supporting (Data) Infrastructure

Societal Dialogue

FUNDING

European Commission

1. Supportive legal and policy frameworks

- Legislation aimed at sustaining or scaling-up current CS projects across various sectors,
- National research funding strategies to explicitly encourage and support citizen engagement in research and innovation,
- National directives to incorporate CS generated data in policy making and local governance, and
- Strengthened connections between national policy and European policy and directives.

2. Institutional policy frameworks, operational structures, and management cultures

- Institutional policies within research performing organisations (RPOs) and research funding organisations (RFOs) to promote and recognise CS research practices, for example within the context of Open Science or Responsible Research & Innovation (RRI),
- Support for CS practices embedded in operational structures,
- Career-path recognition for the value and importance of such practices, with matching rewards and incentives
- Local coalitions of RPOs, public authorities, businesses and Civil Society Organisations (CSOs) on topics being addressed by CS research or COs,
- Non-governmental Organisation (NGO) support of longer-term CS initiatives and COs,
- Internal communication structures and dedicated role descriptions for multi-stakeholder engagement within local authorities, national governance bodies, and non-governmental actors,
- Operational support of multi-stakeholder coordination across institutional boundaries, and
- Creation of an organisation function (e.g. “office of CS”) which provides support, promotion, and management capacity.

3. Capacity building activities

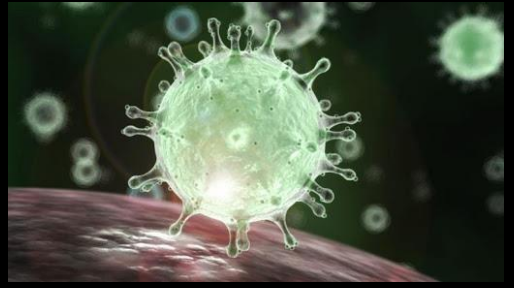
- Integration of skills training for CS as a practice within academic, professional, and life-long educational offerings,
- Dedicated roles within institutions for engaging with the public and CSOs, supporting CS research practices, and/or developing pathways for citizen-generated data, and
- National and regional-level CS platforms and associations for knowledge exchange, training, and development of best practice.

4. Supportive technological and data infrastructure

- Technological tools and platforms for data gathering and analysis, and data infrastructures for data aggregation and data sharing, that are findable, accessible, interoperable, and reusable (FAIR),
- Integration with official data systems and frameworks,
- Integration of CS infrastructure within national data systems, and
- Funding support for ongoing development of technological tools and platforms for CS and COs.

5. Societal dialogue and public fora promoting participation of public and private stakeholders

- National research agenda setting in collaboration with the public and CSOs,
- Impactful alliances between CSOs, NGOs and community-based organisations to promote dialogue and knowledge exchange, and
- Supportive infrastructure for public-private collaborations.



Citizen science helps to prepare for emerging infectious diseases

Gábor Földvári

Institute of Evolution
Centre for Ecological Research
Budapest, Hungary

Thanks to:

Éva Szabó

Gábor Kemenesi, Gábor Endre Tóth

Daniel R. Brooks

- **National Laboratory for Health Security**

- **PRAGMATICK COST Action**

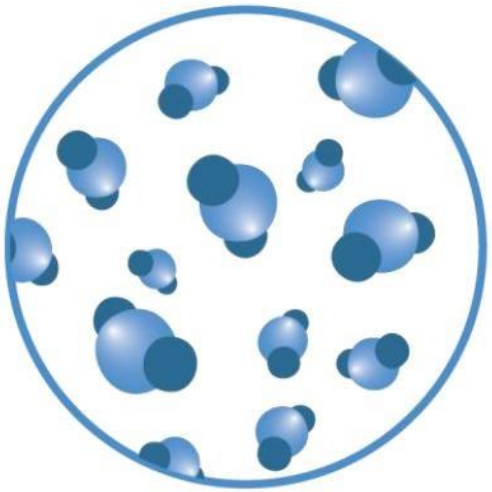
"Prevention, anticipation and mitigation of tick-borne disease risk applying the DAMA protocol

cost.eu

cost
EUROPEAN COOPERATION IN SCIENCE & TECHNOLOGY

FoldvariGabor@gmx.de

CO_2
concentration



Highest

in at least

2 million years

Sea level
rise

Fastest rates

in at least

3000 years

Arctic sea ice
area

Lowest level

in at least

1000 years

Glaciers
retreat

Unprecedented

in at least

2000 years


Hodonin, Czech Republic
July 2021


France, August 2022

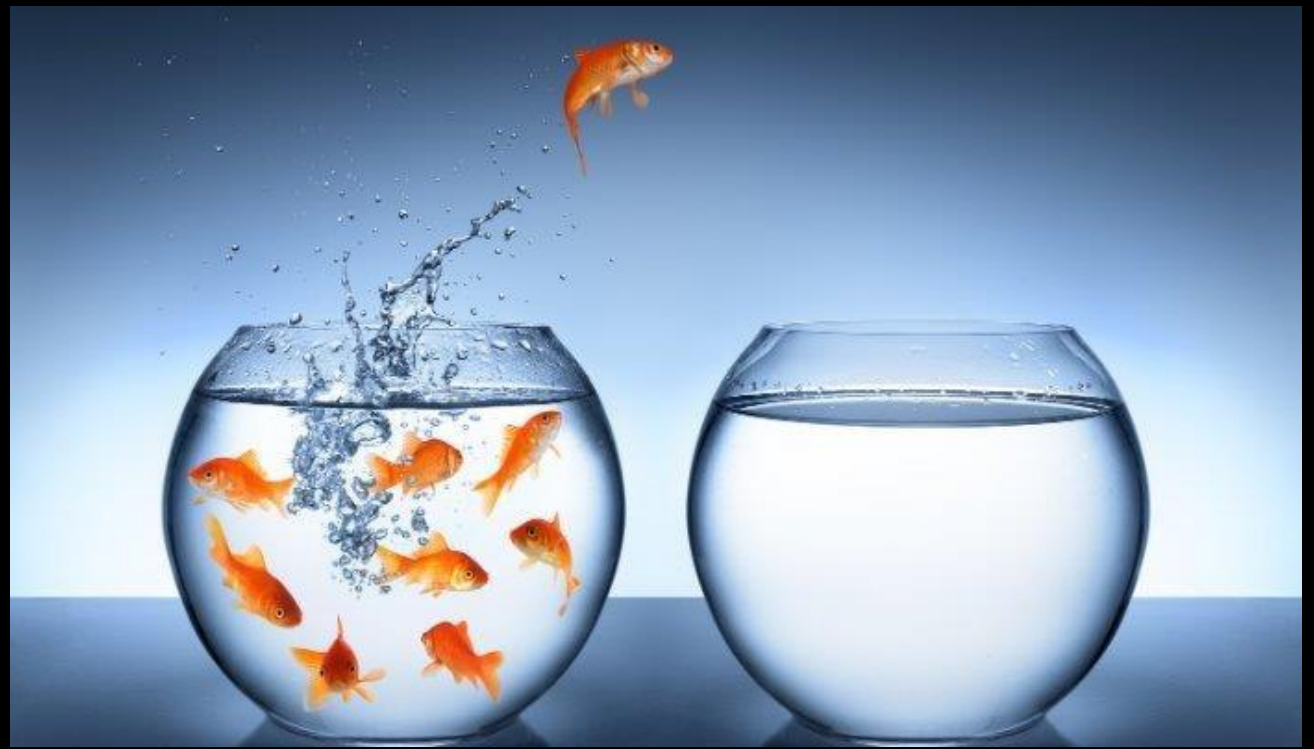

#PandemicsReport
ipbes

The Parasite Paradox

Pathogens are ecological specialists strongly co-adapted to their hosts

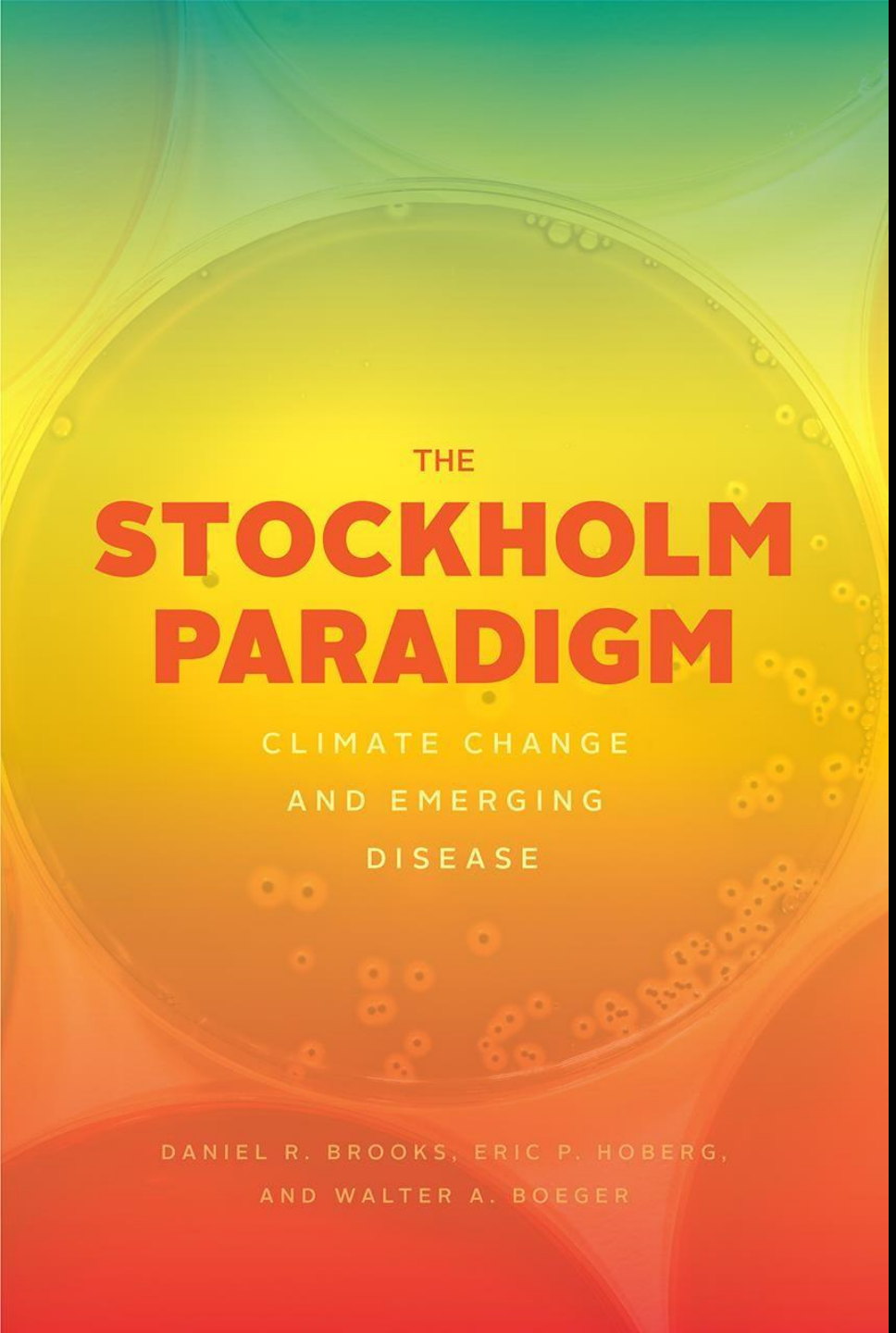
BUT

Emerging diseases occur rapidly, shifts to relatively unrelated hosts are common



Classical co-evolutionary model

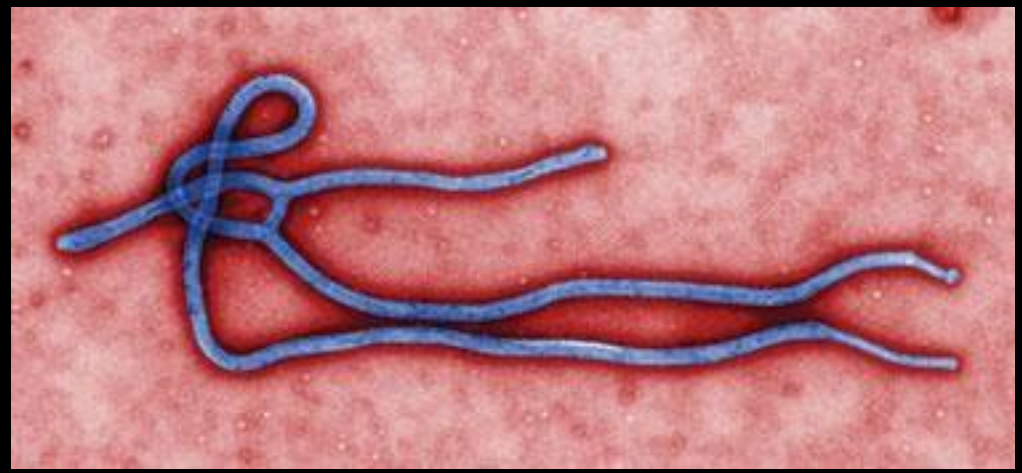
- "Parasites become more specialized to their hosts with time"
- "Host
- **"A g** **to new**



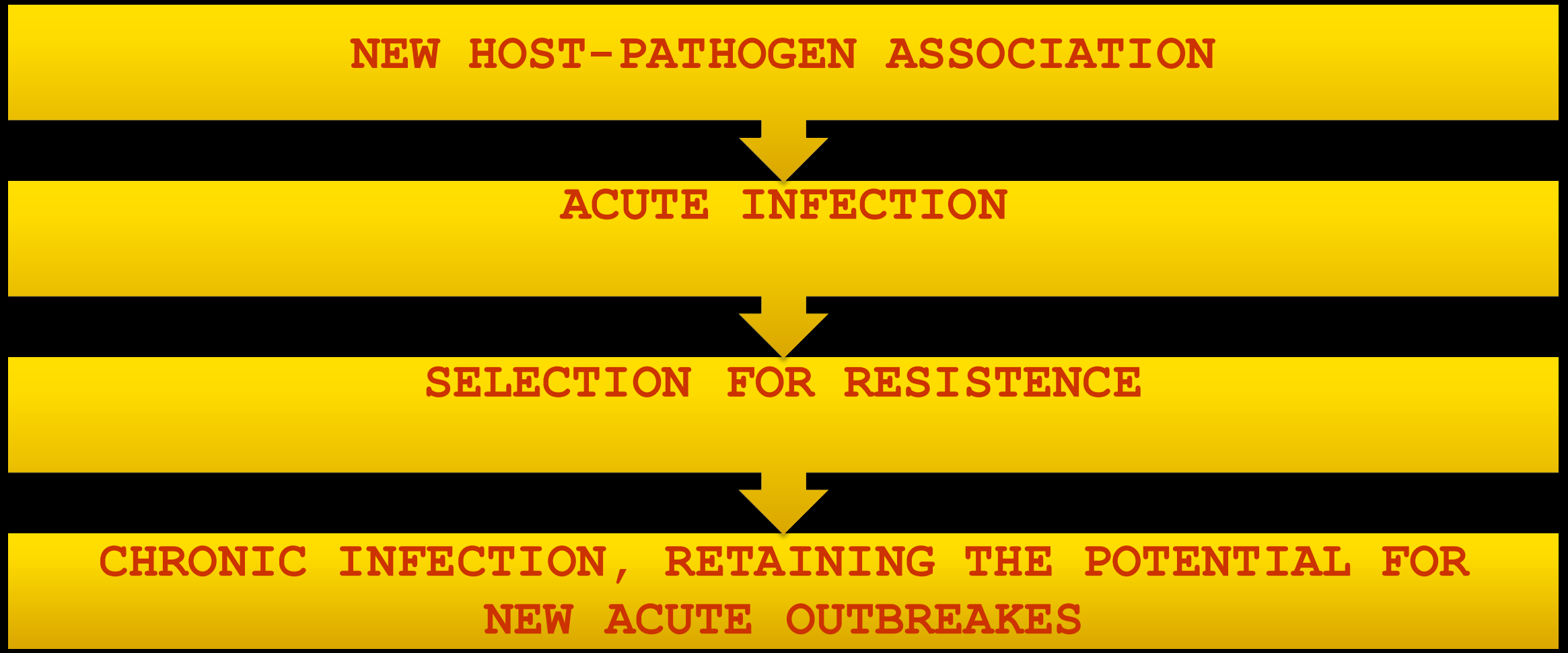
- ✓ **Ecological fitting** (Janzen, 1985) ensures that there is no need for mutations for host colonization
- ✓ Climate change and habitat loss will increase migration in vectors, hosts and pathogens
- ✓ This leads to new contacts and new EIDs
- ✓ **Emerging Infectious Diseases will be the rule and not the exception during episodes of climate change**

Low probability, high impact EIDs

- These frighten us the most, but they are not the major concern and expense
- Most international initiatives (e.g. One Health) target these, usually viral diseases



High probability, low impact EIDs: cause Pathogen pollution

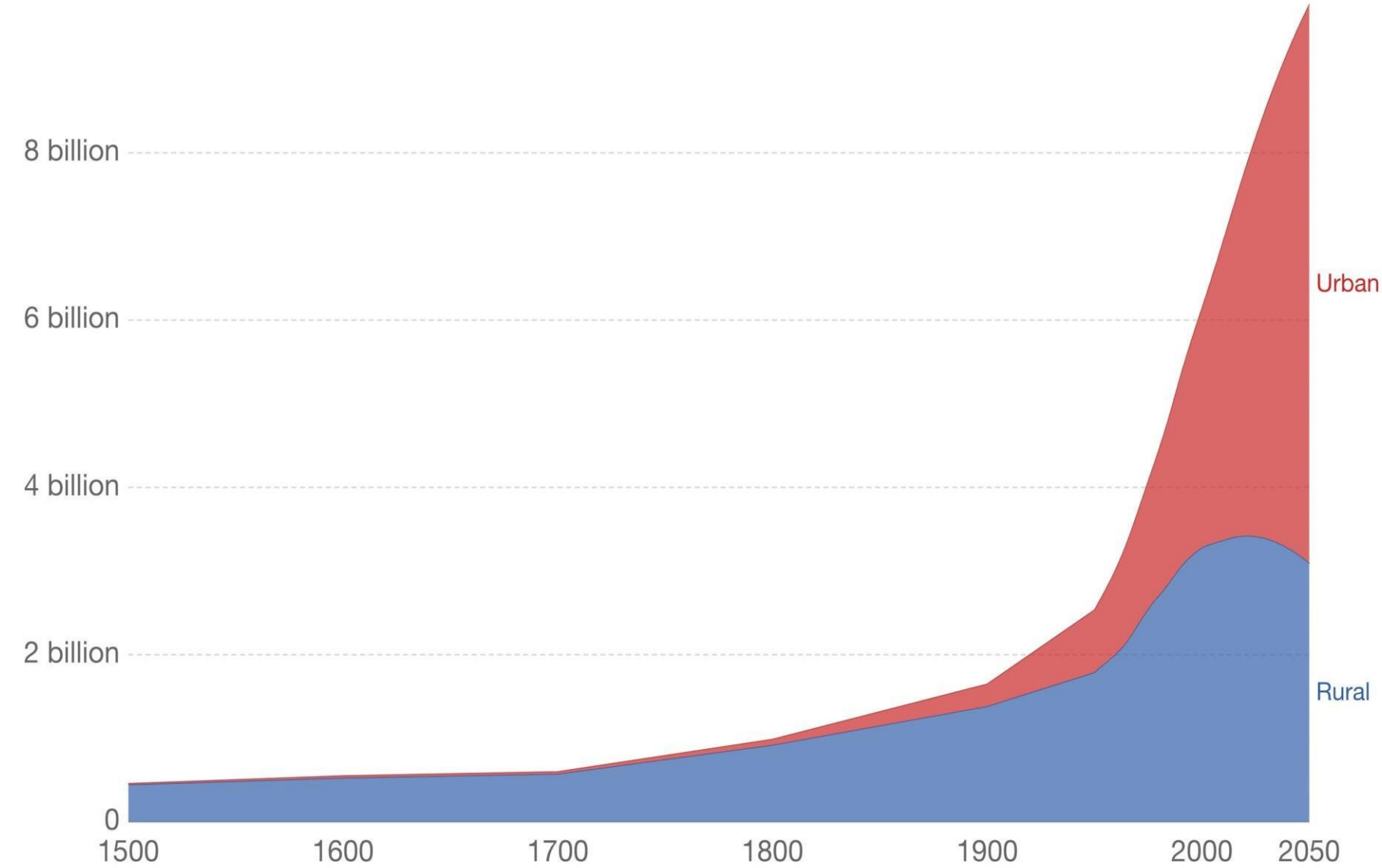


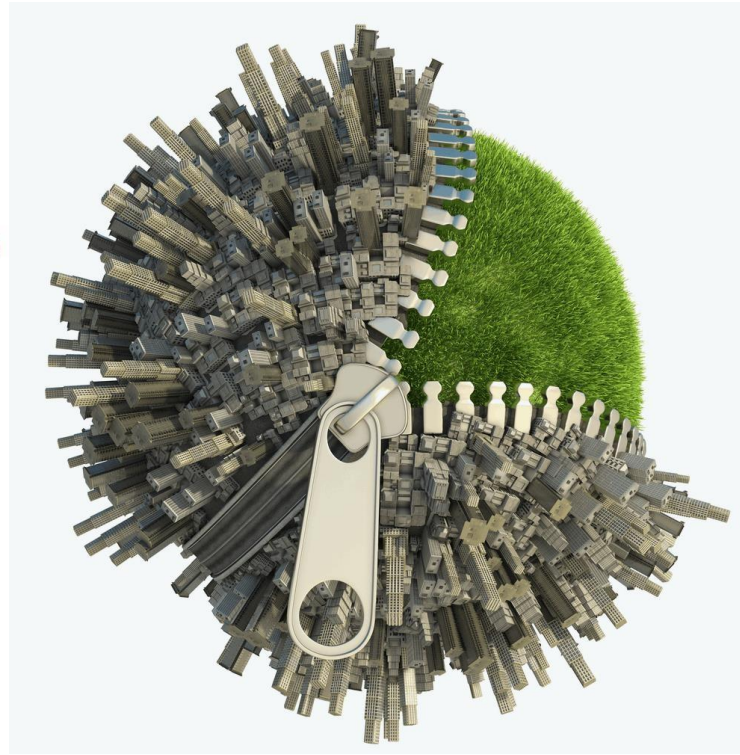
Once established, they never disappear

Urban and rural population projected to 2050, World

Total urban and rural population, given as estimates to 2016, and UN projections to 2050. Projections are based on the UN World Urbanization Prospects and its median fertility scenario.

Our World in Data





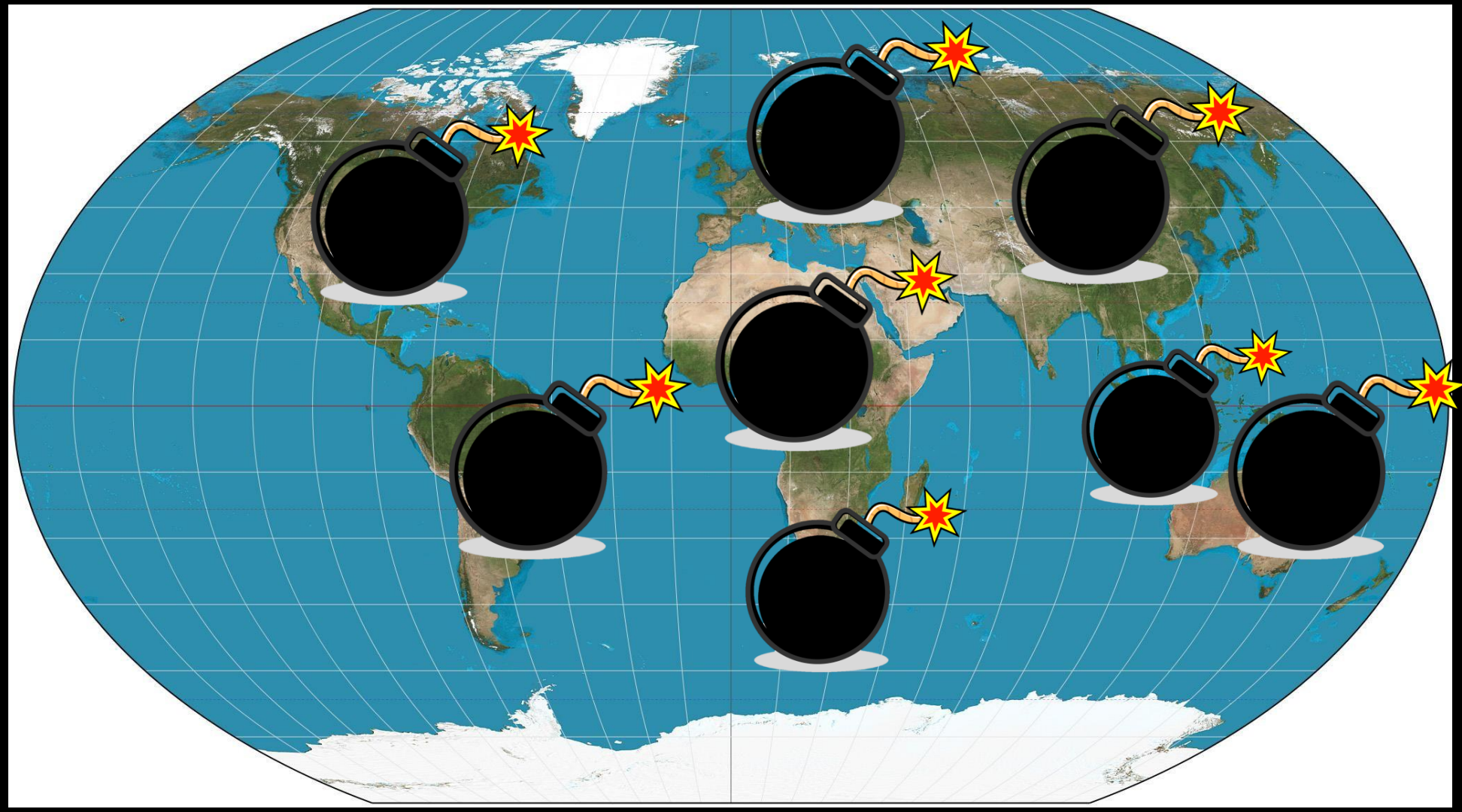
Source: OWID based on UN World Urbanization Prospects 2018 and historical sources (see Sources)


© Alf Jacob Nilsen/Solent News/REX

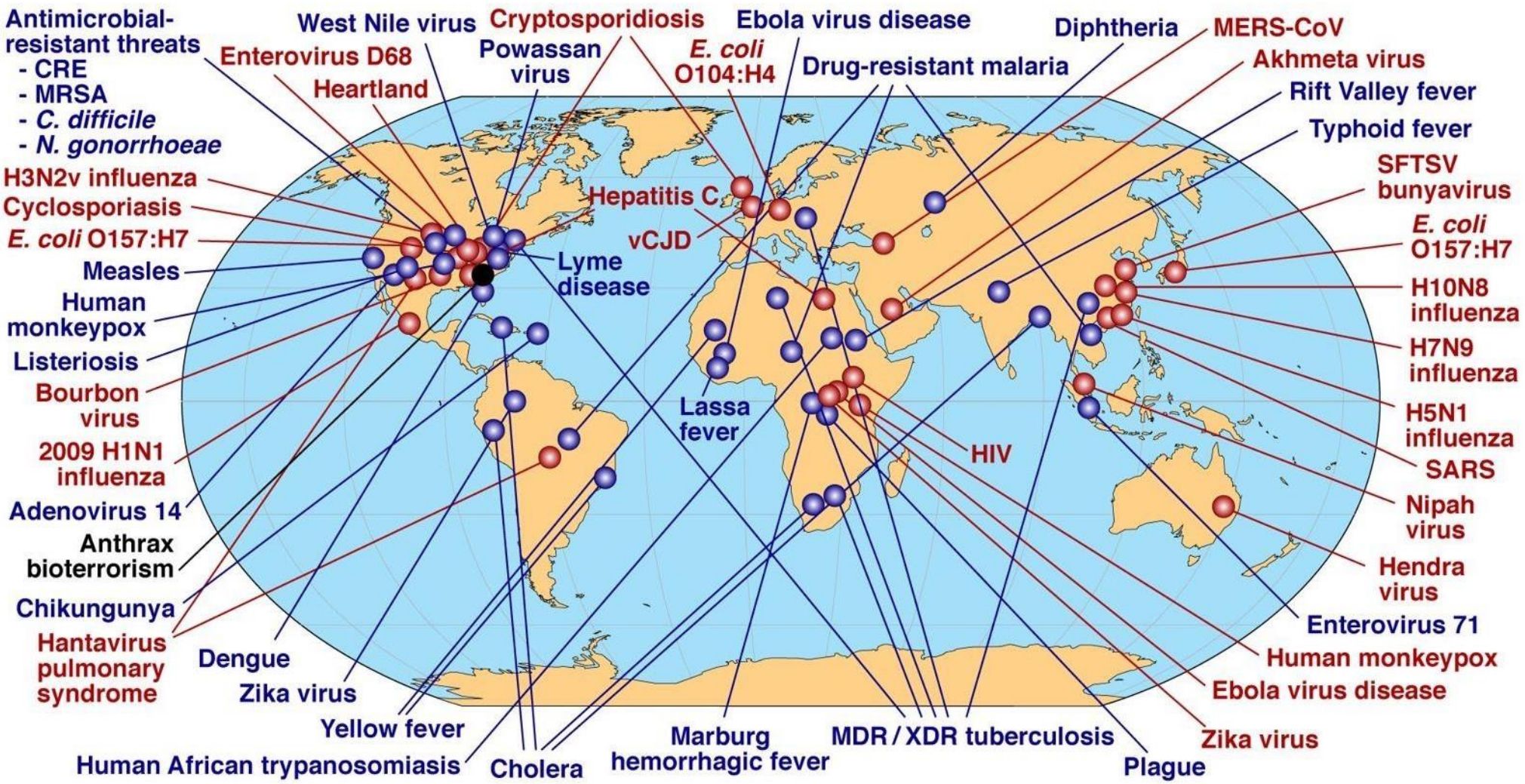
*Ordered by scheduled international passenger kilometres flown in 2010 (source Wikipedia).
Only routes in the OpenFlights database are plotted.

Map: James Cheshire, spatialanalysis.co.uk
Flights Data: openflights.org
Basemap Data: naturalearthdata.com

We live in a minefield of evolutionary accidents waiting to happen



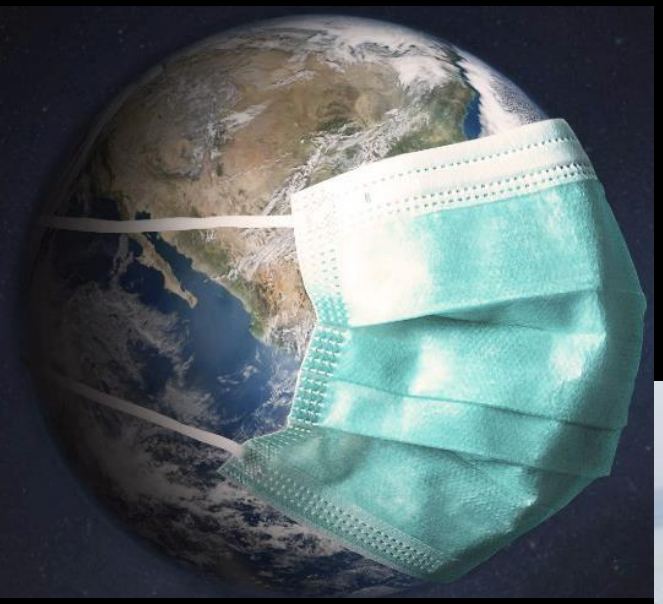
Global Examples of Emerging and Re-Emerging Infectious Diseases



September 2017

The money spent yearly for EIDs:

appr. 1.3 trillion (1.300.000.000.000)
USD per year before COVID-19



Costs of *responding* to a single EID (COVID-19) has been several 10 trillion USD...

What can we do?

We can be proactive about coping with emerging diseases based on the Stockholm paradigm

- ✓ Host changes leading to EID can largely be predicted because pre-existing capacities for colonizing new hosts are highly specific and phylogenetically conservative

DAMA protocol: *Finding them before they find us*

Document
Assess
Monitor
Act

Brooks et al. (2014) Finding them before they find us: informatics, parasites, and environments in accelerating climate change. *Comparative Parasitology* 81:155-164.

DOCUMENT

Assess the risk

ASSESS (the threat): phylogenetic triage

Is this a known pathogen?
Is this closely related to a known pathogen?

If NO to both, ignore but archive

If YES to either, gather or infer information about its transmission dynamics, microhabitat preferences and natural history

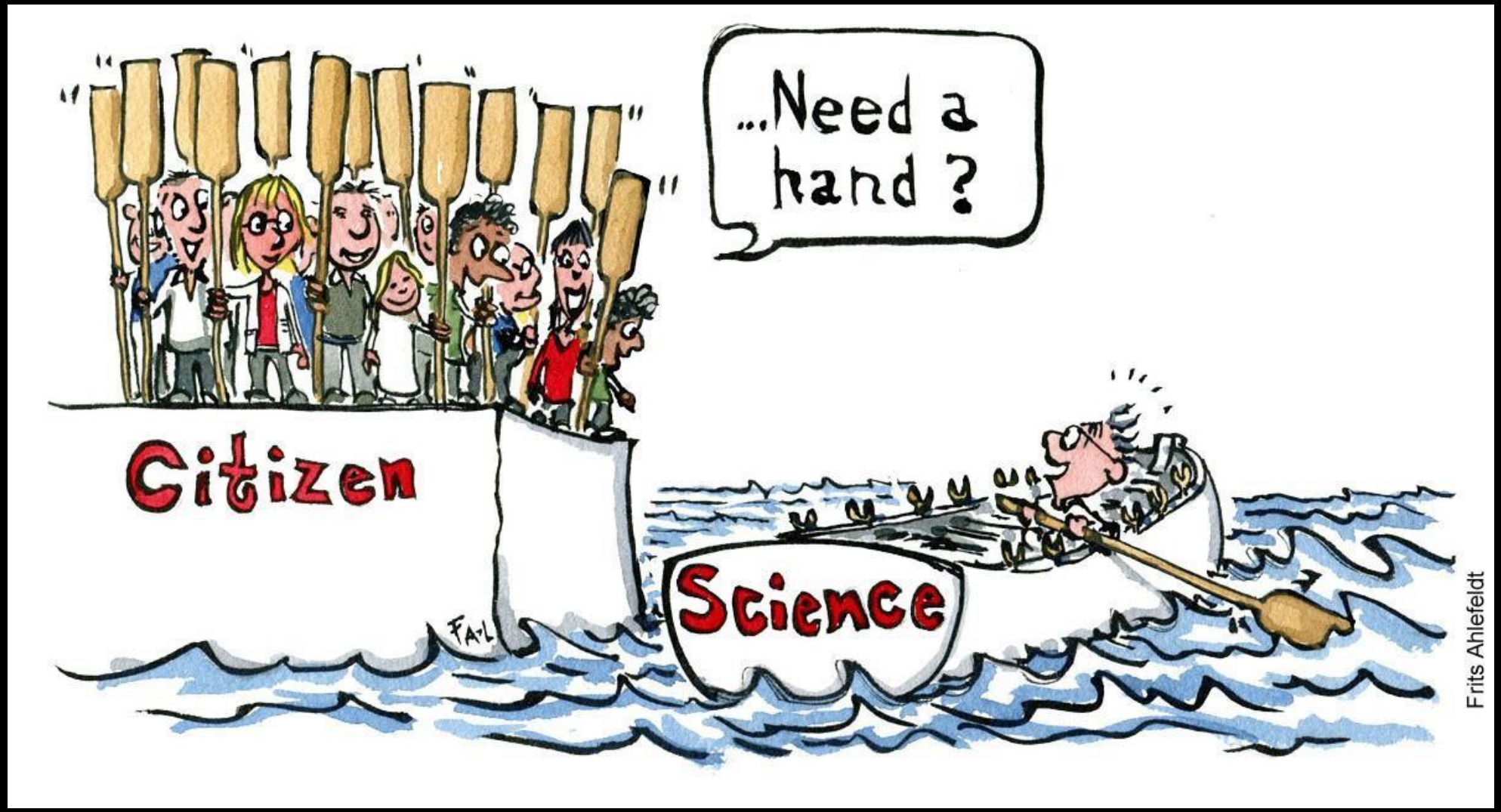
MONITOR

ACT

ACT: Coping and Cooperating

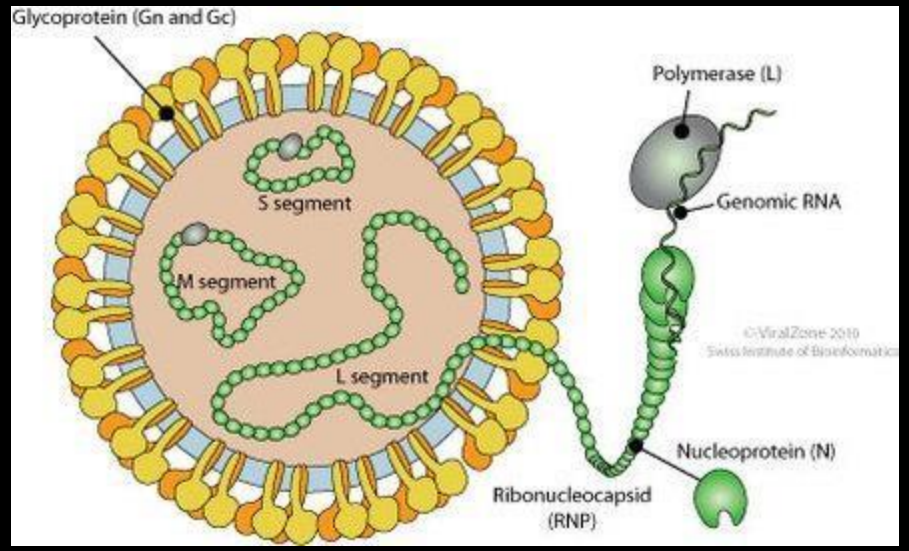
- Teach citizen scientists how to reduce chances of establishment
- Reduce risk of exposure, recognize new arrivals rapidly
- Mobilize universities, governmental agencies and NGOs
- **Provide proactive suggestions to decision makers**

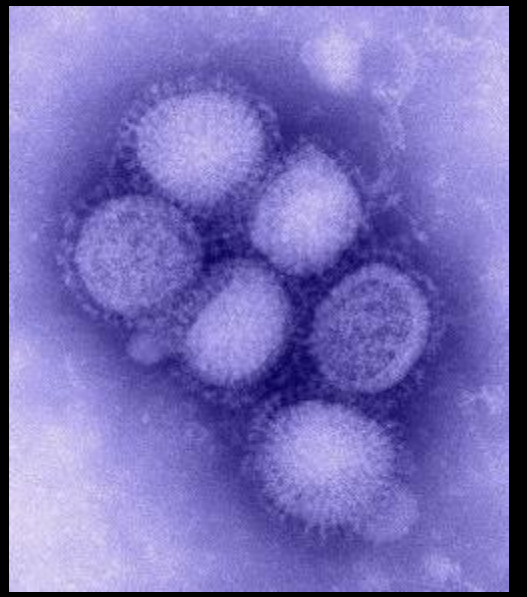
INTERNATIONAL SCIENTFIC COOPERATION


...Need a hand ?
Citizen
Science
FA-L
Frits Ahlefeldt

Hyalomma ticks

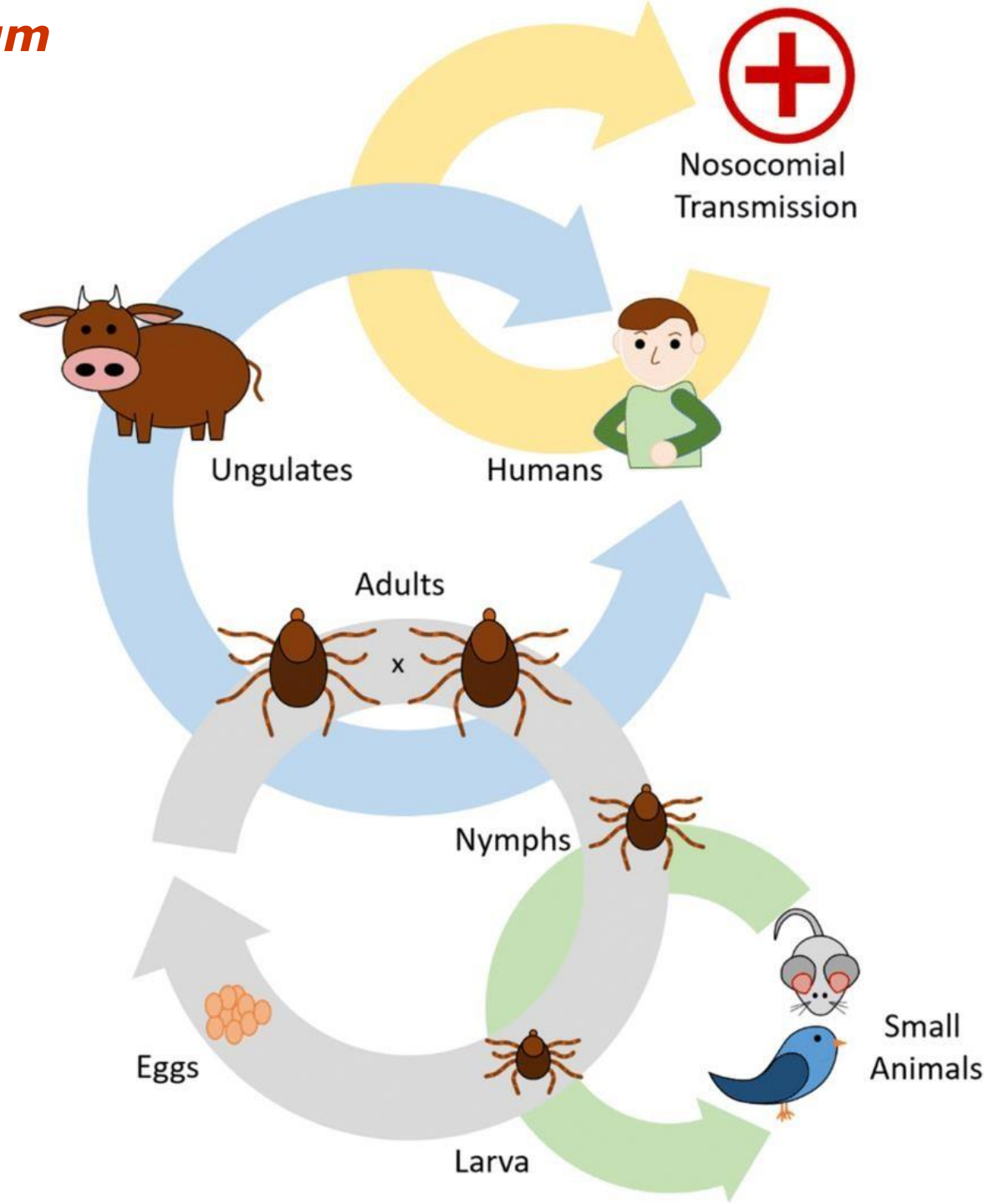
Crimean-Congo Haemorrhagic Fever Virus (CCHFV)



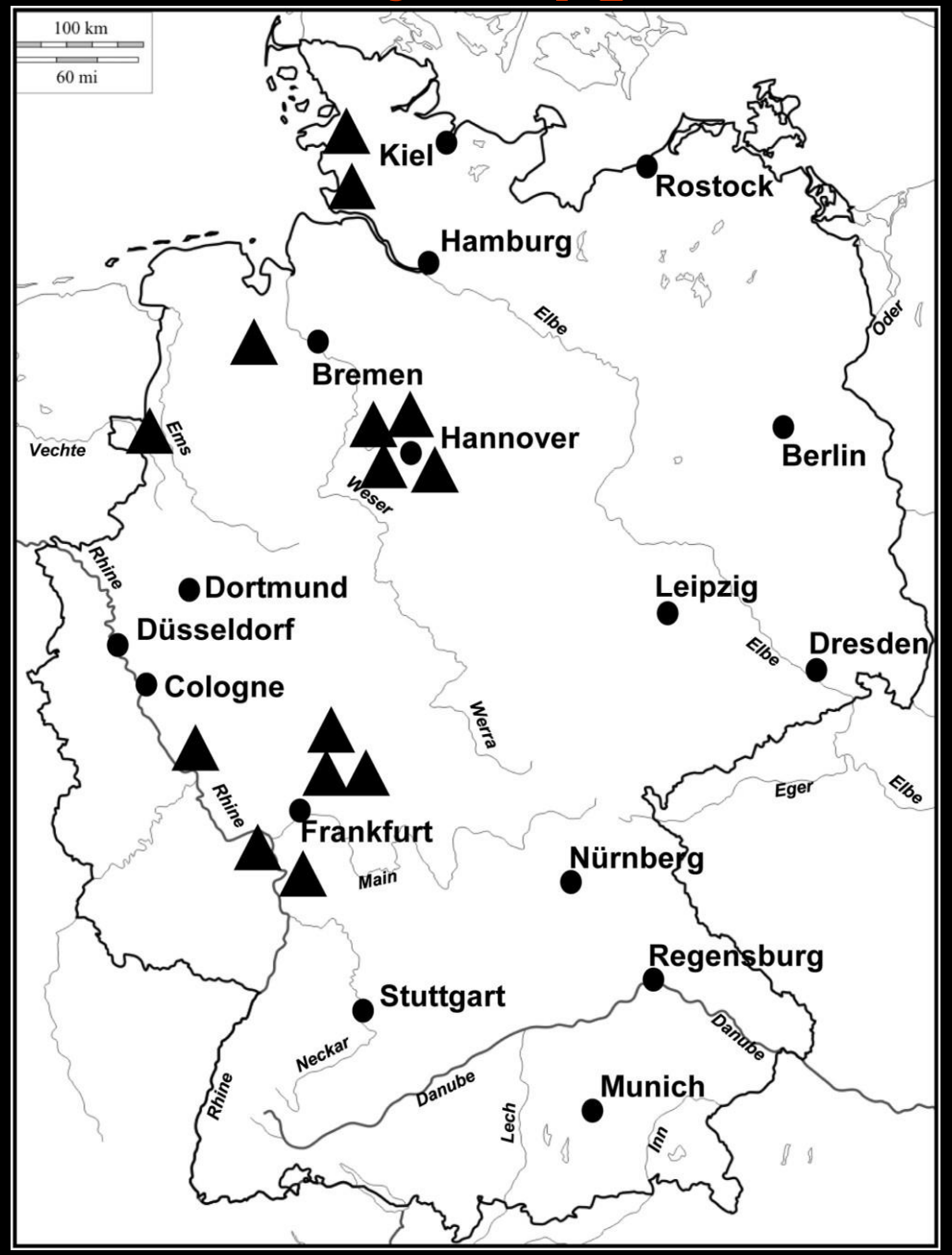


Hyalomma marginatum

is a two-host tick

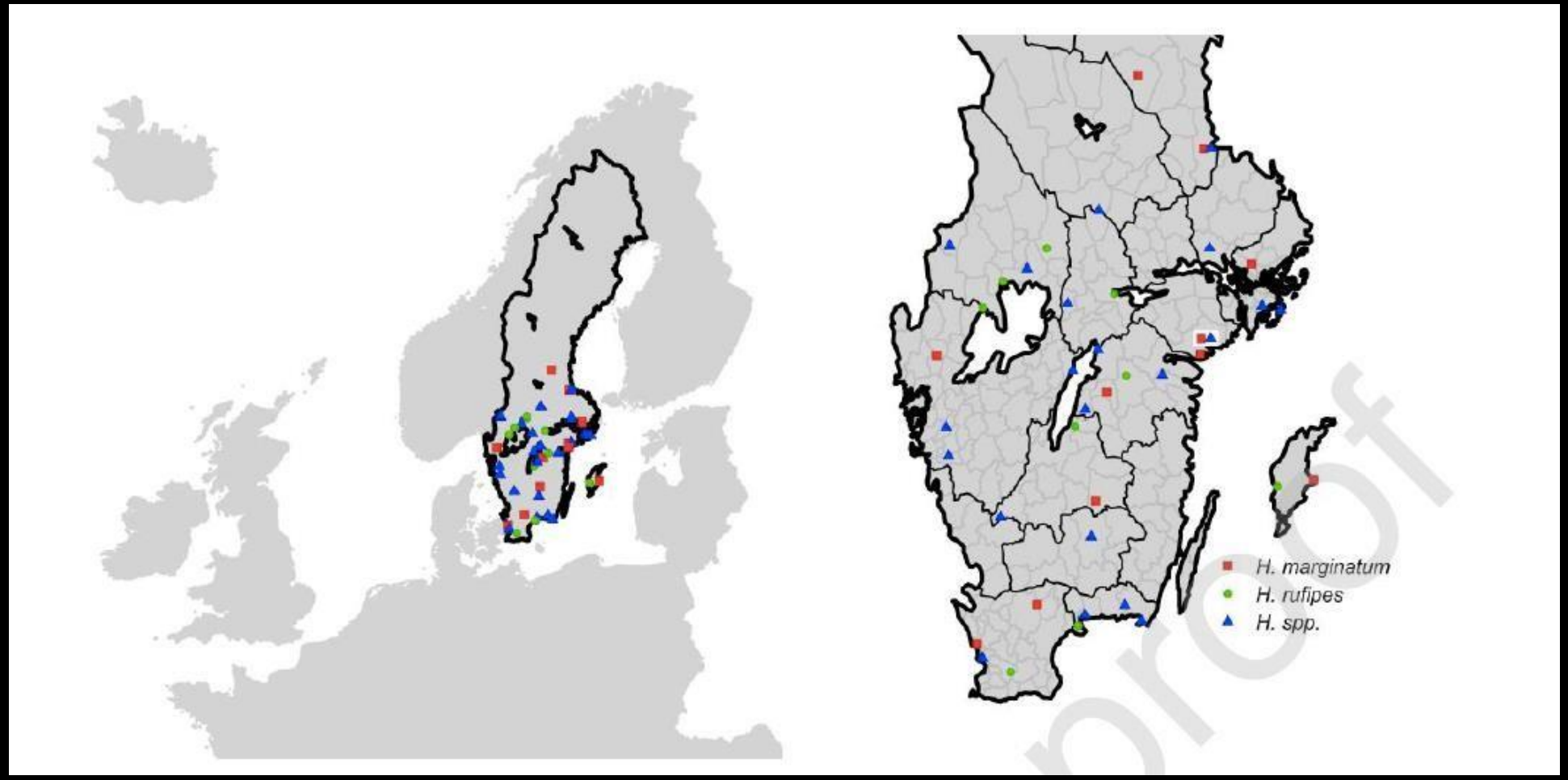


Hyalomma marginatum and *Hy. rufipes* adults observed in Germany



Chitimia-Dobler et al. 2019

Hyalomma marginatum and *Hy. rufipes* adults observed in Sweden



Grandi et al. 2020 *Ticks and Tick-borne Diseases*

Beküldés

Hogyan tud Ön is segíteni a két faj elterjedésének magyarországi feltérképezésében?

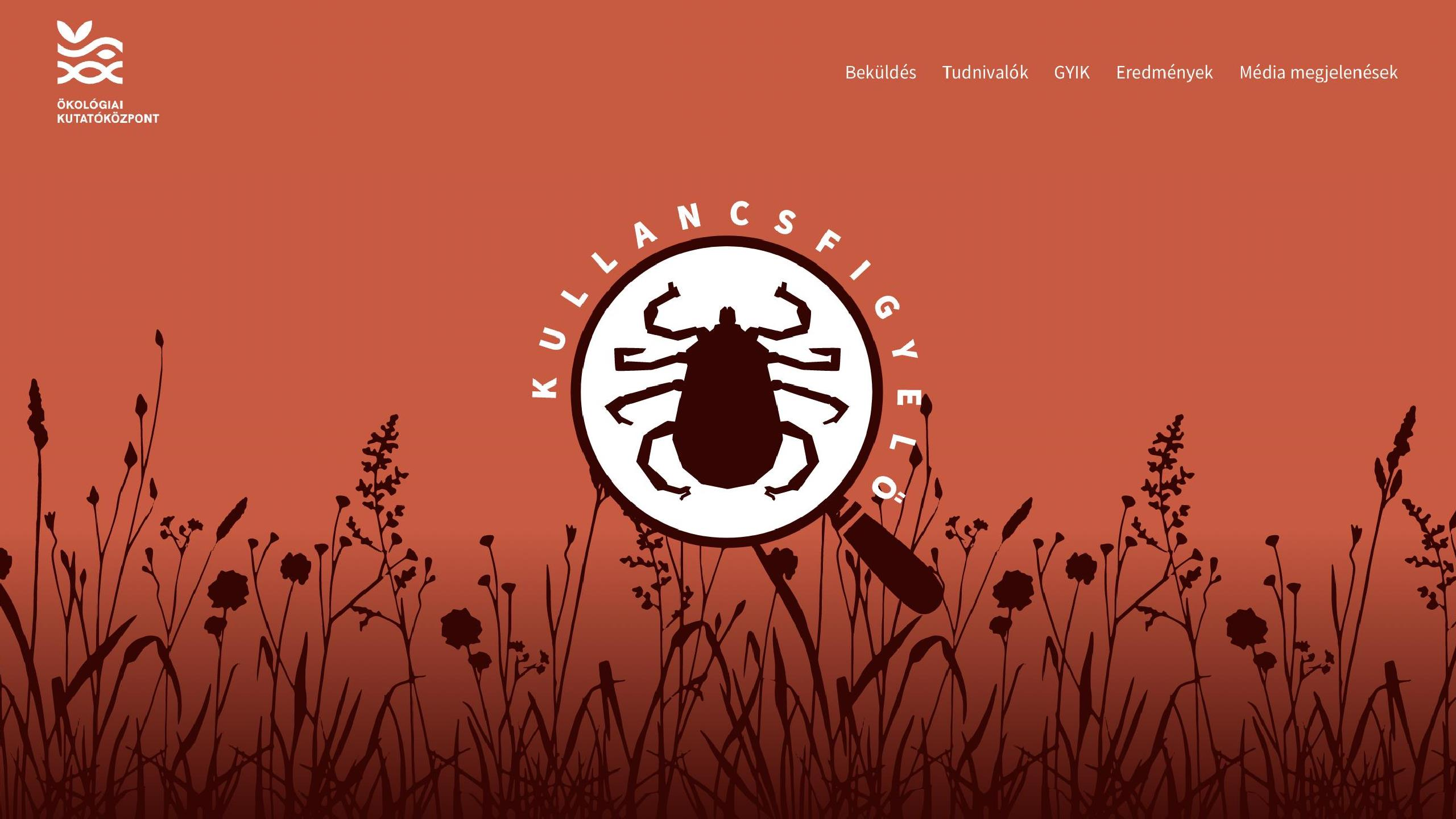
Elsősorban fotók beküldésével. Amennyiben úgy gondolja, hogy *Hyalomma* fajt talált, kérjük, készítsen róla minél jobb minőségű fényképet. Fontos, hogy az állat háti és hasi oldaláról is készüljön felvétel.

Különösen nagy segítség számunkra, ha még életben lévő példányt tudunk megvizsgálni, ezért ha az elcsípett állatot életben hagyta, kérjük, hogy a fényképek elkészülte után helyezze egy jól záró tárolóedénybe (pl. befőttesüveg, gyógyszeres tégely) és lépjen velünk kapcsolatba.

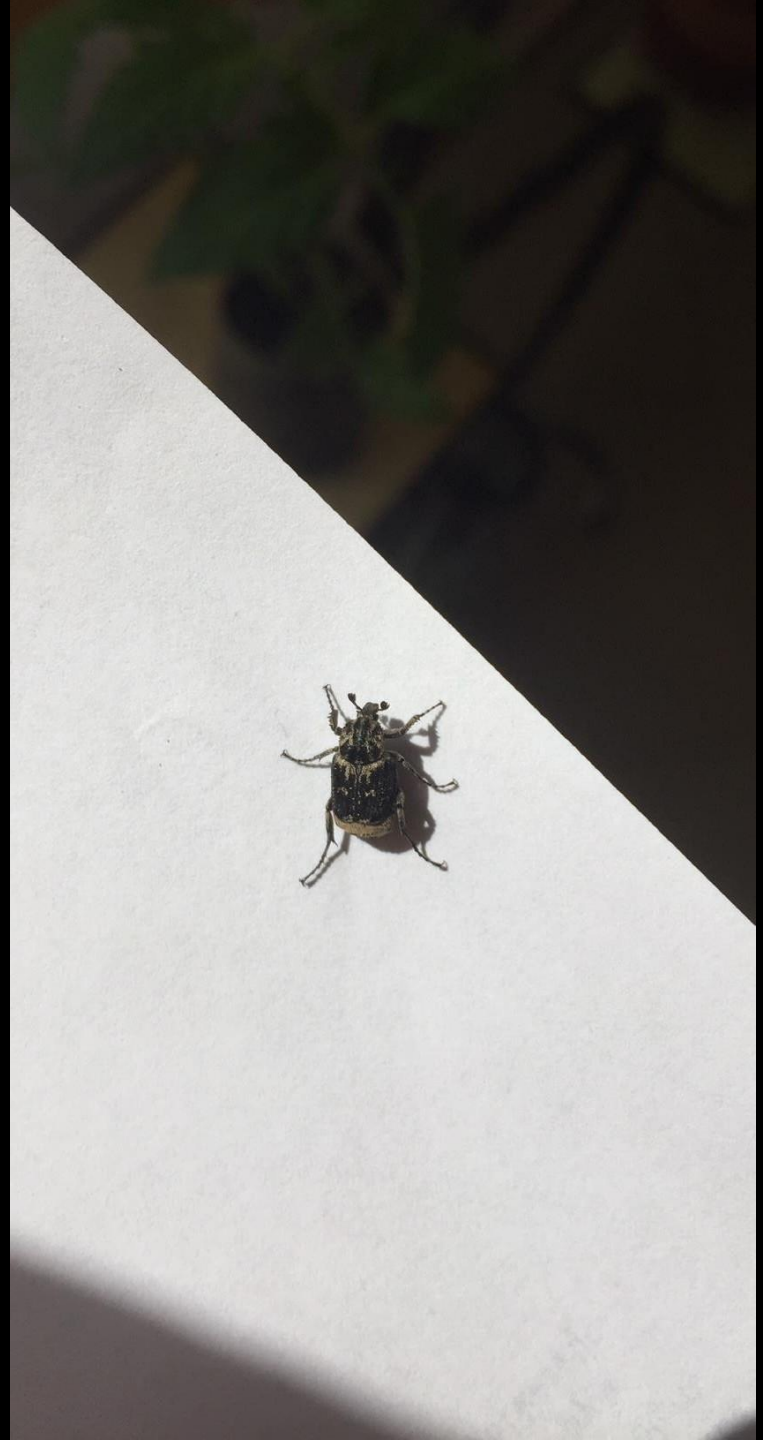
A képek beküldésekor kérjük, csatolja a következő információkat:

- A beküldő nevét és email címét
- A pontos dátumot, amikor az állatot találta
- Az észlelés helyszínét – településnév, földrajzi terület
- Hol találta a kullancsot? például: talajon, valamilyen állaton, emberen
- Mászkált a testfelületen vagy már elkezdett táplálkozni a kullancs?

ÖKOLÓGIAI
KUTATÓKÖZPONT




SHOT ON REDMI 9
AI QUAD CAMERA



Media presence:
necessary but risky...


MENS/HOMMES
J06059
MADE IN VIETNAM
FABRIQUÉ AU VIETNAM
MAY BE COVERED BY US PAT.
WWW.PATENTS.WWWINC.COM
SIZE/GRANDEUR
USA
16
UK
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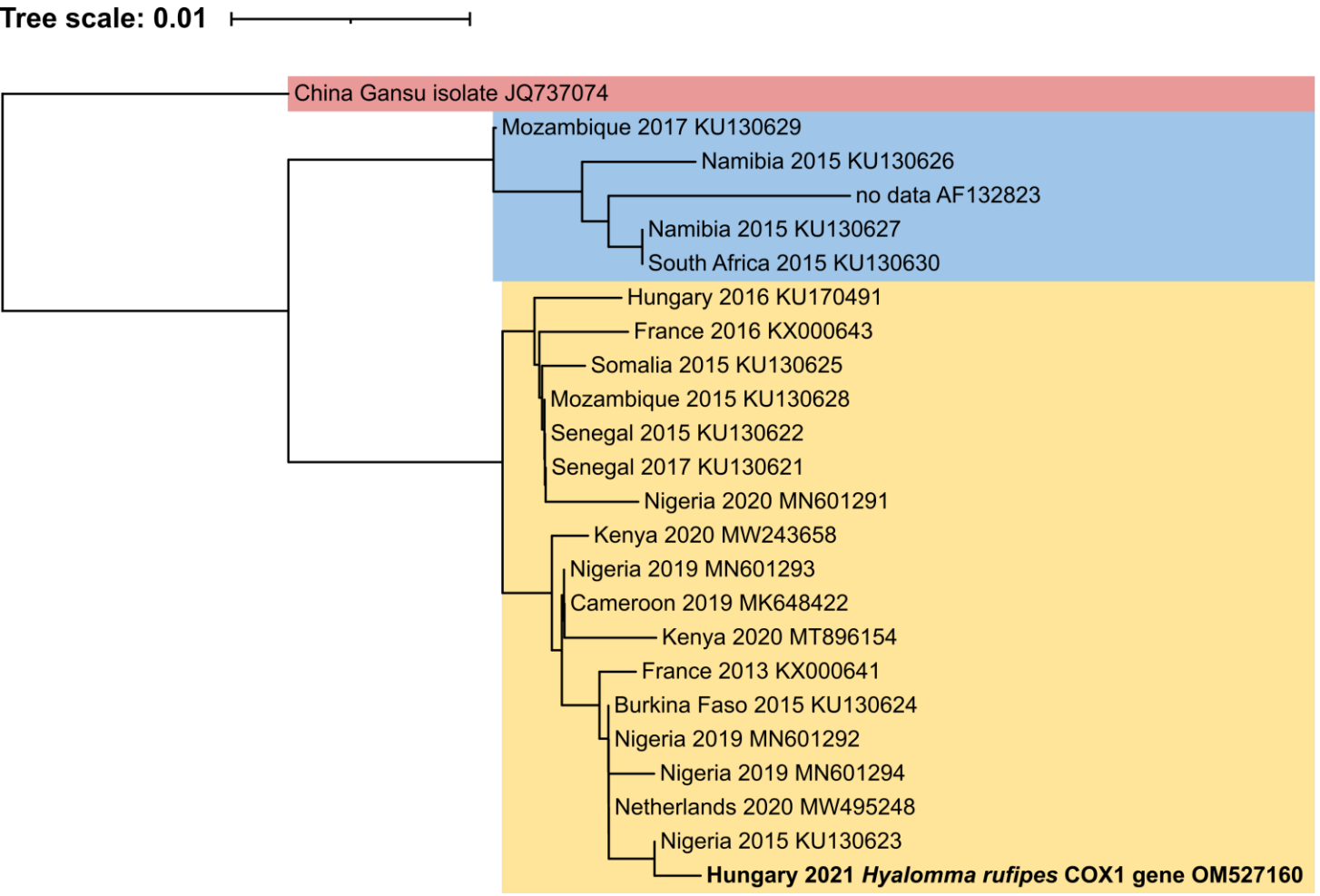
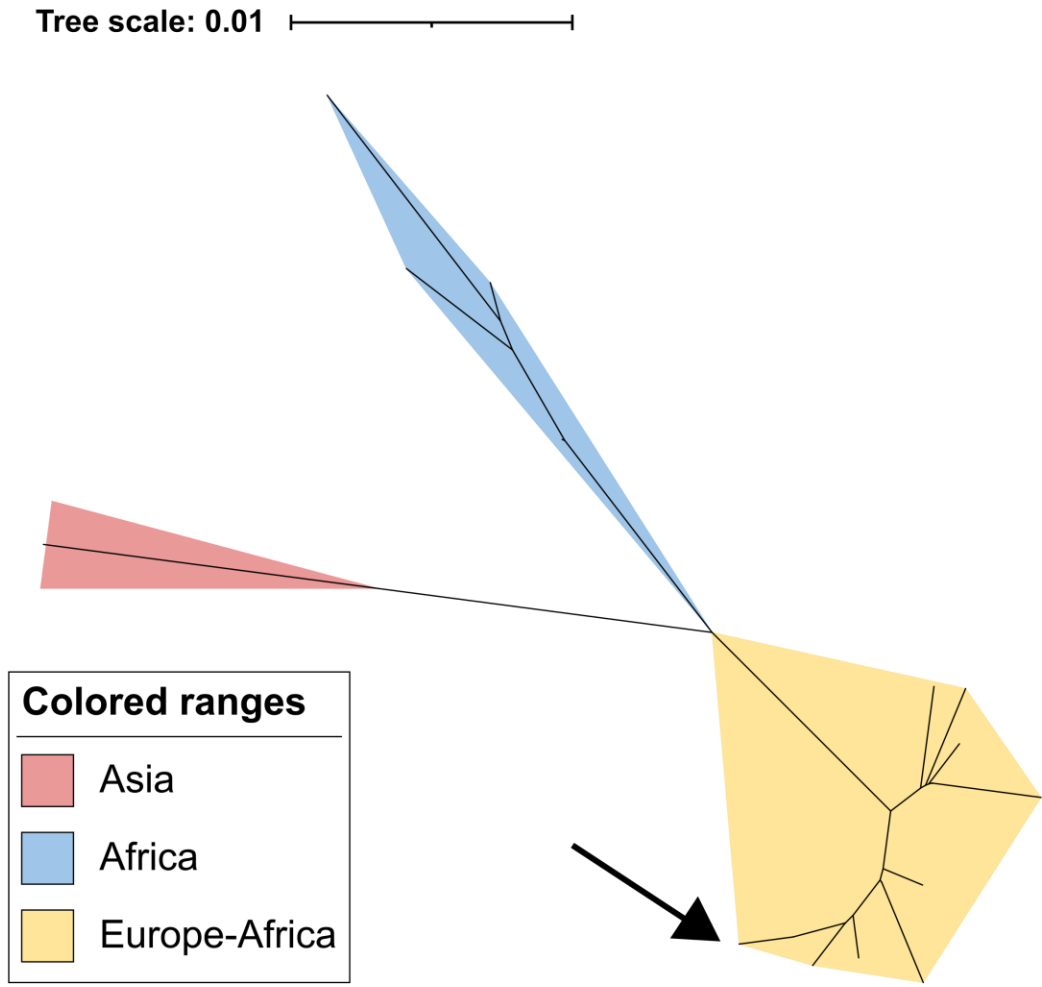
EUR
51
CM
34
0619
61374
MERRELL

SZAMOCA
ÉS MESTERSÉGES SZÍNEZÉKET

TARTÓSÍTÓSZERT ÉS

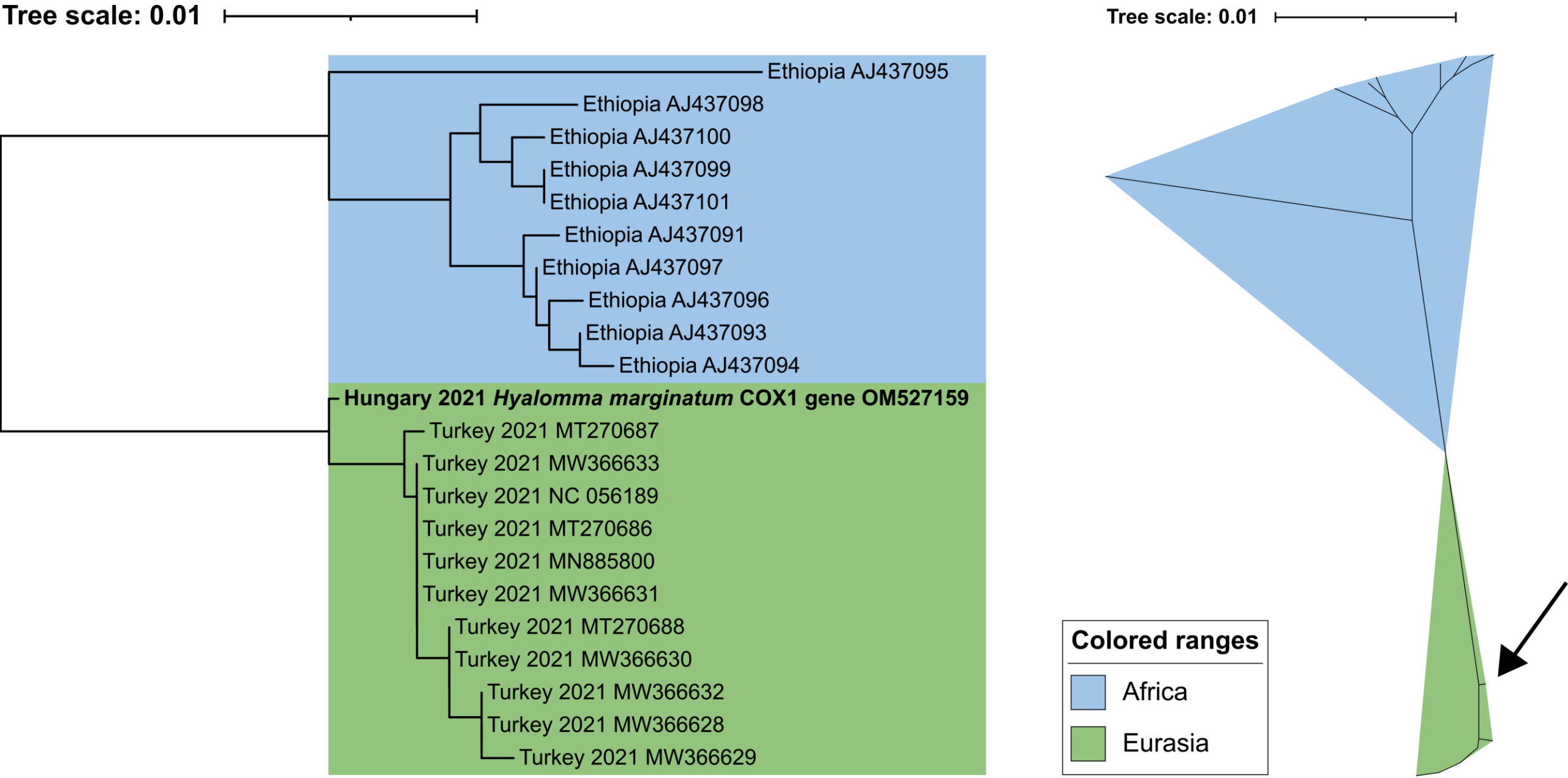
Hyalomma rufipes
adult from a cattle



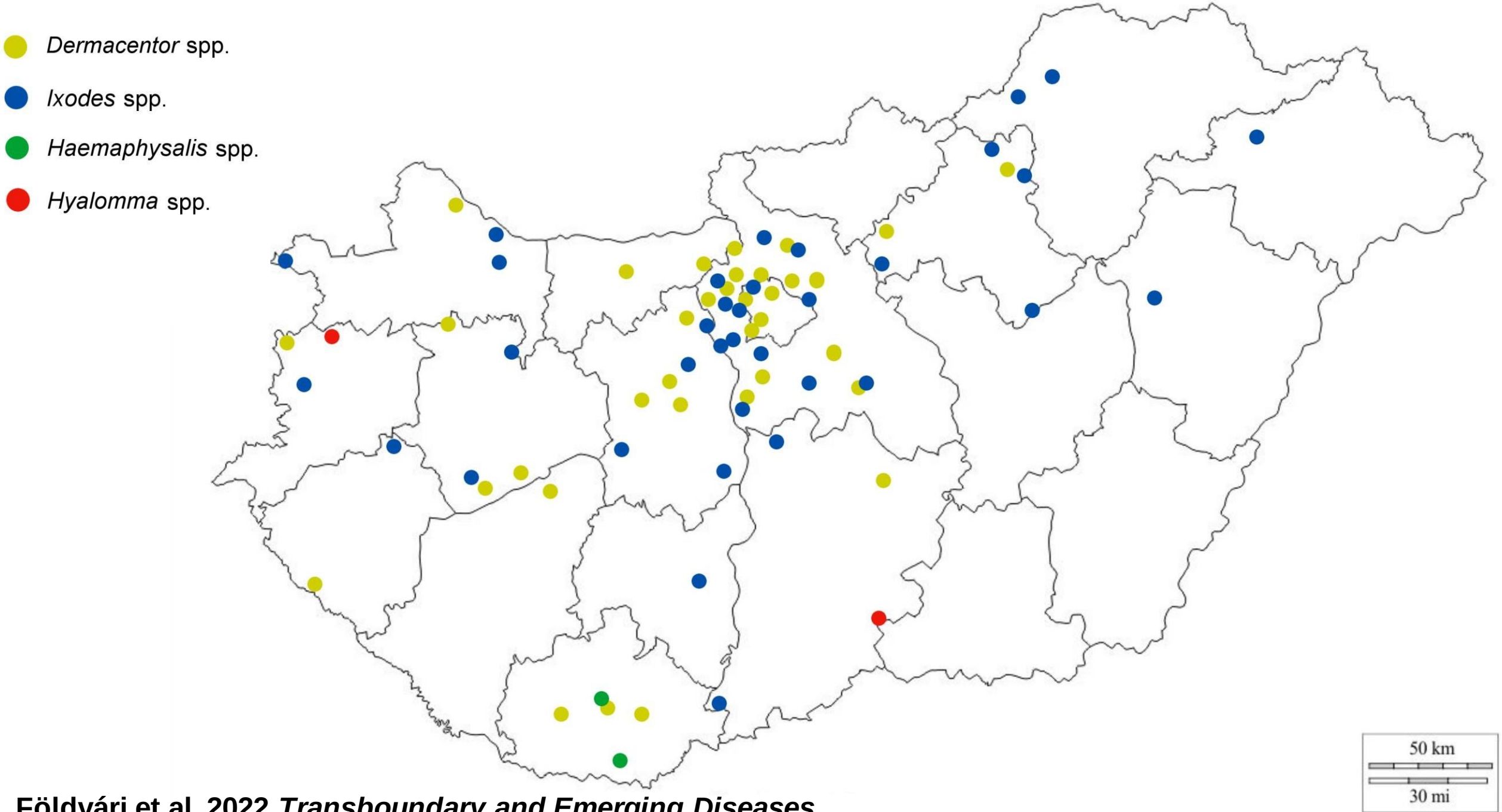


Földvári et al. 2022 *Transboundary and Emerging Diseases*

Hyalomma marginatum
adult from a dog



Földvári et al. 2022 *Transboundary and Emerging Diseases*



Földvári et al. 2022 *Transboundary and Emerging Diseases*

1 CCHFV isolation in 1972 from two *I. ricinus*

2 CCHFV seropositive cattle and sheep in 1973

3 CCHFV antibody in 17 human sera in 1976

4 Human CCHF infection, unknown source 2004

5 CCHFV seropositive brown hares 2008-2009

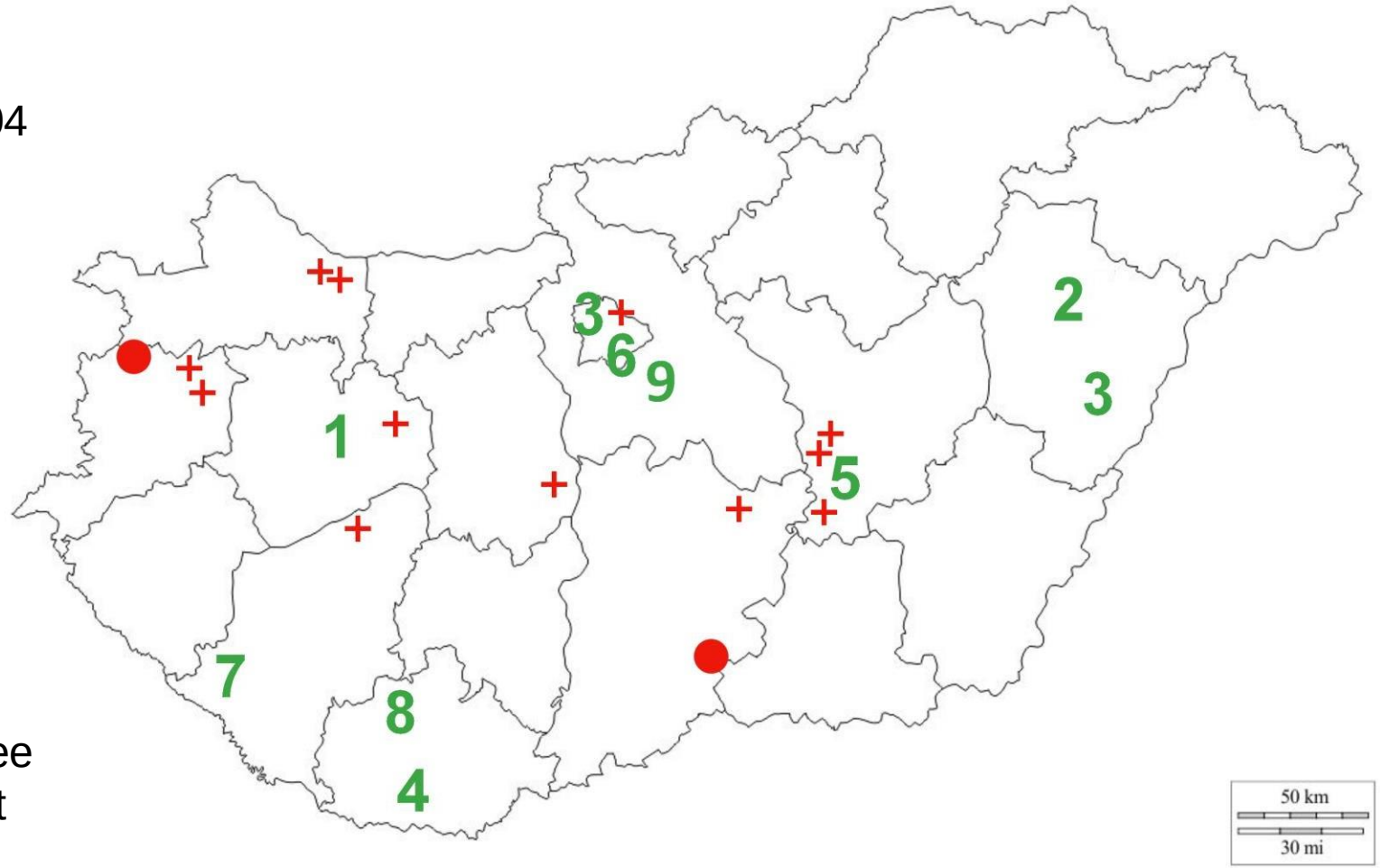
6 An engorged *Hy. marginatum* nymph on a hedgehog in 2009

7 Two *Hy. rufipes* males on cows in 2011

8 CCHFV seropositive wild rodents 2011-2013

9 Three *Hy. marginatum* (two larvae and a nymph) from a European robin in 2011 and three *Hy. rufipes* nymphs from a common whitethroat (*Sylvia communis*) in 2014

Red crosses indicate origin of CCHFV seropositive blood donors collected between 2008-2017



Földvári et al. 2022 *Transboundary and Emerging Diseases*

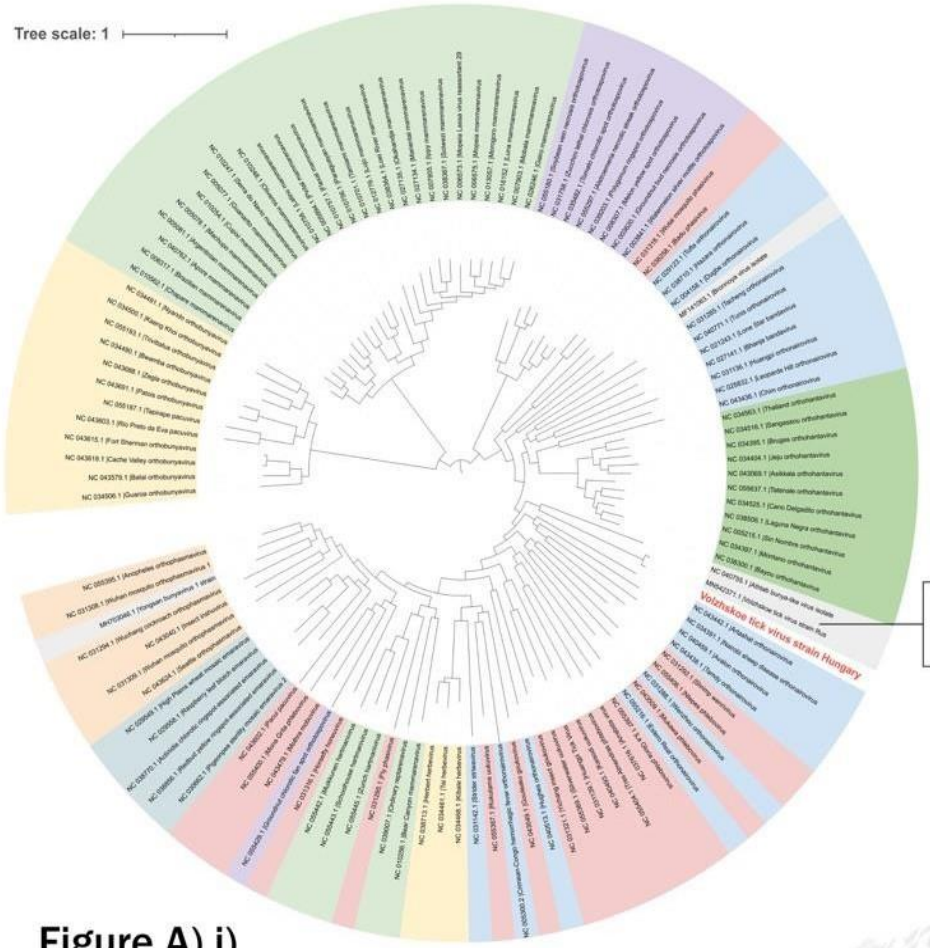
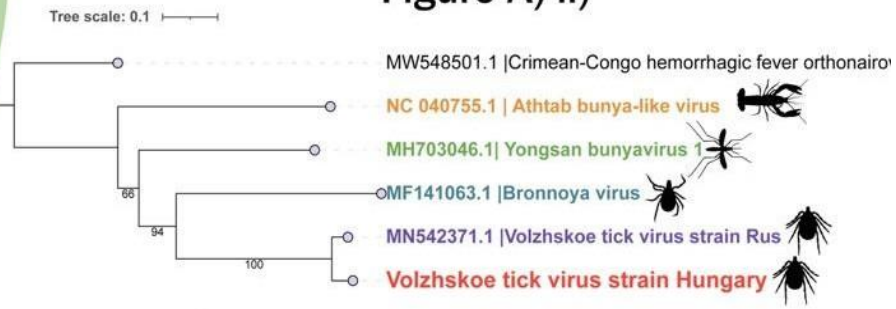
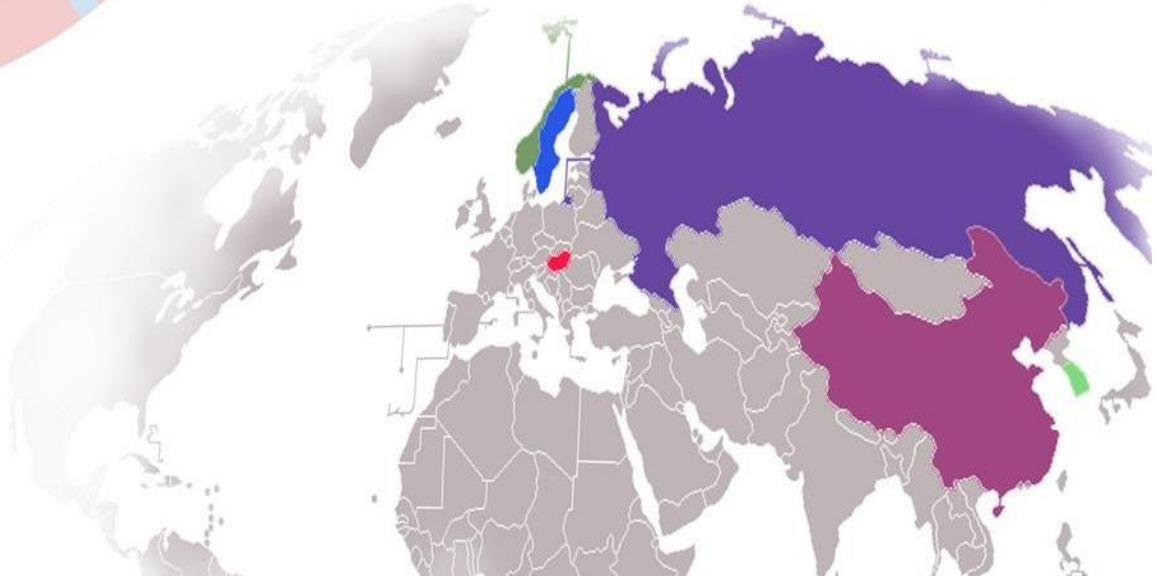


Figure A) i)

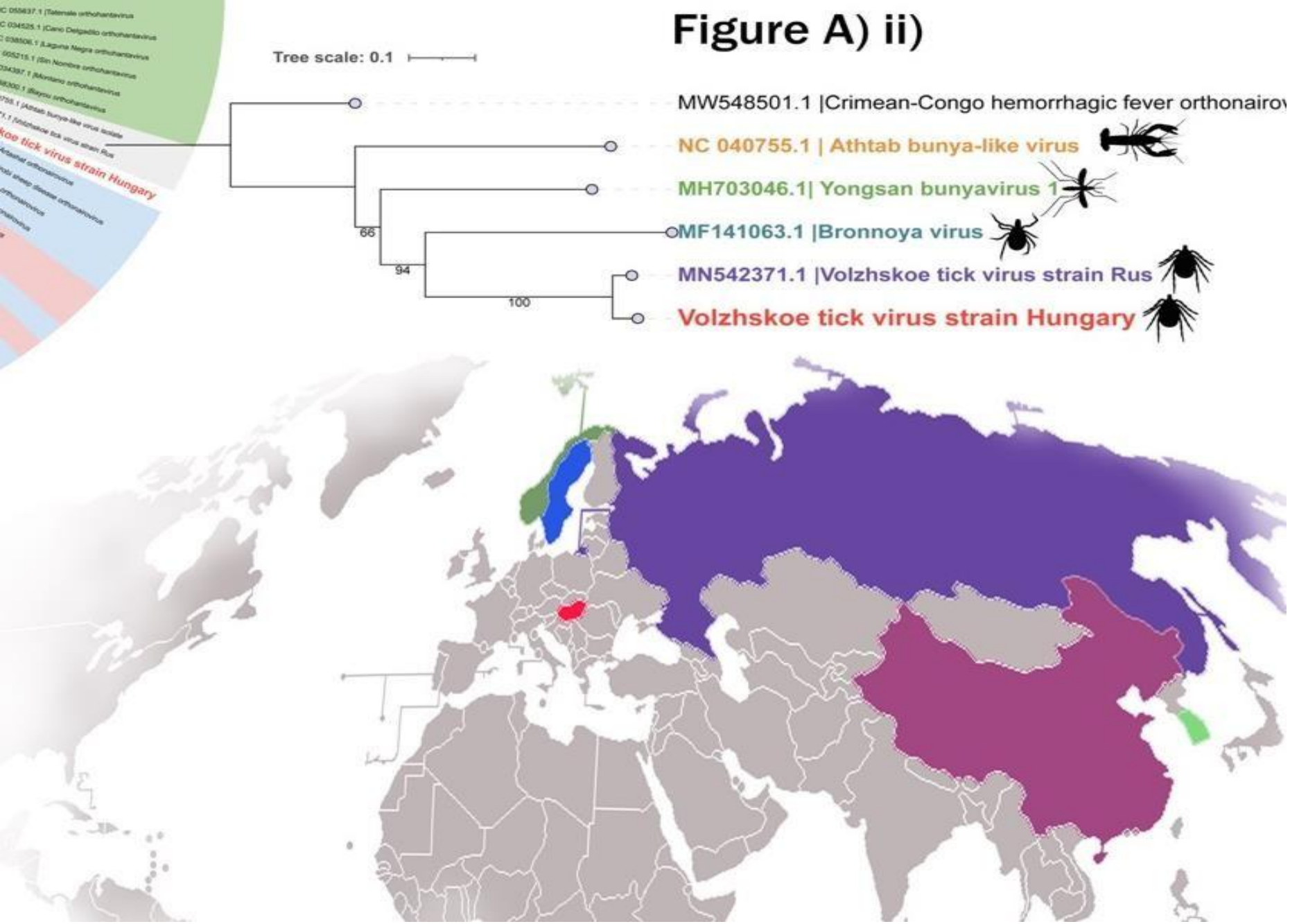
Figure A) ii)





Földvári et al. *in prep.*

Figure A) ii)



Földvári et al. *in prep.*

- ✓ Over 31.000 site visits in 7 months
- ✓ Several hundred photos and 137 ticks submitted
- ✓ 6 tick species, *2 Hyalomma adults (both negative for CCHFV RT qPCR)*
- ✓ Broad citizen involvement
- ✓ **Documentation of Volzhskoe virus with metagenomics**
- ✓ **2022: 6 *Hyalomma* so far**

Pathogen diversity
Taxonomic inventories
Archival specimens

Risk
Phylogenetic triage,
Phylogenetic Assessment,
Population Genetics,
Ecological Niche Modelling

Disrupt transmission
Limit exposure,
Limit chances
for introduction

Transmission dynamics,
Habitat interface,
Reservoir hosts
Reassessing Data Using S,P
Modelling Platform

Bajer-Molnár et al. *submitted*

Transformative change needed

- Filling critical knowledge gaps („Pathogen X")
- Intergovernmental panel for pandemic preparedness (like IPCC, IPBES)
- Economic incentives
- Stopping habitat destruction
- Reducing wildlife trade
- Broad societal involvement


CHANGE

TOPIC 4 WORKSHOP PART II – DAY 1

----------lunch on the boat----------

14:30 – 14:50	**Brief re-cap** - ‘Project Journey’ mapping of the enabling factors
14:50 – 15:10	**Building a national roadmap** – How should it be structured?
15:10 – 15:40	**Break-out discussions**
15:40 – 15:50	**Group summary discussion**

European Commission

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European Commission

Workshop Part I
Vienna

June 7th - 8th 2022

Legal & Policy Frameworks

Internal Policies & Culture

Capacity Building & Networks

Supporting (Data) Infrastructure

Societal Dialogue

FUNDING

European Commission

ENABLING FACTOR

Infrastructure

Legal / Policy

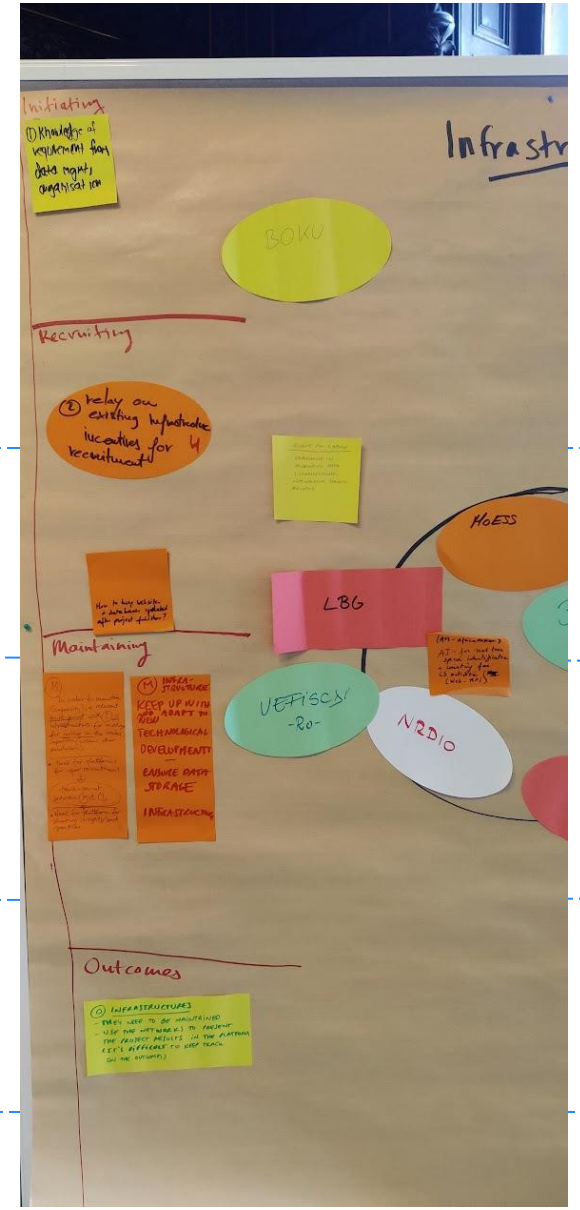
PROJECT LIFECYCLE

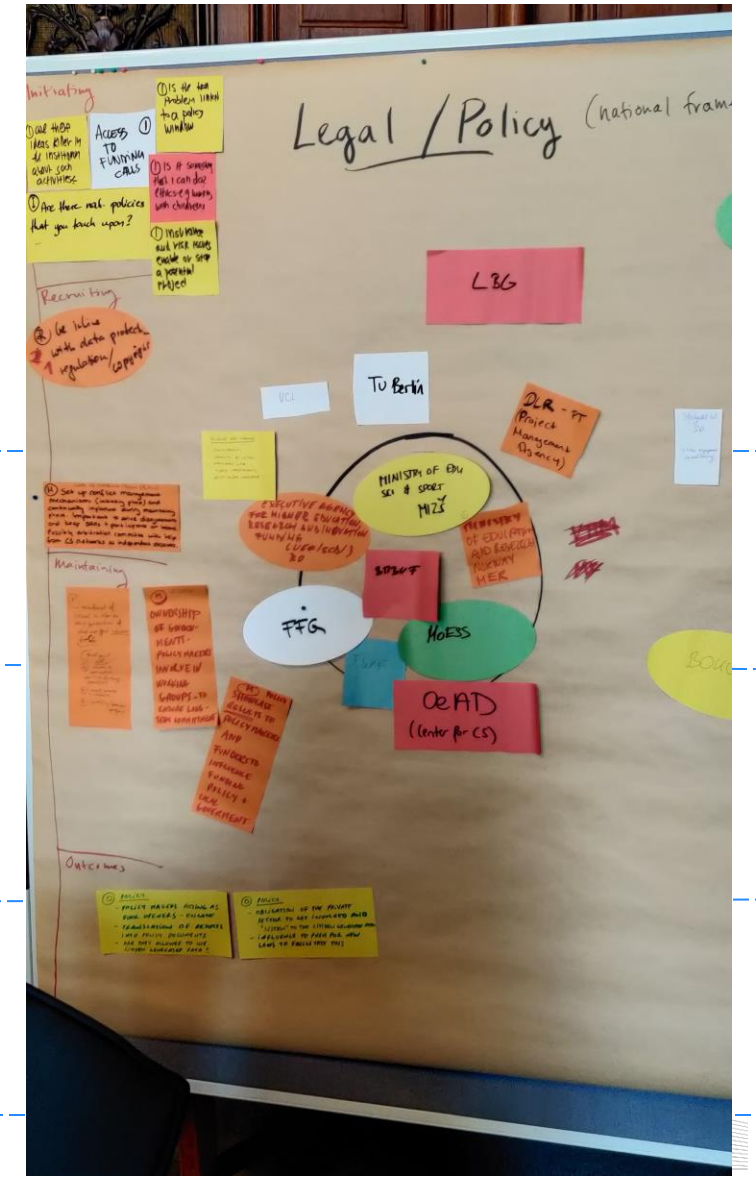
Initiating

Recruiting

Maintaining

Outcomes





ENABLING FACTOR

Institutional Policy / Culture

Capacity Building & Networks

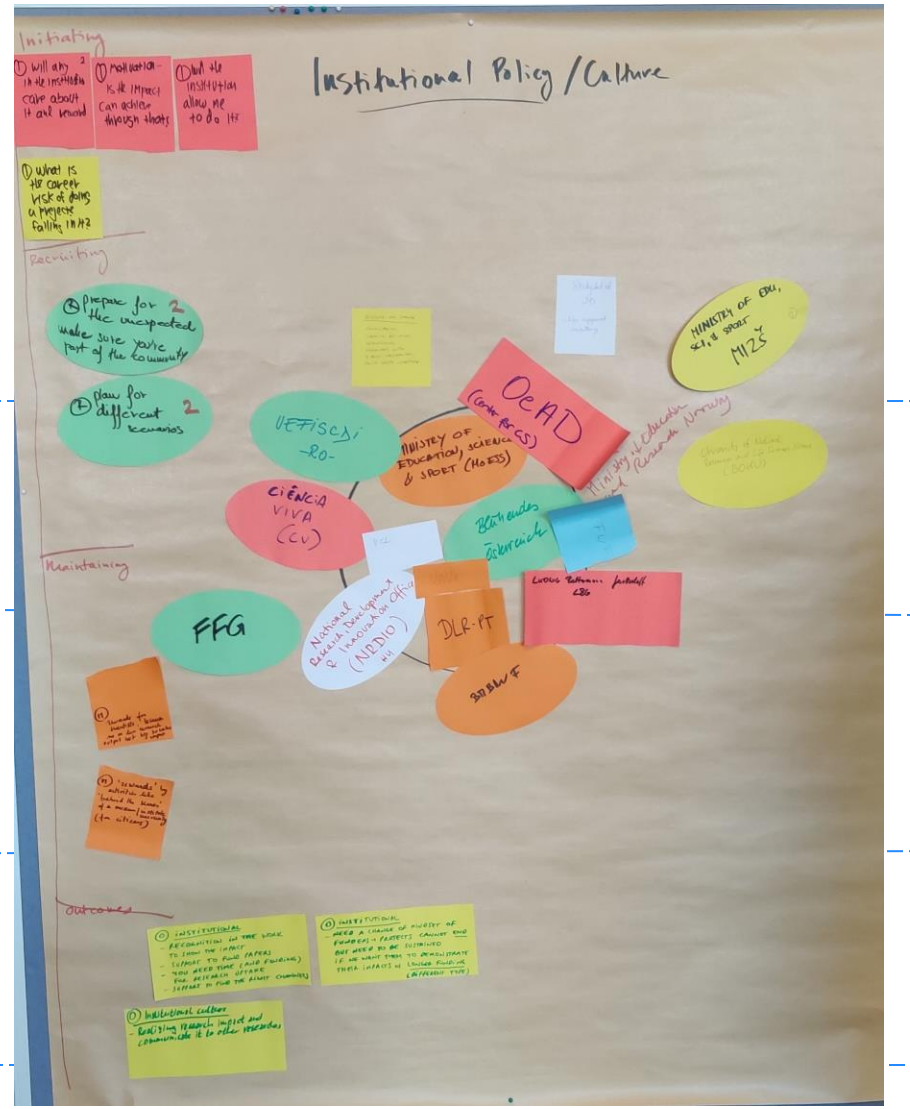
PROJECT LIFECYCLE

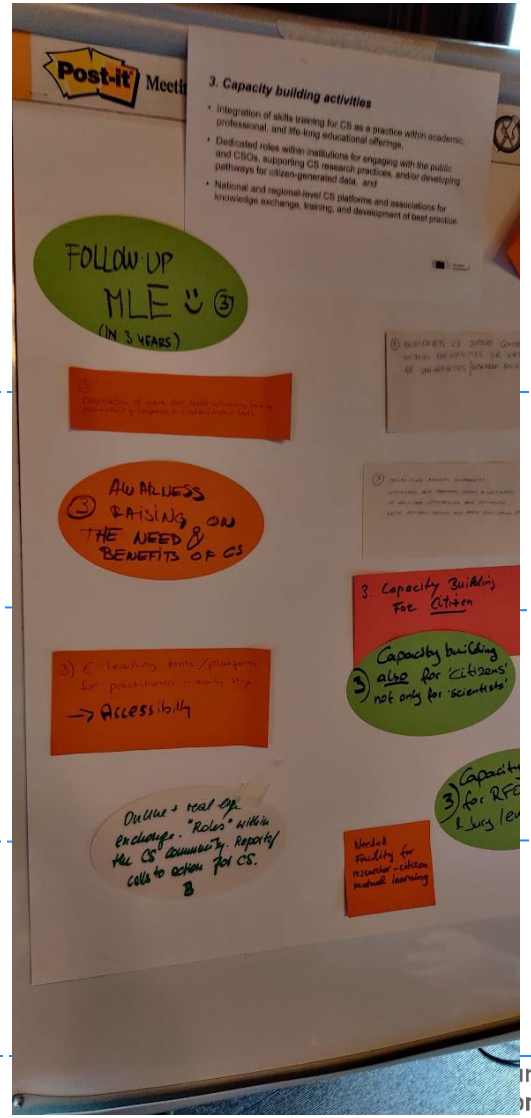
Initiating

Recruiting

Maintaining

Outcomes





ENABLING FACTOR

Societal Dialogue

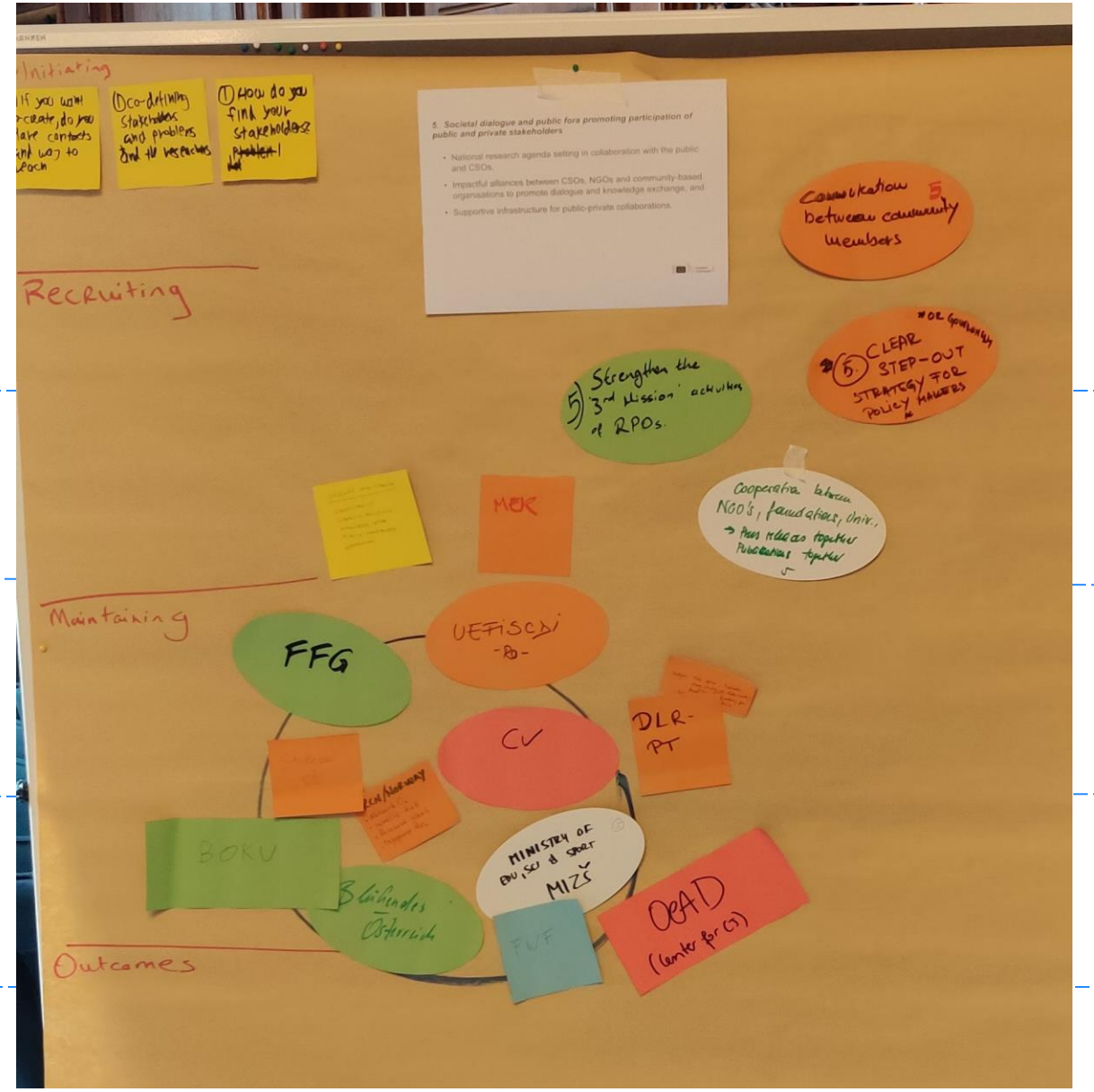
PROJECT LIFECYCLE

Initiating

Recruiting

Maintaining

Outcomes



European Commission

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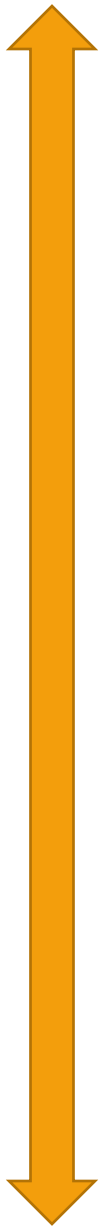
European Commission

UNESCO Priority Areas

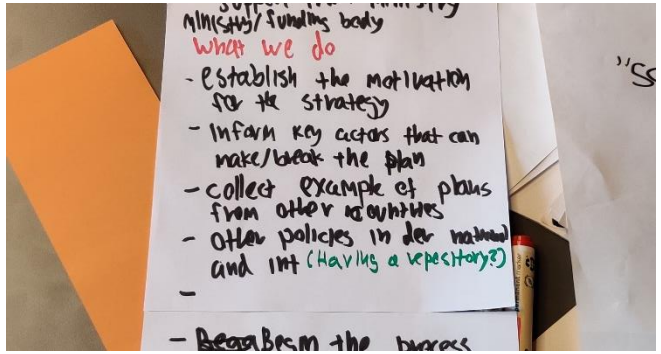
1. Promote a **common understanding** of CS benefits and challenges, and range of diverse paths
2. Develop an enabling **policy environment** for CS
3. Invest in CS **infrastructures** and services.
4. Invest in **human resources, training, education**, and **capacity building**
5. Foster a **culture** of Open Science & CS with aligned incentives
6. Promote **innovative CS approaches** at different stages of the scientific process, and
7. Promote international and multi-stakeholder **cooperation and knowledge exchange**



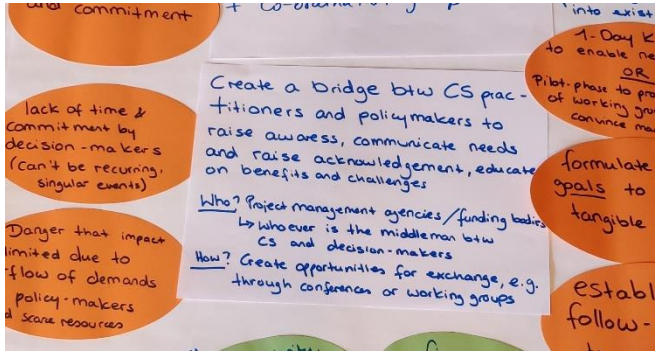
…our vertical axis ? ….

European Commission

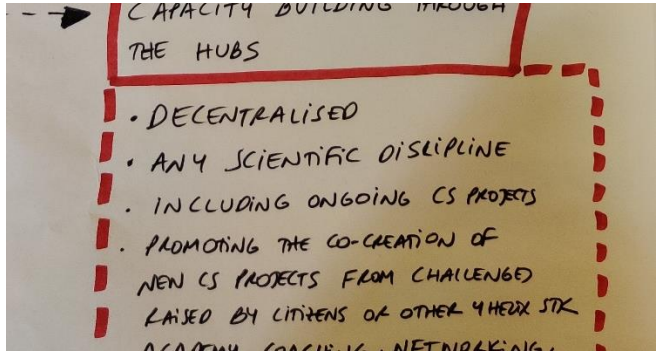
The Workshop I Action Lines



RFO POLICY: Create a **Working Group** with the Research Funding Organisations, the Ministry & CS practitioners: (1) set funding strategy, (2) knowledge exchange



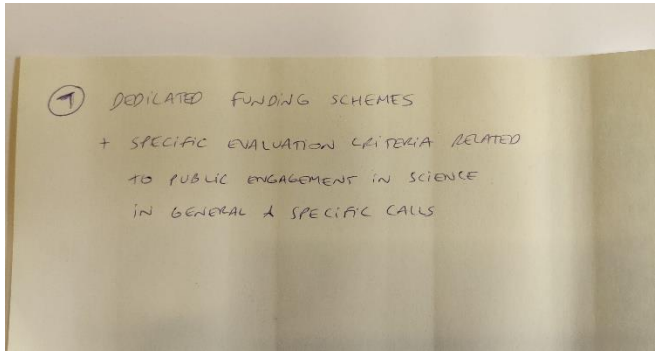
RFO POLICY: Create a **dedicated function** within the RFO to (1) bring different internal departments together for knowledge exchange and (2) interface with CS practice



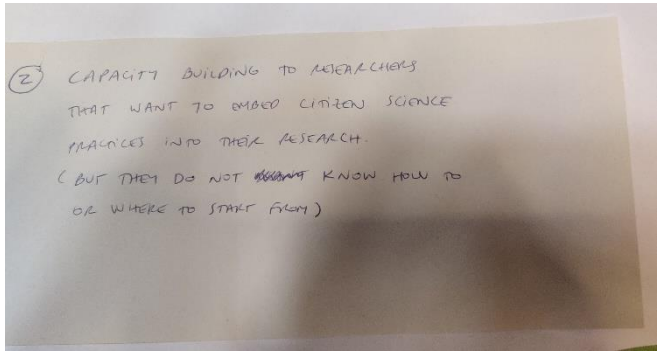
CAPACITY BUILDING: Create a **Citizen Science Hubs network** that supports the CS practitioners community, based in Universities, and collaborating with RFOs and Ministries

European Commission

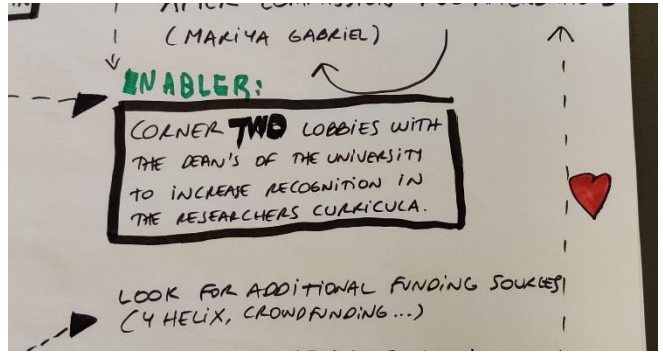
The Workshop I Action Lines



RFO POLICY: Create **dedicated funding** schemes & CFPs for Citizen Science, with specific evaluation criteria related to public engagement in science

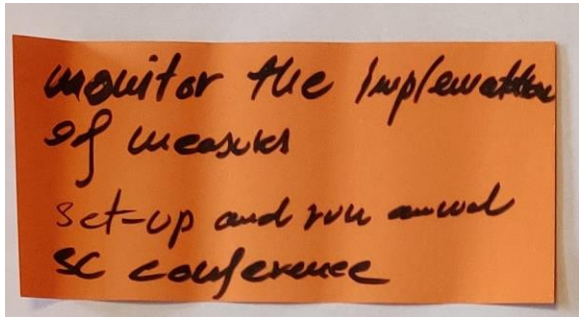


CAPACITY BUILDING: Create a **dedicated knowledge hub** within the research performing organisation so that colleagues interested in CS practices can be supported

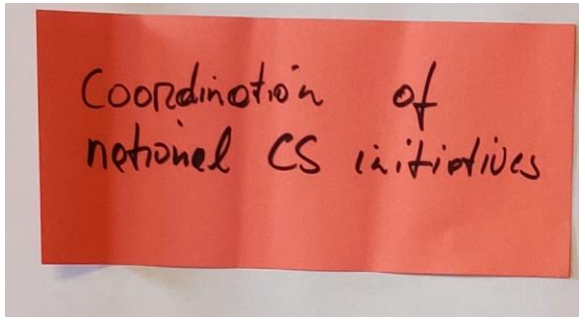


CAPACITY BUILDING: Create an **education lobby network** within and between Universities at the Deans level to embed CS within the Curiccula

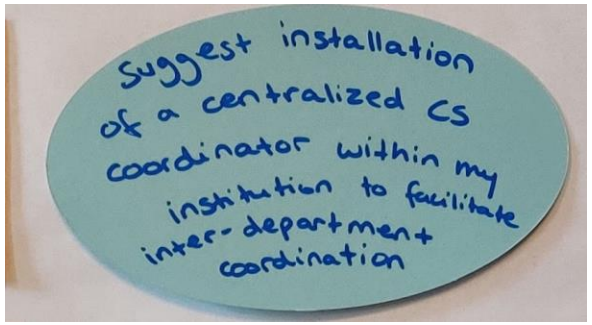
European Commission



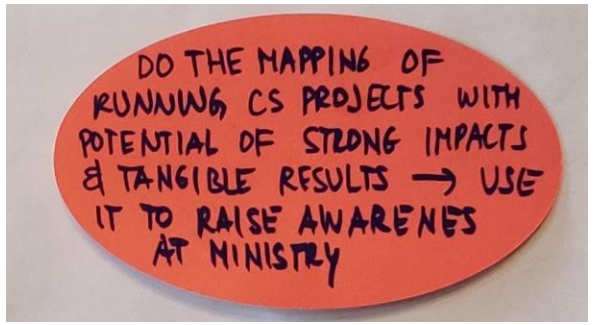
Set up and run an annual Citizen Science Conference



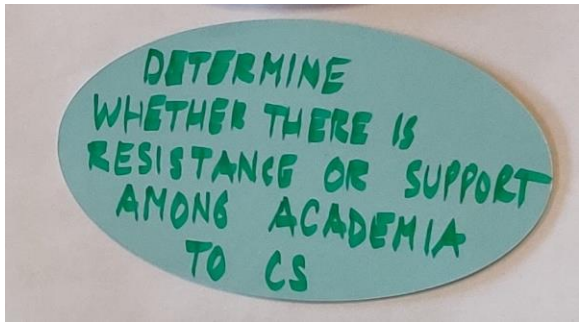
Establish a Coordination Centre for National CS Initiatives



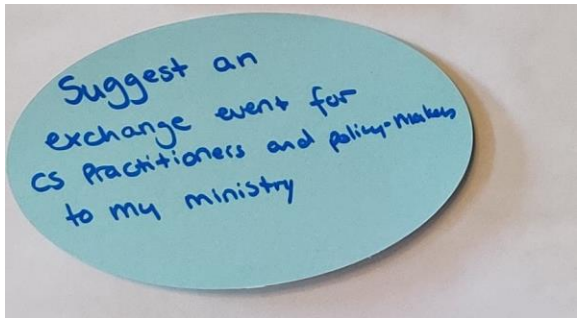
Embed a centralised CS Coordinator within my institution to facilitate inter-department coordination



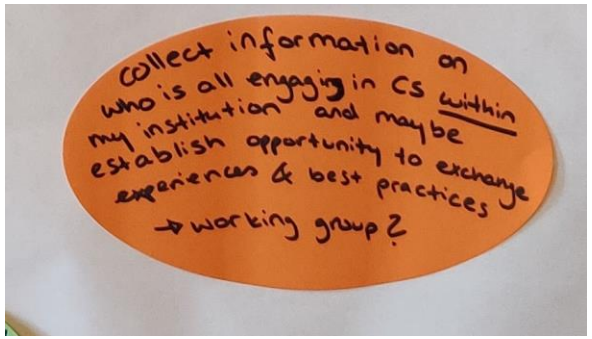
Create a Landscape Report of current CS projects, describe their potential impacts and results, & share these to raise awareness



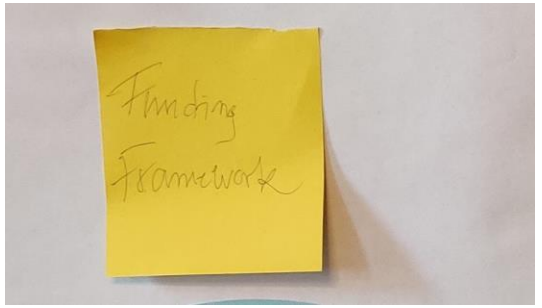
Determine whether there is resistance or support among Academia



Establish a knowledge exchange event between CS Practitioners and Policy Makers



Collect information on who is engaging in CS within my institution and form a WG



Develop a Funding Framework

'P3M3 Maturity Model'

(P3M3 = Portfolio, Programme & Project Management Maturity Model)

Level 1 = Awareness

Activities are started to set a strategic ambition towards a point in the future.

Tools include gap analysis and Balanced Scorecard

Stakeholders are identified

There is a shared vision

Level 2 = Repeatable

The strategic intentions have been defined and set, and there is pathway defined to monitor these and iterate.

Governance agreements are made

Stakeholders are engaged

Standards are set

Level 3 = Defined

An Action Plan has been defined, with specific tasks and task-owners.

Stakeholders are empowered and enabled

Supporting resources are identified

KSFs are defined

Level 4 = Managed

The Action Plan is activated, supported, and monitored. Operational structures are in place.

Capacity is embedded

Funding is secured

Monitoring networks are active

Level 5 = Optimised

Interim outcomes are assessed, plans are iteratively developed and updated. There is attention to quality and the capacity to achieve the strategy.

Progress is monitored

New stakeholders, actors, capacity and funding were needed

…our horizontal axis ? ….

European Commission

AGENDA DAY 2

Time	Description
08.30	Meeting up at Hotel President to go the ELTE Campus together
08.30-09.00	Go together to the ELTE Campus, Science Faculty
09.00-09.30	Registration, coffee/tea
09.30-09.40	Welcome from the Hosts (5 minutes) Welcome from the Chair and presentation of the agenda (Alan Irwin, 5 minutes)
09.40-10.00	Funding Open Science and Citizen Science in Hungary. Presentation by dr. István Szabó, Vice President of NRDIO (20 minutes)
10.00-11.00	Presentation on ELTE family dog project (with participation of citizens and their dogs)
11.00-12.00	Discussion, Feedback and Analysis on "Sustaining Citizen Science" by Margaret Gold (60 minutes)
12.00-13.00	Lunch offered by ELTE University and exhibition viewing (posters on Hungarian CS projects)
13.00-14.00	Discussion, Feedback and Analysis on "Sustaining Citizen Science" by Margaret Gold (60 minutes)
14.00-14.20	Coffee break
14.20-14.50	Discussion, Feedback and Analysis on "Sustaining Citizen Science" by Margaret Gold (30 minutes)
14.50-15.00	Closing and next meeting (Alan Irwin, 10 minutes)

European Commission

National Research, development and Innovation Office
Hungary

FUNDING OPEN SCIENCE AND CITIZEN SCIENCE IN HUNGARY

István SZABÓ PhD

vice president for science and international affairs

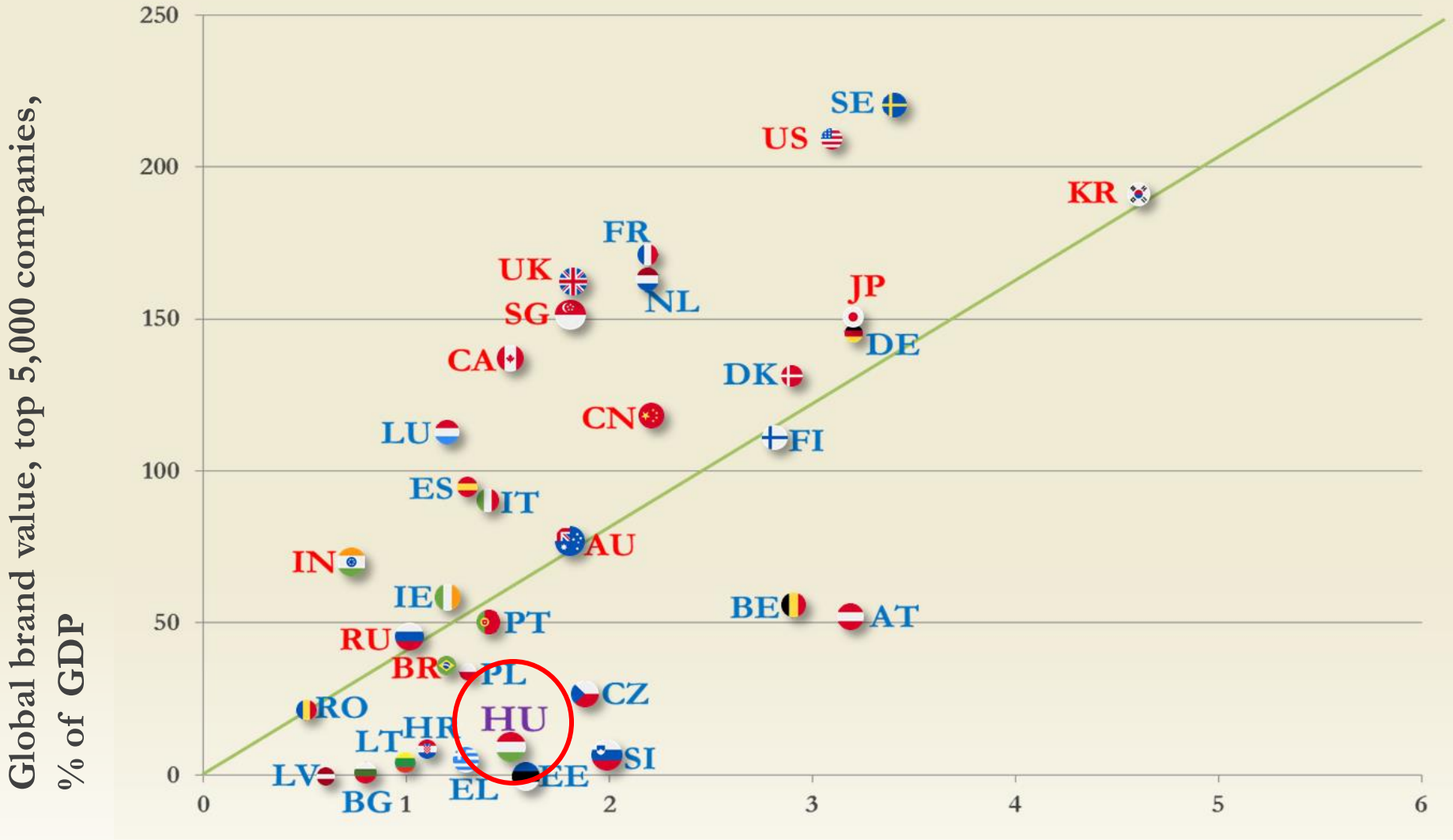
National Research, Development and Innovation Office

1 RDI IN HUNGARY

CURRENT STATE OF PLAY

THE EUROPEAN PARADOX

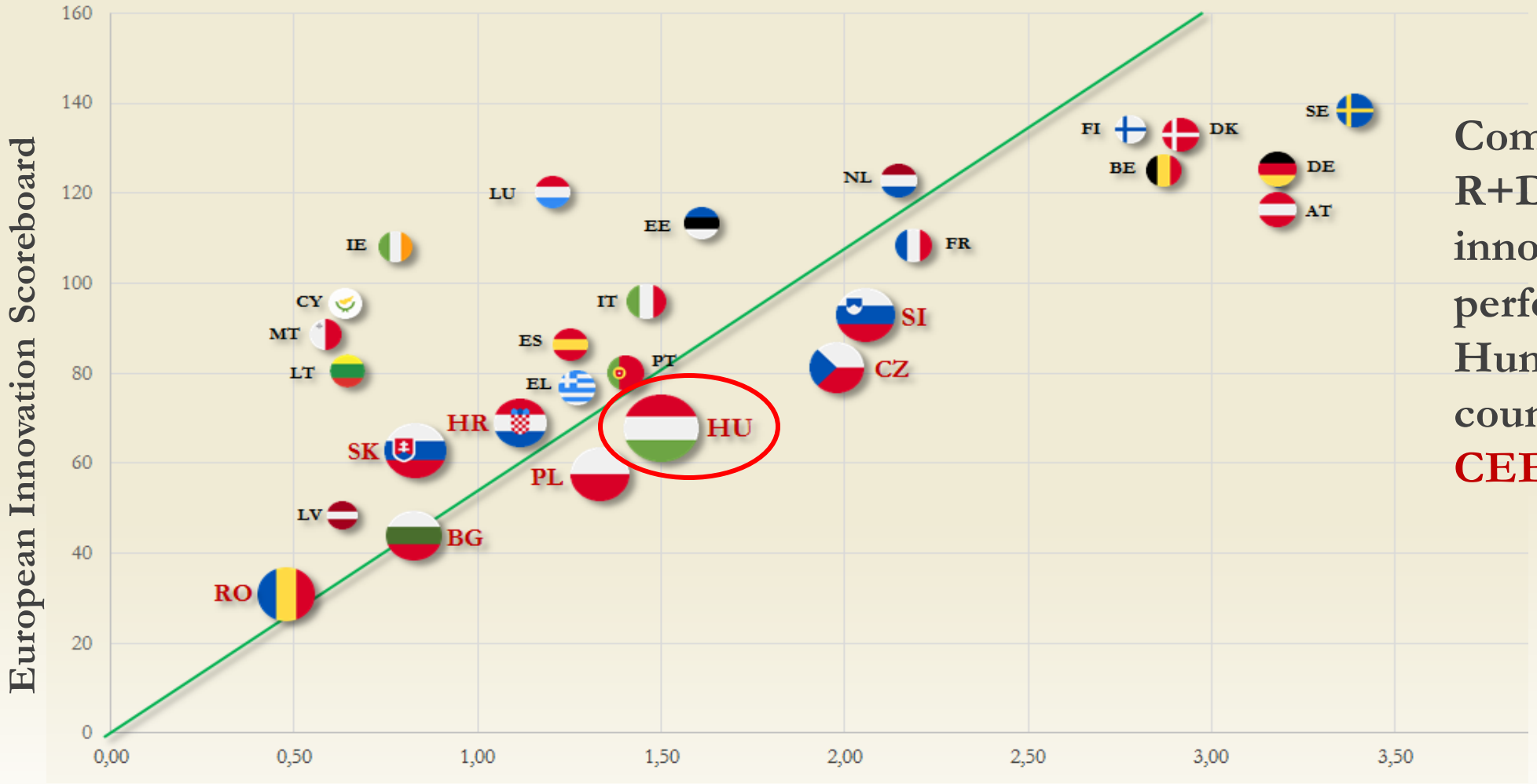
National Research, Development and Innovation Office
Hungary



The main competitors of Europe are strong in innovation and have a good position in global competition, while most European countries perform better in R&D.

R&D AND INNOVATION PERFORMANCE OF EU MEMBERS

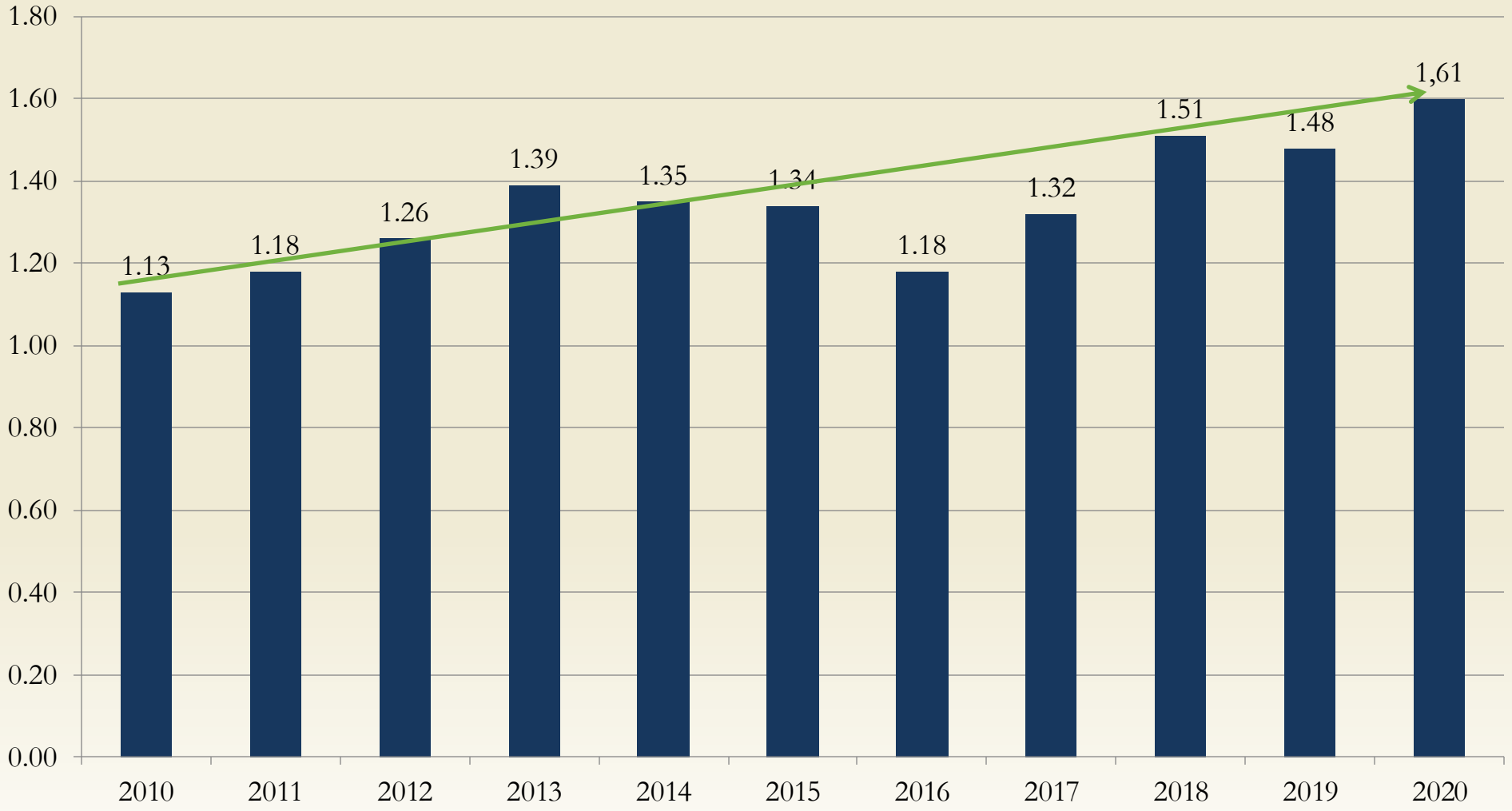
National Research, Development and Innovation Office
Hungary



Compared to their R+D output, the innovation performance of Hungary and other countries in the **CEE region** is weak.

HUNGARY'S GERD/GDP RATIO (%)

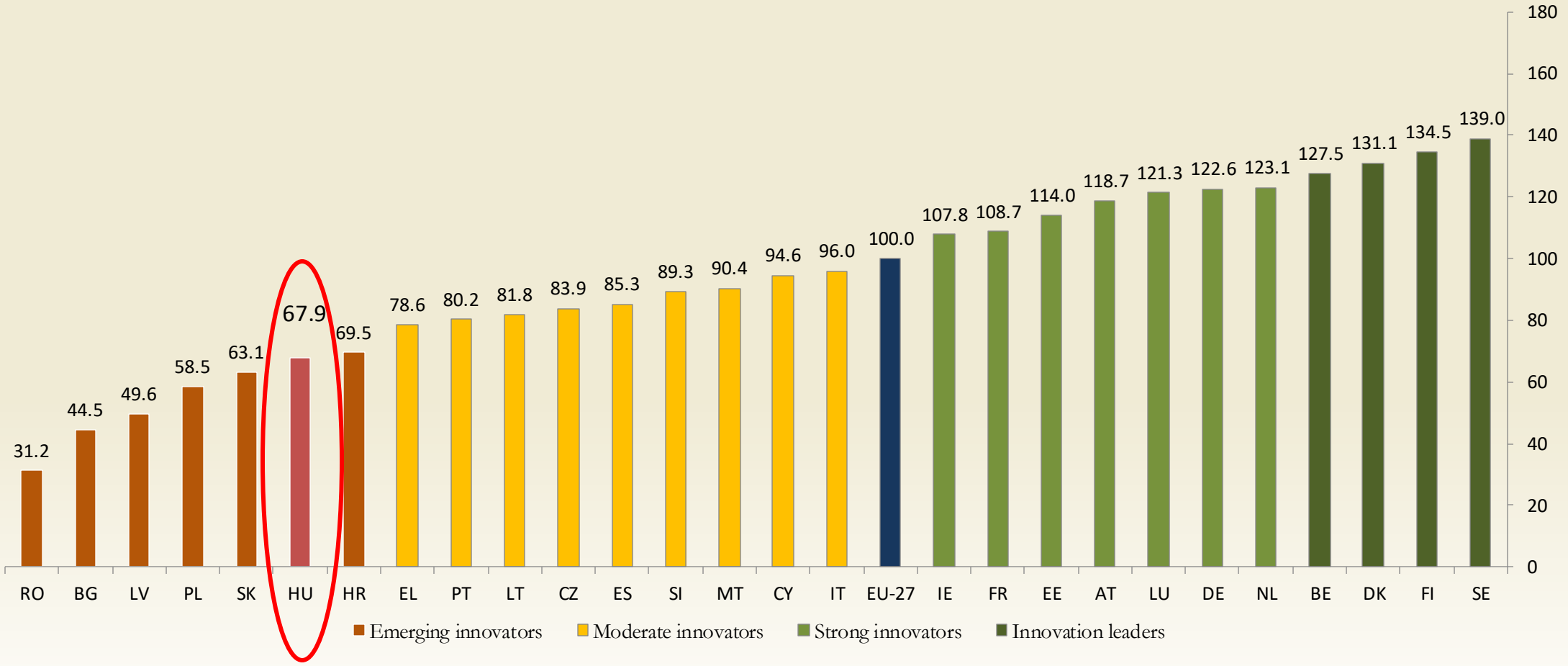
National Research, development and Innovation Office
Hungary



Strategic aim: 3% GERD/GDP in 2030

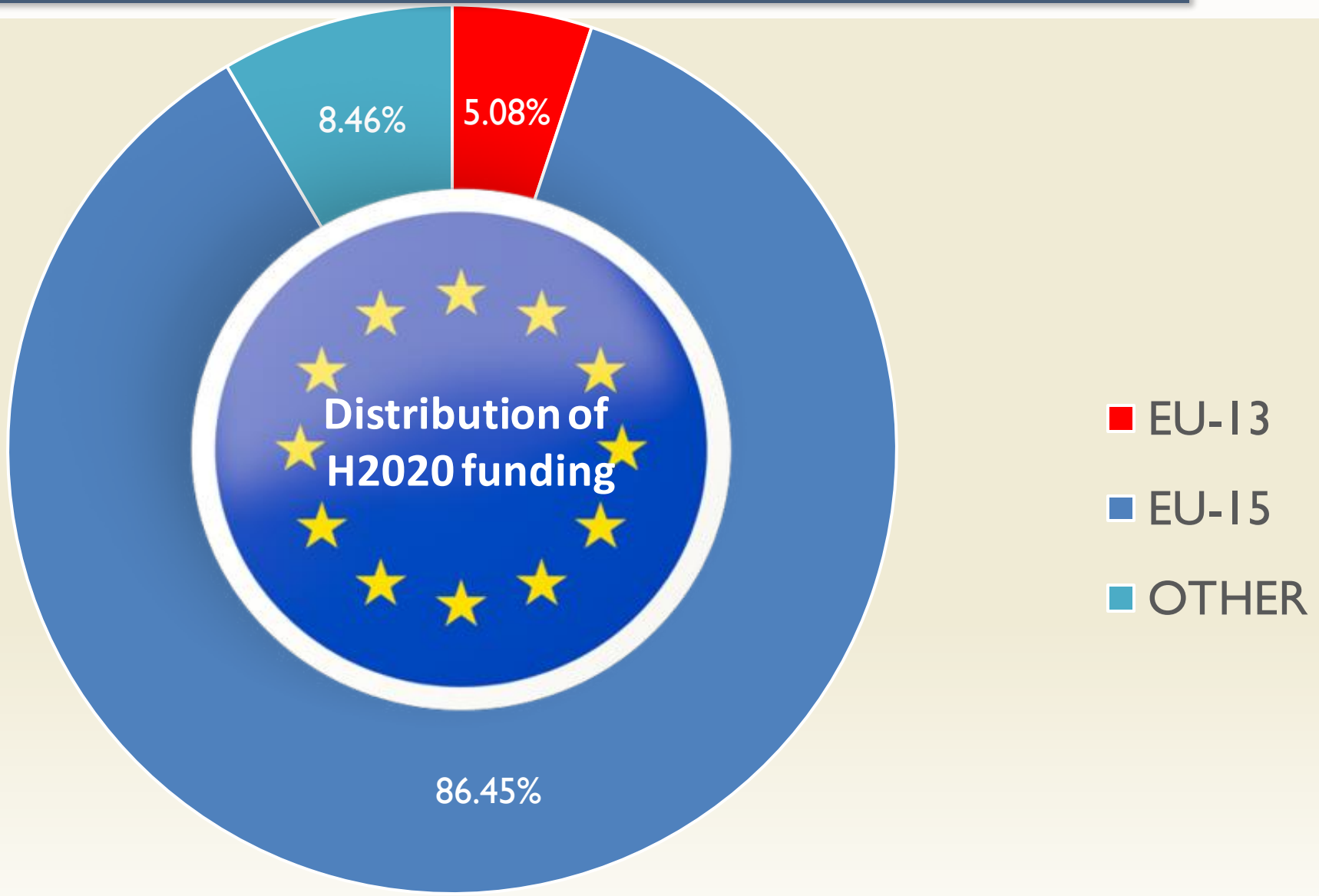
RANKING OF EU MEMBERS - EUROPEAN INNOVATION SCOREBOARD, 2021

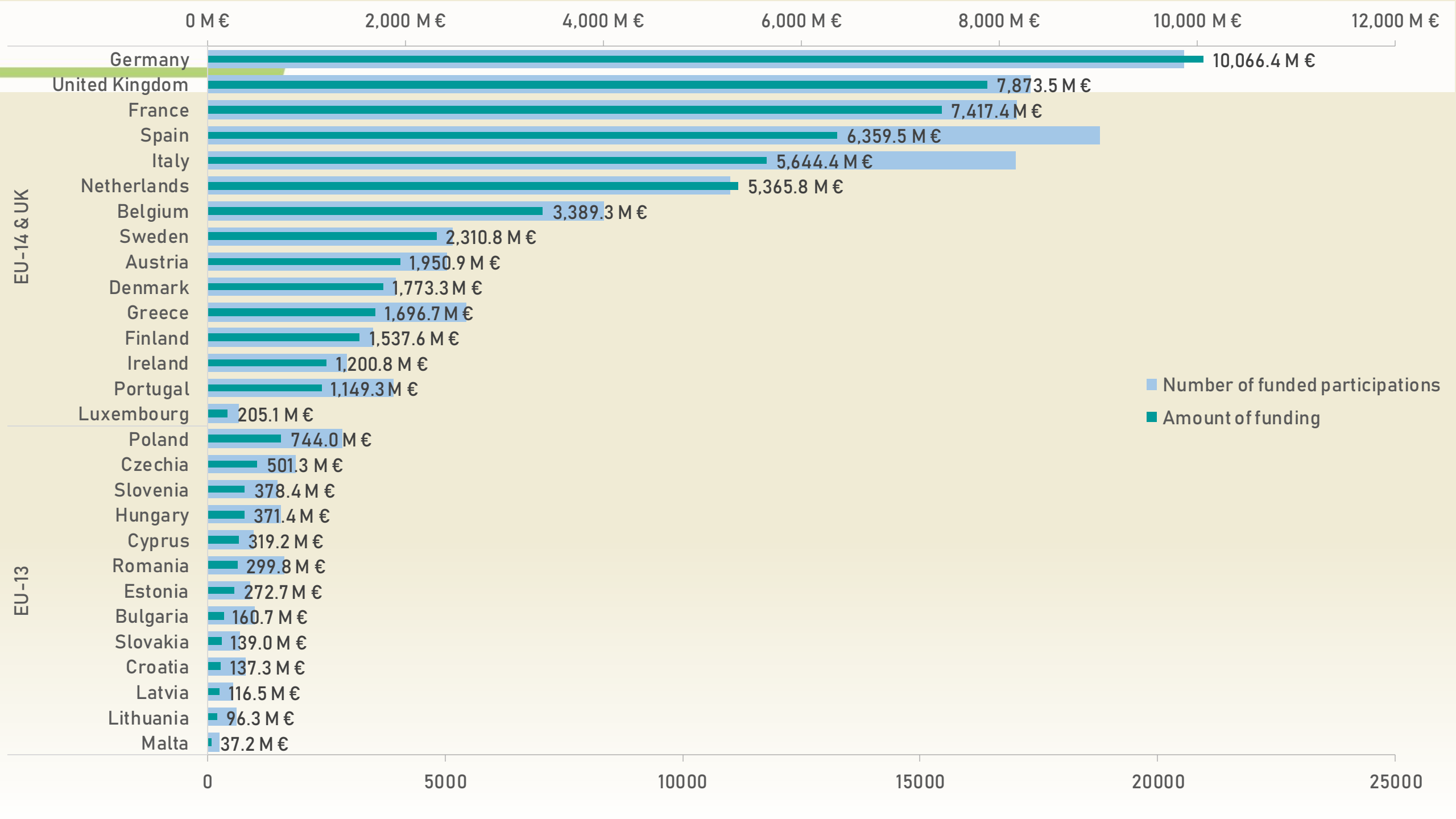
National Research, Development and Innovation Office
Hungary



PERFORMANCE GAP

Performance gap between EU15 and EU13 countries in Horizon 2020




0 M €
2,000 M €
4,000 M €
6,000 M €
8,000 M €
10,000 M €
12,000 M €
EU-14 & UK
Germany
10,066.4 M €
United Kingdom
7,873.5 M €
France
7,417.4 M €
Spain
6,359.5 M €
Italy
5,644.4 M €
Netherlands
5,365.8 M €
Belgium
3,389.3 M €
Sweden
2,310.8 M €
Austria
1,950.9 M €
Denmark
1,773.3 M €
Greece
1,696.7 M €
Finland
1,537.6 M €
Ireland
1,200.8 M €
Portugal
1,149.3 M €
Luxembourg
205.1 M €
EU-13
Poland
744.0 M €
Czechia
501.3 M €
Slovenia
378.4 M €
Hungary
371.4 M €
Cyprus
319.2 M €
Romania
299.8 M €
Estonia
272.7 M €
Bulgaria
160.7 M €
Slovakia
139.0 M €
Croatia
137.3 M €
Latvia
116.5 M €
Lithuania
96.3 M €
Malta
37.2 M €
Number of funded participations
Amount of funding
0
5000
10000
15000
20000
25000

2 RDI PROGRAMME FRAMEWORK IN HUNGARY

CHALLENGES & ANSWERS

SMART SPECIALIZATION STRATEGY 2021-2027 AND SECTORAL STRATEGIES

NATIONAL RESEARCH, DEVELOPMENT AND INNOVATION OFFICE HUNGARY

National Digitalization Strategy

- Digital skills development of SMEs
- Development of integration of digital technologies in the whole economy
- Development of the ICT sector as a priority

National RDI Strategy

1. Knowledge production
2. Knowledge transfer
3. Knowledge exploitation

National SME Strategy

1. Strengthening the value-creating capacity of companies of high growth potential
2. Provide a predictable framework for the entire SME sector

Special Ministerial Order: NRDI Office is responsible for planning and implementation of S3

S3 PRIORITIES

Agriculture, food industry

Health

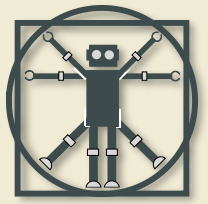
Digital economy

Creative indsutry

Resource-efficient economy

Energy, climate

Services



Cutting-edge technologies

Public sector and university innovation

Training, education

Gov. decree 428/2021. (VII. 2.) on National Smart Specialization Strategy 2021-2027

RENEWED FINANCING SCHEME OF NRDI FUND 2021

NATIONAL RESEARCH, DEVELOPMENT AND INNOVATION OFFICE HUNGARY

Individual excellence	Thematic programmes	Business innovation
Horizontal programmes	National security and defense Health National challenges: Secure society and environment, Industry and digitization, Culture and family	Horizontal programmes
NRDI Fund Research sub-fund: HUF 105.762 billion		NRDI Fund Innovation sub-fund: 76.53 billion

Research data management plan
Dedicated OA budget

Gov. Decree 1077/2021. (II. 27.) on 2021 Programme Strategy of NRDI Fund

System of RDI programmes of NRDIO

National Research, Development and Innovation Office Hungary

International and domestic research and technological infrastructures

Researchers

Businesses

HEIs and Research institutions

New National Excellence Programme

National Conference of Student Research

Basic research („OTKA")

Forefront Research Excellence Programme

Cooperative Doctoral Programme

Calls for business enterprises (NRDI Fund and operational programmes)

Horizon Europe

International calls

Science Parks

Competence Centres

Thematic Excellence Programme

National Laboratories

University Innovation Ecosystem

International Excellence

NATIONAL LABORATORIES

National Research, Development and Innovation Office Hungary

BUDAPEST

- National Laboratory of Tumor Biology
- HCEMM NL
- National Laboratory of Agricultural Technology
- Molecular Fingerprinting NL
- Autonomous systems NL
- Artificial Intelligence NL
- Quantum Information NL
- Secure Technologies NL
- *National Laboratory for Nanoplasmonic Laser Fusion*
- National Laboratory for Info-communication and Information Technology
- Social Innovation NL
- National Laboratory for Digital Heritage

SZEGED

- National Laboratory for Laser-based Transmutation
- ELI NL
- National Laboratory for Biotechnology

PÉCS

- National Laboratory for Virology
- National Laboratory of Human Reproduction

VESZPRÉM

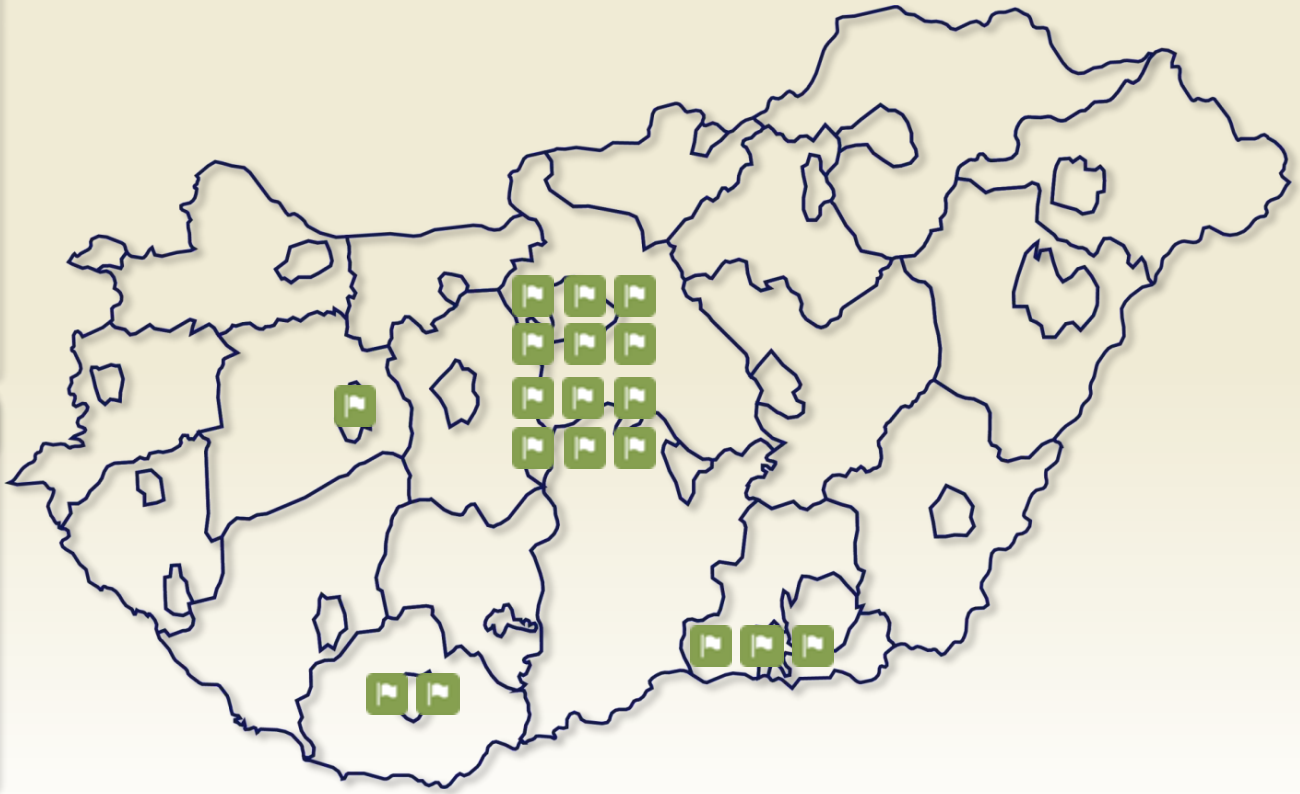
- Multidisciplinary Laboratory for Climate Change

Secure society and environment

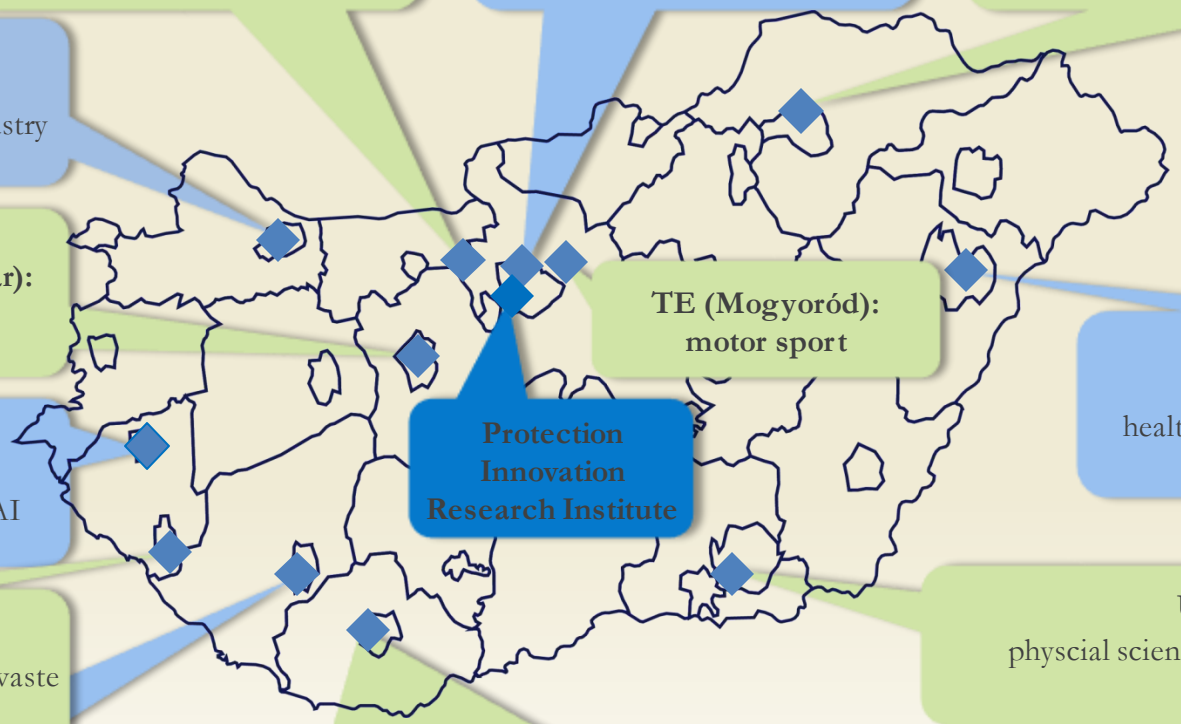
Industry and digitization

Culture and family

Health



SCIENCE PARKS



Óbuda University (Zsámbék):
Future Industry

BME: IoT, Industry 4.0, 5G
SE/NKE/PPKE: health
TE TSTI: sports science

University of Miskolc:
material science, geoscience, sustainable development, environment, waste management, logistics

Széchenyi University
IoT, Industry 4.0, AI, automotive industry

Óbudai University (Székesfehérvár):
Mechatronics

TE (Mogyoród):
motor sport

ZalaZONE:
Automotive industry, Industry 4.0, AI

Protection Innovation Research Institute

University of Debrecen:
health & food industry, automotive industry

Nagykanizsa (PE):
recycling economy, renewable energy, waste management, water management

University of Szeged
physcial sciences, laser technology, biotechnology, IT

Óbudai University (Kaposvár):
smart industry

University of Pécs:
specialized engineering, green economy, health economy, food industry

3 OPEN SCIENCE IN NATIONAL CONTEXT

NRDIO GOALS, ACTIVITIES & PRACTICES

OS GOALS OF NRDIO

- Establishment of a National Open Science Advisory Board
- Formulation of a national resolution ("Open Science White Paper")
- Join the EOSC Association
- Enforcement of Open Science principles in research and innovation applications

Open Science
OS Hungarian Position Paper

National Research, Development and Innovation Office Hungary

The statement has been published with the aim of expressing a **common position** on Open Science, based on **professional consensus**, summarizes the **principles and the fields of activity** of Open Science that best **serve the interests and development of Hungarian science**.

The statement reflects on the key pillars of the Open Science ecosystem

- open access to research outputs;
- FAIR and CARE research data management;
- research integrity;
- next generation metrics in research assessment;
- new types of rewards and initiatives;
- international cooperation networks;
- Citizen Science;
- education and skills.

Open Science

nkfih

Advisory Board to the position paper

National Research, Development and Innovation Office Hungary

Funding organizations

Association of Hungarian PhD and DLA Candidates (DOSZ)
College of University Library Directors (EKK)
Eötvös Loránd Research Network (ELKH)
Ministry for Innovation and Technology (ITM)
Governmental Agency for IT Development (KIFÜ)
Hungarian Accreditation Committee (MAB)
Hungarian Rectors' Conference (MRK)
Library and Information Centre of the Hungarian Academy of Sciences (MTA KIK)
Hungarian Doctoral Council (ODT)
National Scientific Student Council (OTDT)

Open Science

nkfih

Relevance of citizen science in the national RDI Strategy

- **Hungary's RDI strategy for 2021-2030** stresses the **importance of increasing the public awareness of the value of science and innovation** and highlighted that it is necessary to promote the **accessibility of scientific results and innovation methods** not only for universities, research institutes and businesses, but also **for society in general.**

Dedicated Citizen Science Support measure under the Science Patronage Programme

National Research, development and Innovation Office Hungary

The programme provides funding for

- **participation** in international scientific and innovation events and **conferences held abroad**
- **organizing** international scientific and innovation events and **conferences in Hungary** (with special regard to events related to international research infrastructure memberships)
- social promotion of the results of science and innovation, and **support of Citizen Science**
- **supporting the publication of scientific books** in paper-based and at the same time **open-access** electronic format.

648 applications **270 awarded grants**

ERA Action 14 on Citizen Science

National Research, development and Innovation Office Hungary

Hungary is committed to actively take part in ERA Action 14 Bring science closer to citizens under the ERA Policy Agenda and priority is given to the following activities:

Plastic Pirates Initiative

- **Hungary has joined the Plastic Pirates** citizen science initiative and participates in the "Europeanisation of the Plastic Pirates Citizen Science Campaign" action coordinated by DLR-PT and will contribute to further development of the initiative by fine tuning the citizen science approach and methodology and by organizing local sampling campaign and communication activities.

Mutual Learning Exercise

- **Hungary participates** in the Mutual Learning Exercise "Citizen Science Initiatives – Policy and Practice" launched under the PSF in 2022.
- Hungary is committed to get engaged in the **continuation of the MLE** on Citizen Science and **prepare the ground for a policy coordination mechanism** on public engagement practices and a network of exchange among responsible national organizations

Further plans based on institutional level initiatives

Although several citizen science activities are implemented at institutional level at Hungarian universities or research organizations but no dedicated platform or network has been established to monitor or link these initiatives.

- developing a monitoring system for the ongoing CS projects,
- a national Citizen Science network/hub will be established to create a common platform for those organizations which have already been implementing citizen science actions or express their commitment to promote public engagement in RDI

THANK YOU FOR YOUR ATTENTION!

Citizen science in ethology:

Comparative studies

Fanni Lehoczki, PhD

Postdoctoral Researcher

Paula Perez Fraga, VMD

PhD student

Neuroethology of Communication Group

Department of Ethology, ELTE

DEPARTMENT OF ETHOLOGY

FAMILY DOG PROJECT

erc

MLE on Citizen Science Initiatives
Budapest
13.09.2022

Why do we need citizen science approach in ethology?

- More owner can be reached
- Animals are tested in their natural environment
- Data collection during pandemic
- Data collection during swine-fever

Our studies


Subjects wanted!
Researchers of the Department of Ethology, ELTE aim to compare whether family pigs and dogs react similarly when hearing different human vocalizations.
DIY at your home
Only a few technical devices are needed
Get to know a new side of your 4-legged friend!
Get researcher experience!
More information & application at the link in the post
In case of any questions contact Fanni Lehoczki at
onlinepigdogstudy.elte@gmail.com


Do you live with a food motivated...
SUBJECTS WANTED!
minipig?
or
dog?
Researchers of Department of Ethology, ELTE aim to compare how pigs and dogs behave when facing an unsolvable test situation.
You can do it at home
Takes only 30 minutes
No special objects are needed
Fun for both you & your pet!
DEPARTMENT OF ETHOLOGY
More information & application at the link in the post
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Method

Preparation

1. Writing a protocol for owners
2. Making a demo video
3. Preparing application form + video accepting form
4. Preparing online storage system
5. Preparing certificate/gift
6. Making a database for the applicants
7. Advertising the test
8. Writing emails to applicants

Method

Steps for the applicants

1. Application
2. Getting the test material
3. Room setup
4. Online live discussion with experimenter/

   Conduct the test in the online presence of the experimenter
5. Sending the video file
6. Certificate&gift

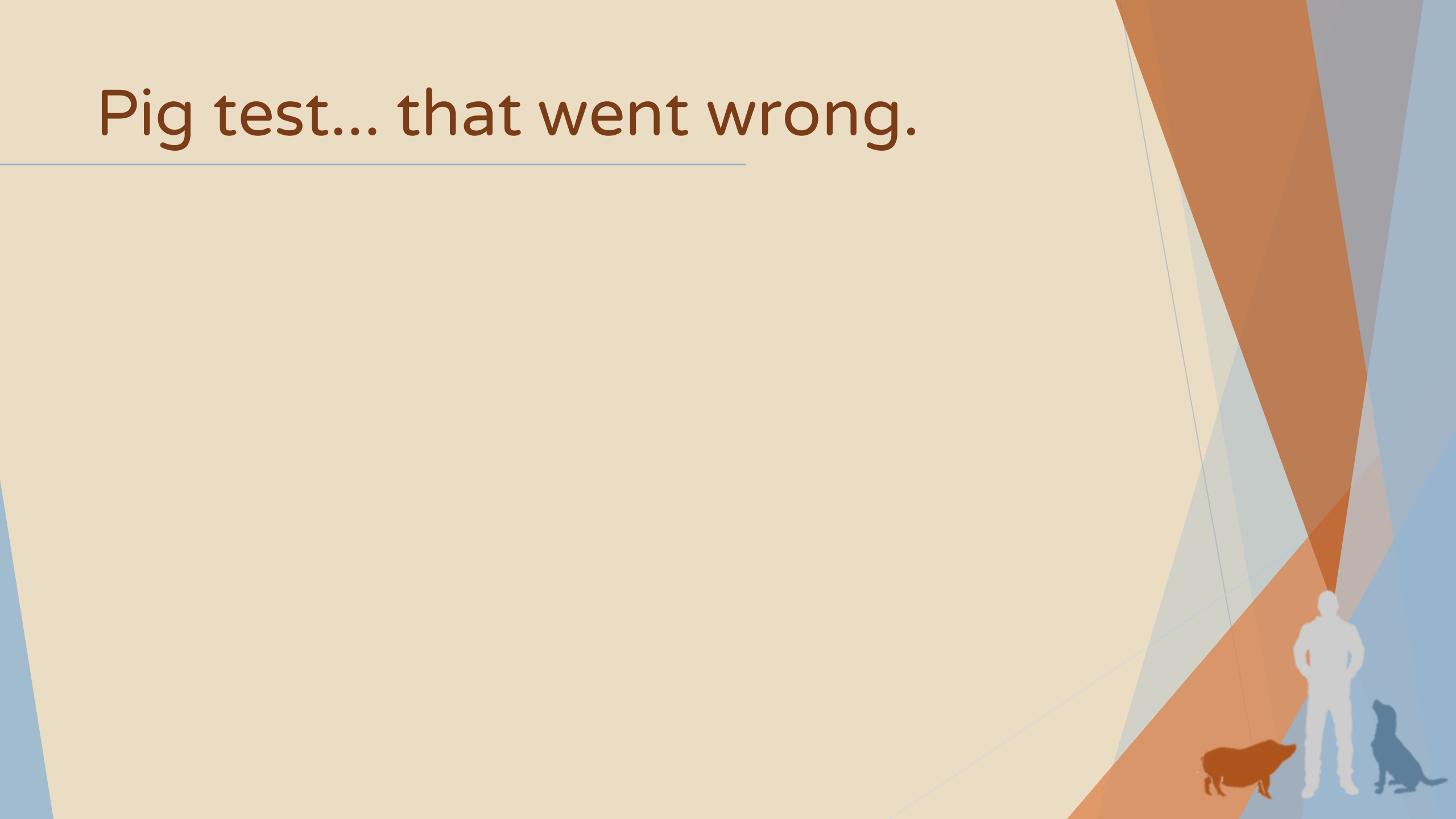
Most frequent issues

- Not appropriate room setup
- Owner has no technical skills/motivation
- Owner does not follow the steps of the protocol
- Lack of or problem with technical devices
- Owner’s behaviour interferes the subject
- Disturbances during the test

Pig specific issues

- Hard to adjust the protocols for the pigs
- Fewer avaiable companion pigs
- Pig owners are less motivated
- Pigs are hardly controllable

Pig test… that went wrong.

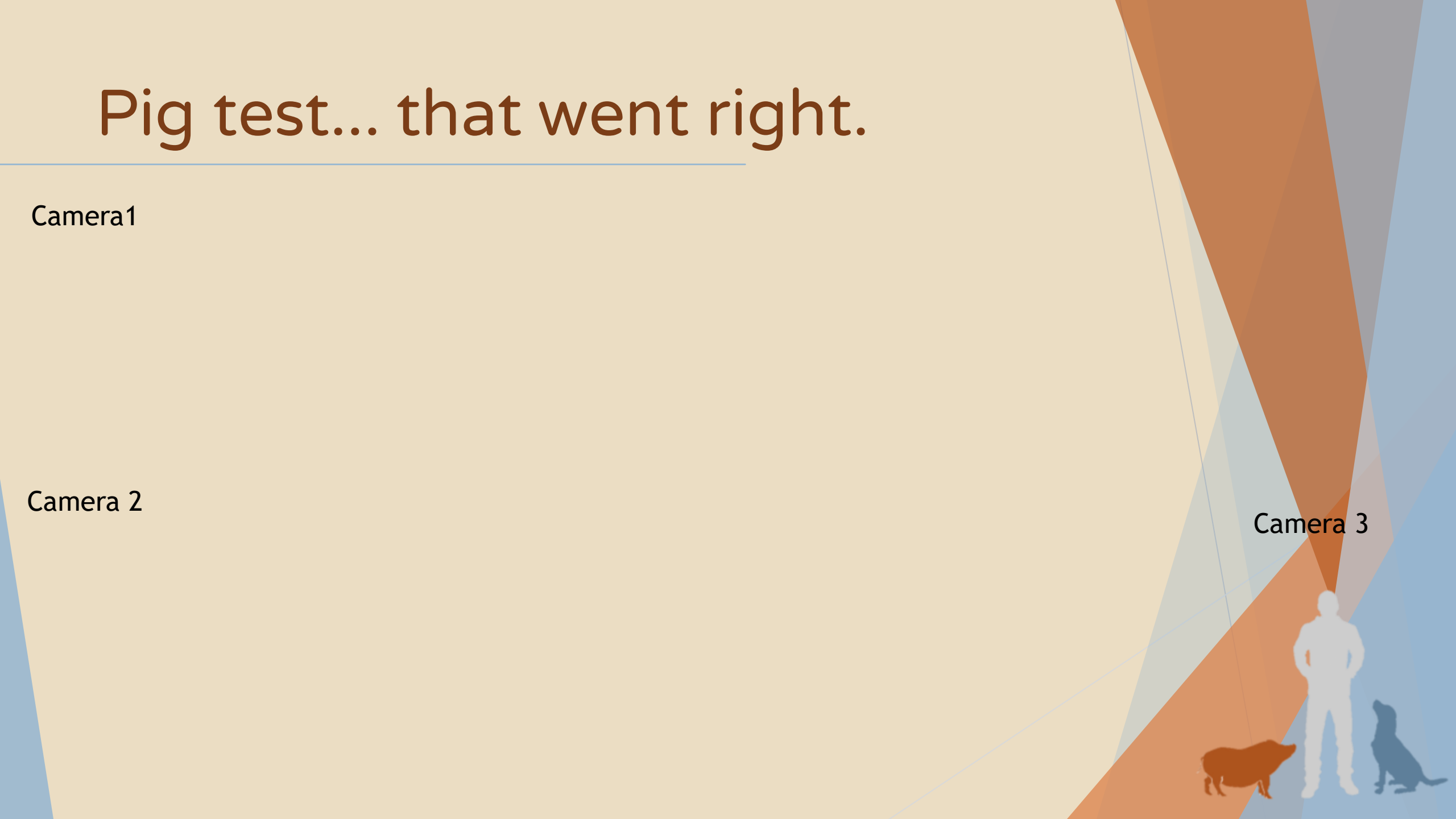


Pig test... that went right.

Camera1

Camera 2

Camera 3



Results

Subjects

30/52

22/ 34

Discussion of the citizen science approach in ethology

Pros

It works ☺

Possible during lockdown

More owners, from all over the world

Testing in a more natural environment

Cons

Extra work (e.g testing at nightime)

Simple setup and protocol

Lot of useless data

Thanks for your attention!

TOPIC 4 WORKSHOP PART II – DAY 2

13:30 – 13:35	**Setting the Ambition** – Where do we want to be in 2030?
13:35 – 13:50	**Case Study:** the Dutch National Programme Open Science
13:50 – 14:30	**Discussion Groups:** *Developing a national ambition and roadmap towards 2030*
14:30 - 14:40	**Reflection:** New actions within the categories of the Enabling Factors?

----------coffee break ----------

15:00 - 15:30	**FINAL REPORT** – gathering your inputs

European Commission

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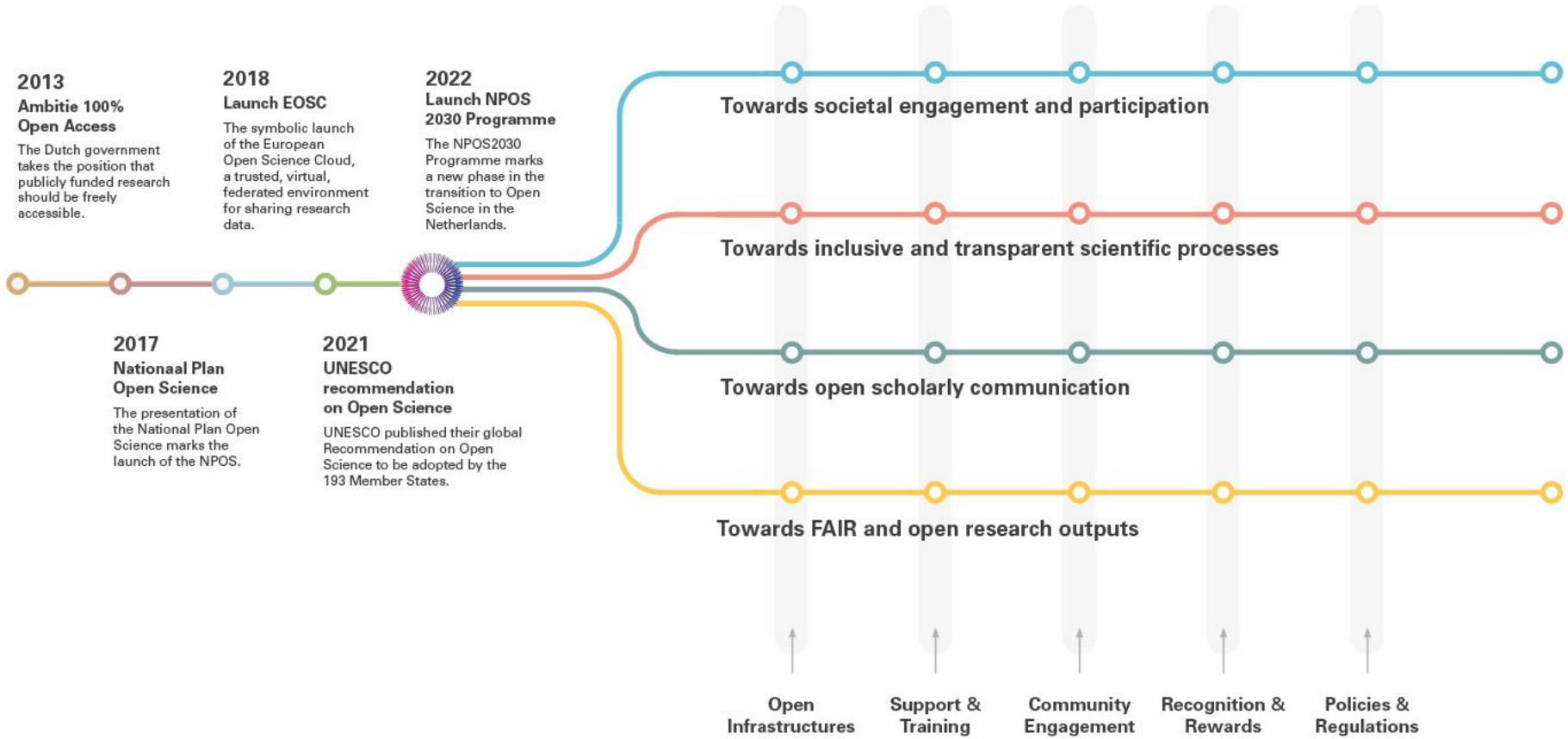
NPOS Ambition 2030

2013 - 2021

2022 - 2030

2030

key lines of action



strategic goals

Close collaboration between knowledge institutions, government, industry, and citizens to strengthen science and optimise the processes of creating, sharing, and communicating knowledge for the benefit of society.

Inclusive, efficient, and transparent processes of scientific (co-)creation, evaluation, quality assurance and communication

Removal of barriers to reading and reusing all scientific output, so everyone can access sci-entific knowledge in a sustainable way and benefit from it

Products of and for knowledge creation, like data and software, being findable, accessible, interoperable, and reusable (FAIR), and open in as far regulations allow

nationaal programma open science

NPOS

2013 - 2021 → 2022 - 2030

2013
Ambitie 100% Open Access
The Dutch government takes the position that publicly funded research should be freely accessible.

2017
Nationaal Plan Open Science
The presentation of the National Plan Open Science marks the launch of the NPOS.

2018
Launch EOSC
The symbolic launch of the European Open Science Cloud, a trusted, virtual, federated environment for sharing research data.

2021
UNESCO recommendation on Open Science
UNESCO published their global Recommendation on Open Science to be adopted by the 193 Member States.

2022
Launch NPOS 2030 Programme
The NPOS2030 Programme marks a new phase in the transition to Open Science in the Netherlands.

nationaal programma open science

NPOS

tinyurl.com/nposreport

2013 - 2021

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20
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2020

nationaal programma open science

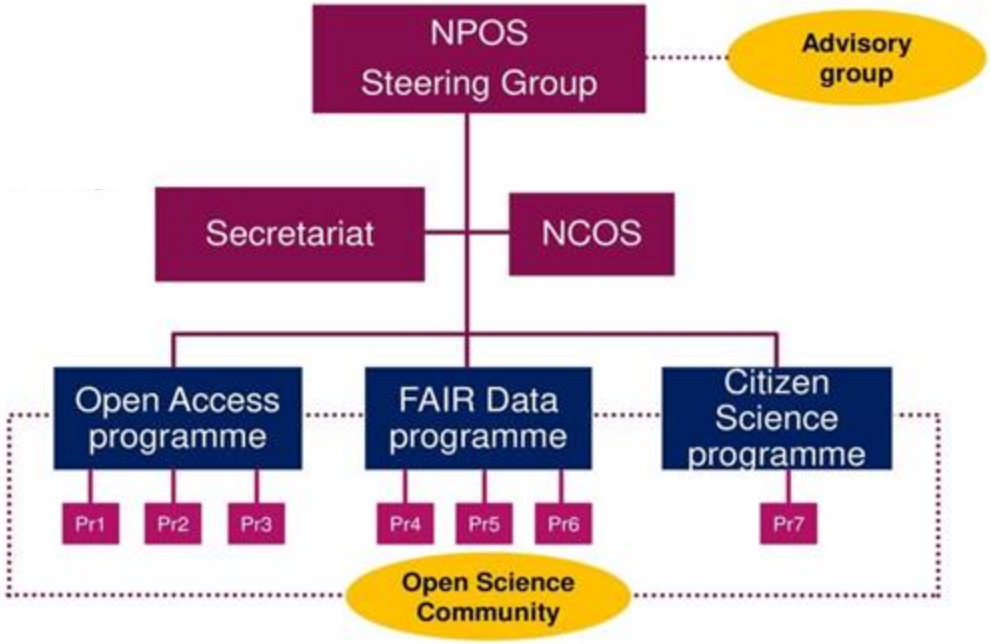
Kennis en krachten gebundeld – citizen science in Nederland

Wetenschap en samenleving in cocreatie

Eindverslag van de werkgroep Citizen Science

26 oktober 2020

NPOS (2020) Kennis en krachten gebundeld – citizen science in Nederland



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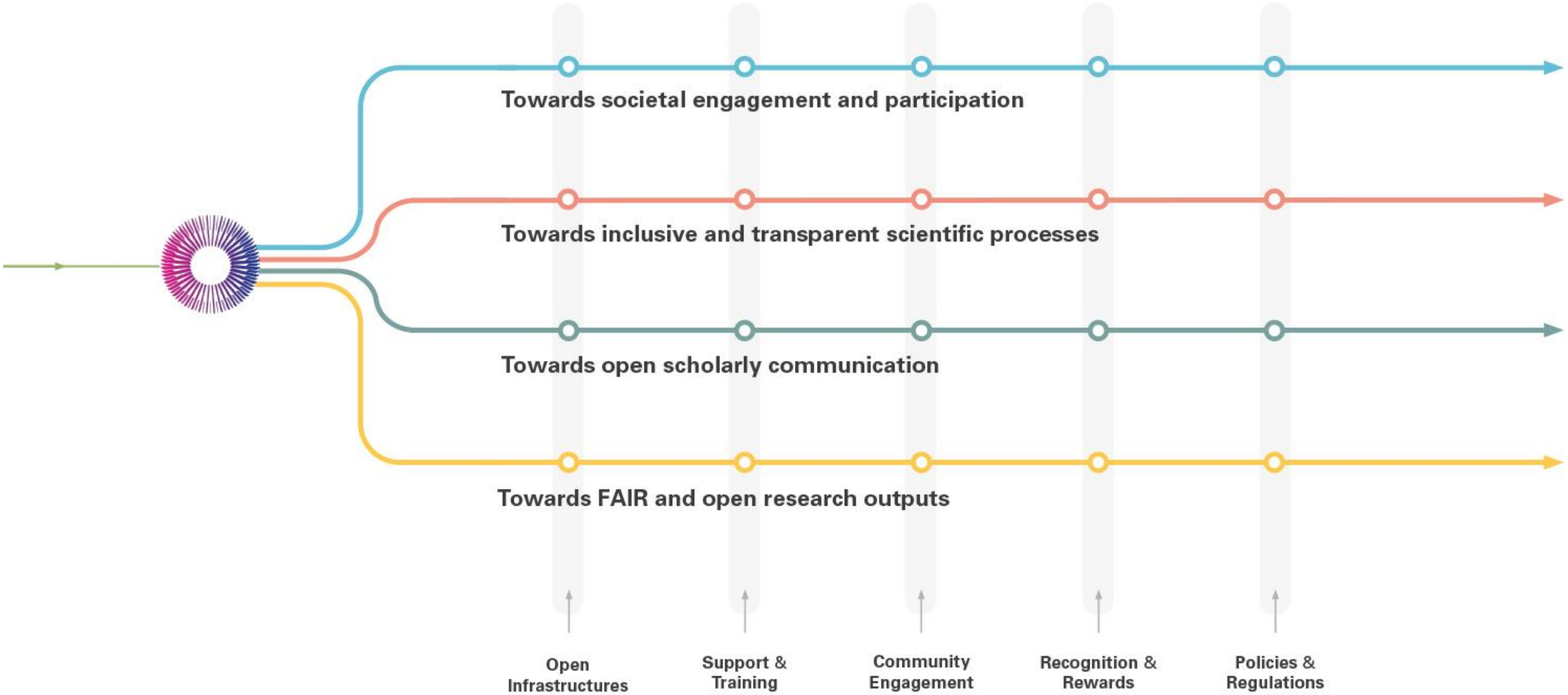

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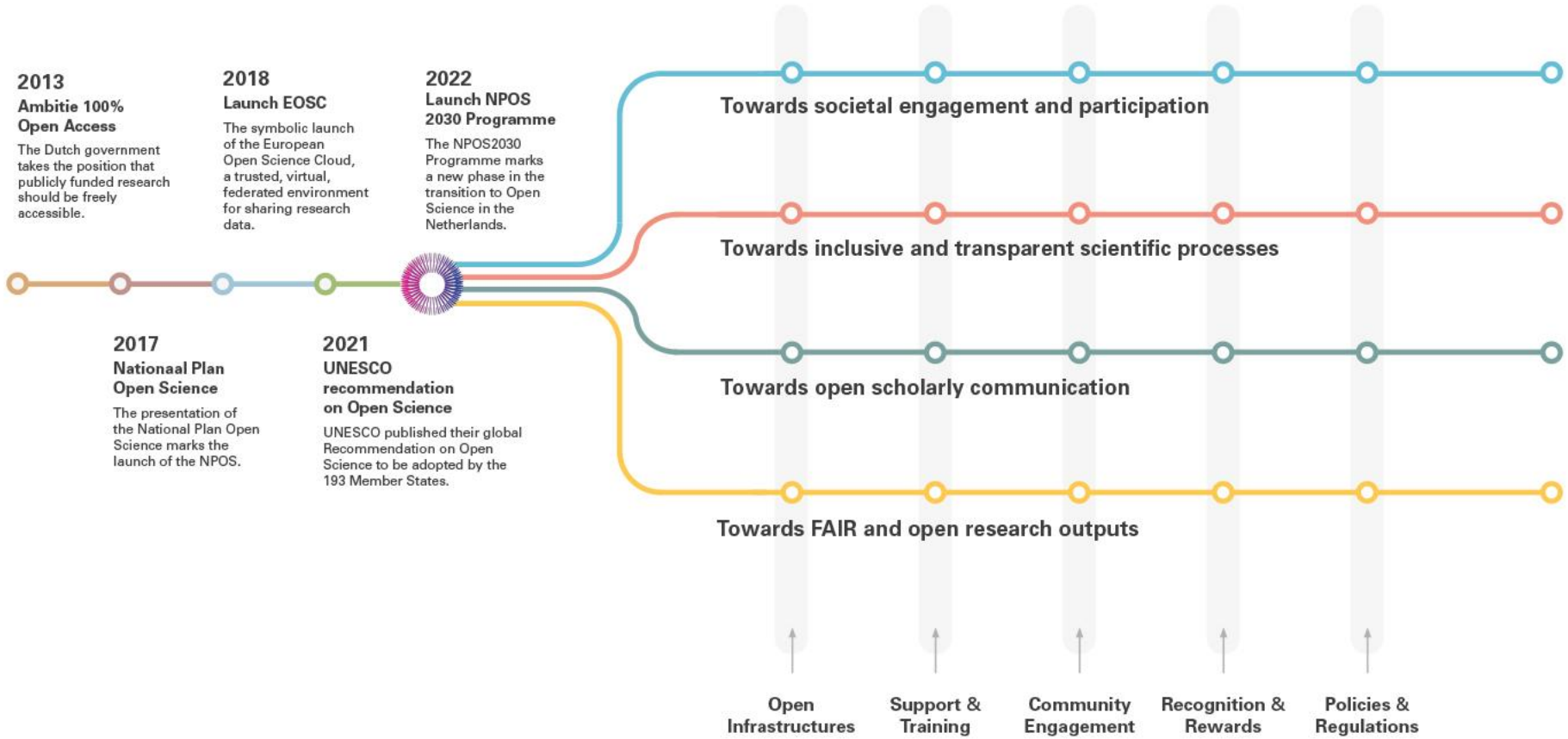

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Content of the FINAL REPORT

The Final Report will draw on the lessons derived from the main topics discussed during the country visit meetings and identify practices (both successful and unsuccessful), include sets of ***operational recommendations***, ***lessons learned***, ***success factors*** *and* ***enabling conditions****. It will contain a solid set of concrete operational recommendations which will be* ***backed up by evidence, best practice and analyses of approaches introduced in the Member States****. It will also include a solid* ***policy-oriented executive summary*** *presenting these recommendations in the European R&I policy context.*

European Commission

Thank you!

RTD-PSF@ec.europa.eu