INSPIRING SCIENTIFIC EXCELLENCE AND COMPETITIVE INNOVATIONS

RENEWAL OF THE RDI SYSTEM IN HUNGARY

József Pálinkás
President
National Research, Development and Innovation Office

Cambridge, Clare College, 24-10-2016

Crucial challenges of the Hungarian RDI system in the 21th century

Outdated state subsidized research network

- Financial and functional inefficiency
- Low participation of young researchers
- Fragmented research network
- Performance issues

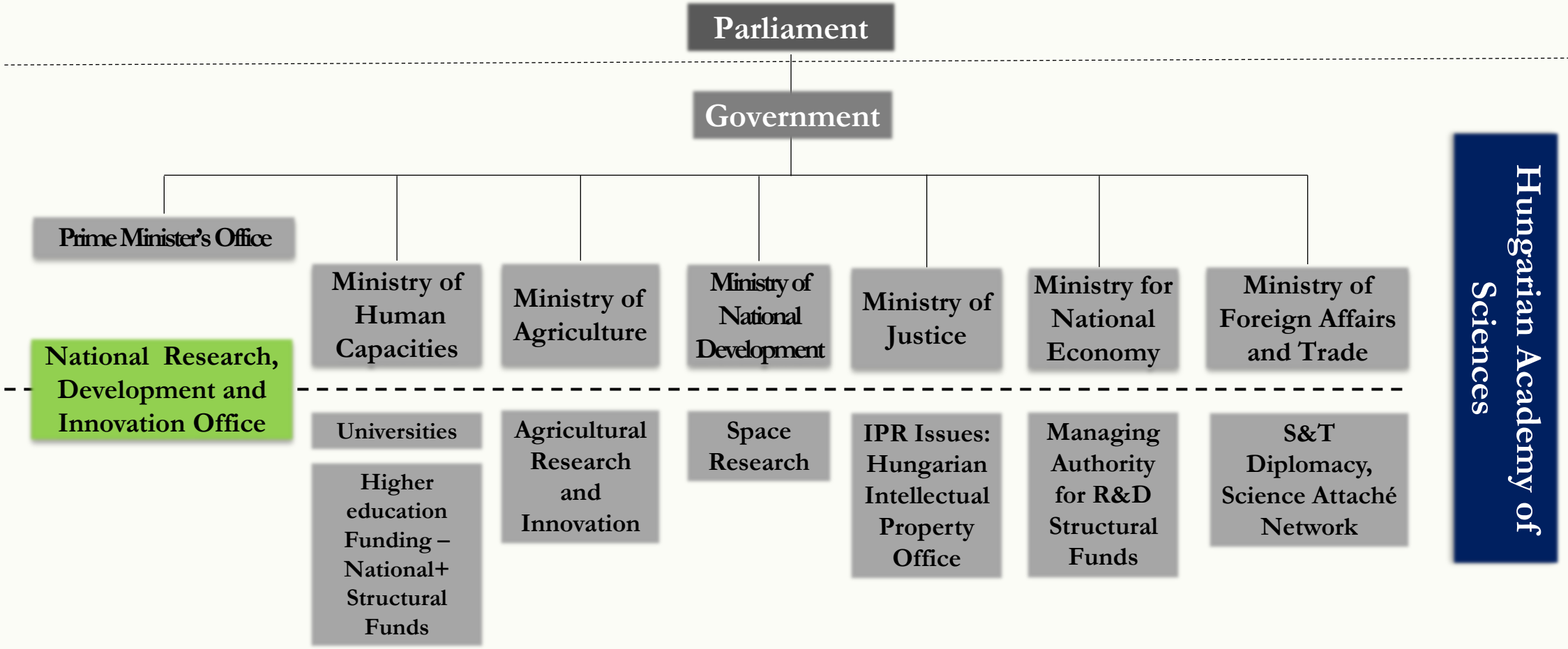
fragmented RDI Governance

- Transparency problems in RDI funding
- No proper coordination of RDI Programmes funded by national and EU resources
- Fragmentation of RDI funding

Poor culture of Supporting Scientific Excellence

- RDI Support is not performance based
- Deficiences in RDI evaluation culture

Governmental Structure of RDI in Hungary



Outdated state subsidised research network – restructuring the Hungarian Academy of Sciences

Opportunities in change

- rich tradition of Hungarian science
- numerous examples of individual scientific achievements
  (prize winners, ERC grant winners)
- there were only a few research institutes with outstanding performance on an international level
- a general opinion of "there is a need for change"– a supportive attitude

Phases of change

I. Formation of "Excellence islands" (Momentum programme) with young talents as the initial step of the renewal ("organic" change)
II. Restructuring of the whole research network ("revolutionary" change)
III. Fine-tuning, long-term developments

Outdated state subsidised research network – restructuring the Hungarian Academy of Sciences

Main Aspects of the Renewal

1. Establishing a sustainable research network
2. Creating conditions with a limited amount of resources, which allow in the long run better efficiency and output
3. Organisational frame for a new evolution
4. Commitment to long term excellence and sustainability

The HAS research network now

RESEARCH INSTITUTE NETWORK	RESEARCH GROUP NETWORK
▪ 10 RESEARCH CENTRES ▪ 5 RESEARCH INSTITUTES	89 RESEARCH GROUPS AT UNIVERSITIES AND OTHER PUBLIC INSTITUTIONS
47 Momentum RG-s at the 15 institutions	32 Momentum RG-s at universities

Supporting scientific excellence – Hungarian Academy of Sciences – Momentum Programme

Main organisation principle:

EXCELLENCE

The Momentum Programme – first launched in 2009 – aims at the renewal of research in the academic sphere by the support of excellent Hungarian researchers.

Logic

- Giving more flexibility to cutting edge research
- Creating predictable career paths for researchers
- Improving transition from one field to another: encouraging researchers and institutions to embark on emerging fields of science
- Funding trend setting research

The Hungarian Academy of Sciences provided a financial support of EUR 1.3 MN for 12 new research teams in 2015.

Supporting scientific excellence – Visiting fellowship for foreign researchers – Hungarian Academy of Sciences

Visiting fellows take part in the work of Hungarian research groups within the framework of public employment or on a contract basis.
Joint research projects can be carried out in all fields of science.

The total amount of funding for the year 2016 is EUR 161,300.

Hungarian RDI Funding system: Structural Changes

Until 31 December 2014

Hungarian Scientific Research Fund (OTKA)
basic research

Research and Technology Innovation Fund (KTIA)
experimental development and innovation

National Innovation Office (NIH)
international relations, organisational tasks

From 1 January 2015

National Research, Development and Innovation Office (NKFIH/NRDIO)

- basic research
- research development
- technology development
- innovation
- policy

2. Governmental Structure of RDI: National Research, Development and Innovation Office

Mission

Increasing competitive-ness through effective planning and funding of R&D&I

Mandate

Strategy planning

Funding

Representing

Vision

A world-class RDI funding agency

Creating internationally attractive RDI environment

Linking RDI to the economy & society for increase growth & prosperity

Values

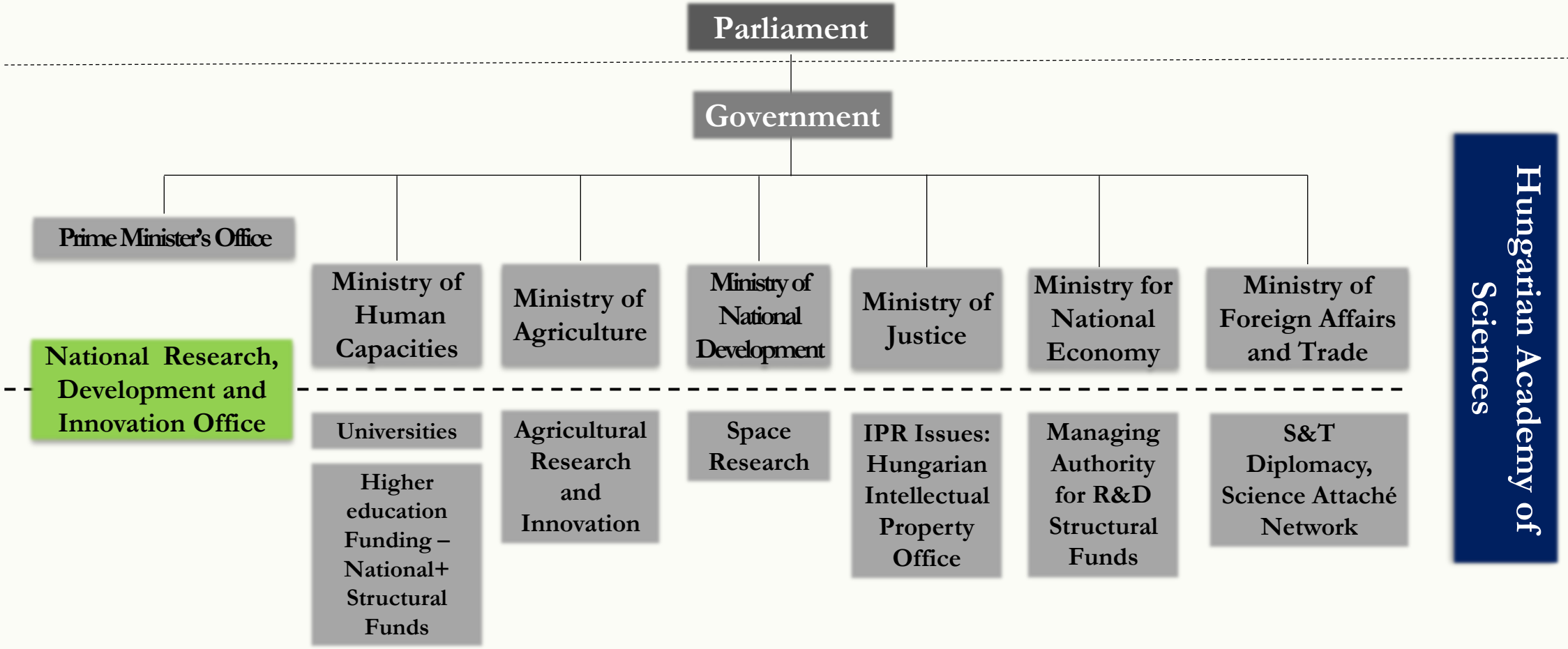
Excellence

Transparency

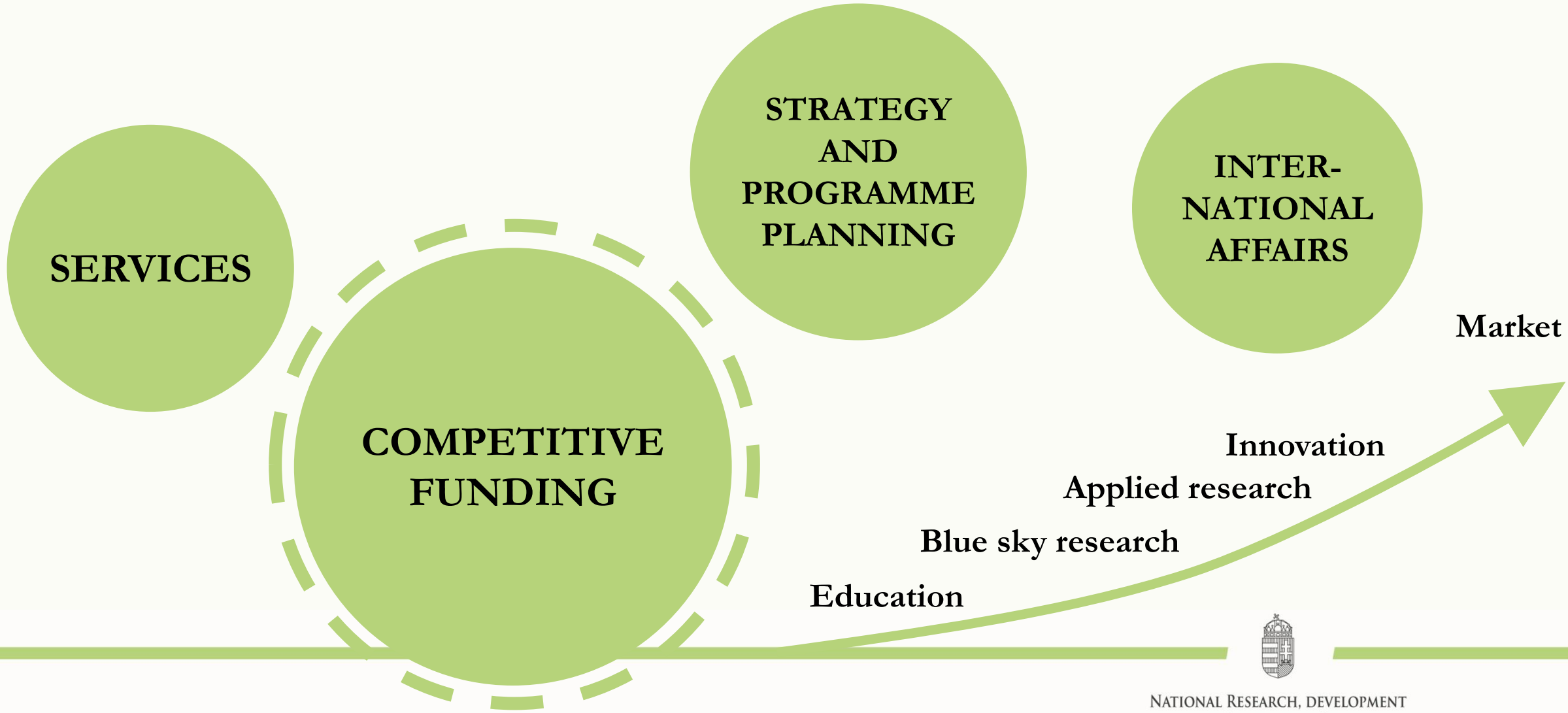
Integrity

Trust

Governmental Structure of RDI in Hungary



2. National Research, Development and Innovation Office – the central governmental entity for RDI

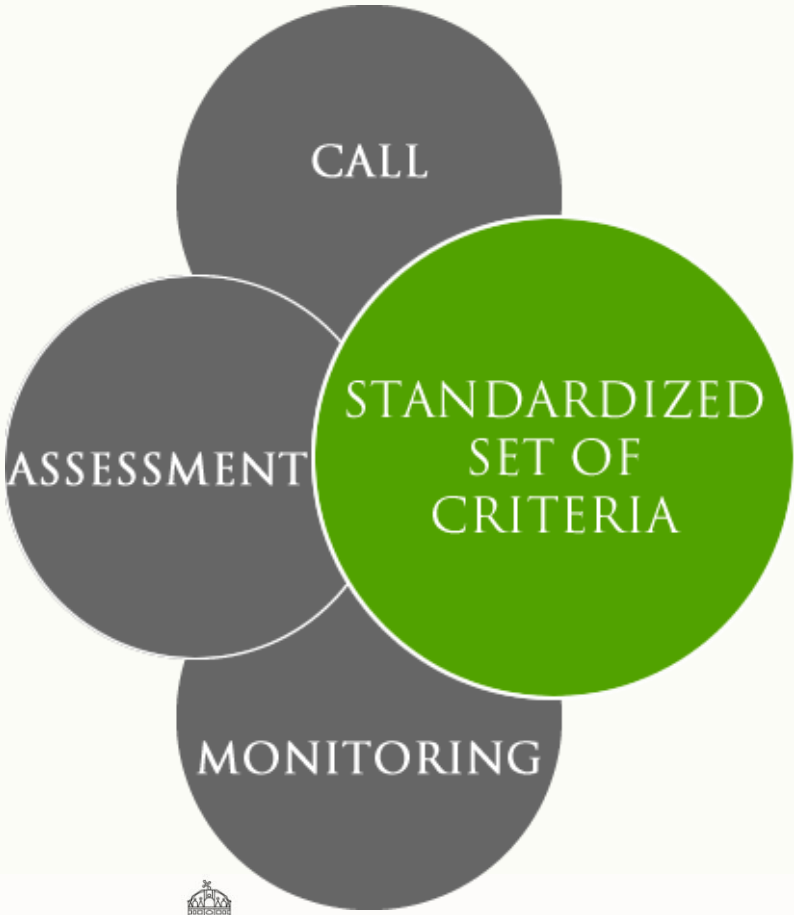


NATIONAL RESEARCH, DEVELOPMENT AND INNOVATION OFFICE
HUNGARY

Coordination of resources in a competitive funding system

- coordinated management, flexible planning, complex portfolio of calls
- well-balanced support to discovery research, experimental development and innovation
- novelty, applicability, marketability, international competitiveness, sustainability
- challenge-oriented funding
- practical applicability of RDI results

The power of excellence



Supporting scientific excellence – Programmes

Complementary ERC support

Strengthening excellence in strategical R&D institutions

Aim

Providing funding for those excellent researchers, whose positively evaluated proposals were rejected in the second phase in the following programme types: Starting Grant (StG), Consolidator Grant (CoG) and Advanced Grant (AdG).

Providing funding for R&D institutions of strategic importance, strengthening the capacities of Hungarian R&D units and creating competitive research infrastructure that can participate proactively in the European Research Area.

Means

The NRDI Office earmarked EUR 1.5 million for the support of ERC researchers between 2015 and 2016. The available budget in 2015 is EUR 1 million.

- Total budget: cca. EUR 130 million
- The maximum amount of support an applicant can apply for is EUR 6.5 million
- Applicants include higher education institutions and state funded research institutions

Supporting scientific excellence – ERC support programmes – Mobility scheme

Aim:

Providing potential Hungarian ERC applicants with the opportunity of a three-month visit to a research group of a foreign researcher with an ERC grant in the respective field.

Means:

- Expectation: supporting the mobility of 20 Hungarian researchers
- Total budget: cca. EUR 320,000
- Supporting three months visits: EUR 4,000 per month, plus travel expenses and insurance

The Sources of R&D Funding in Hungary

National Sources

National Research, Development and Innovation Fund

Cohesion Policy Instruments

Structural Funds

- *European Social Fund*
- *European Regional Development Fund*

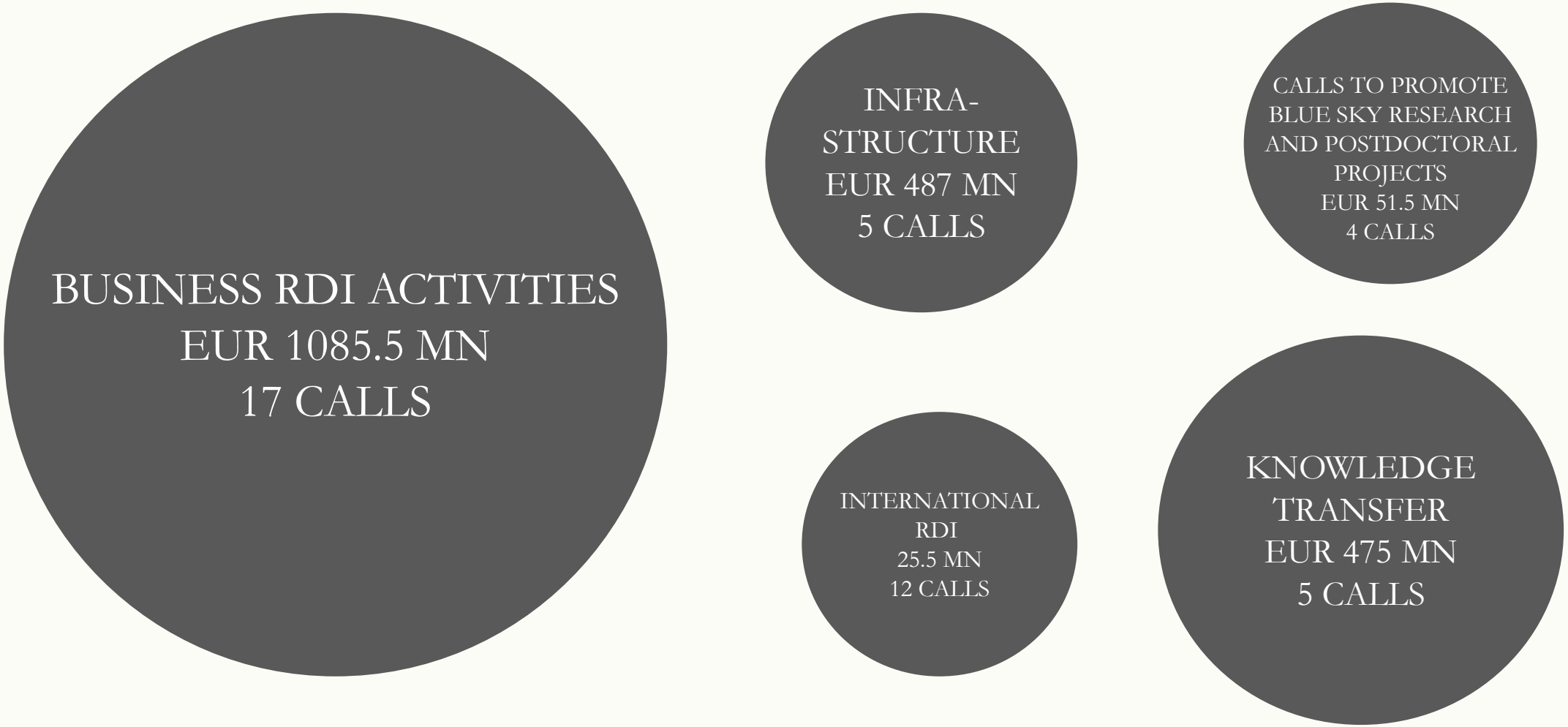
Operational Programmes

- *Economic Development and Innovation Operational Programme (EDIOP)*
- *Competitiveness Central Hungary Operational Programme (CCHOP)*

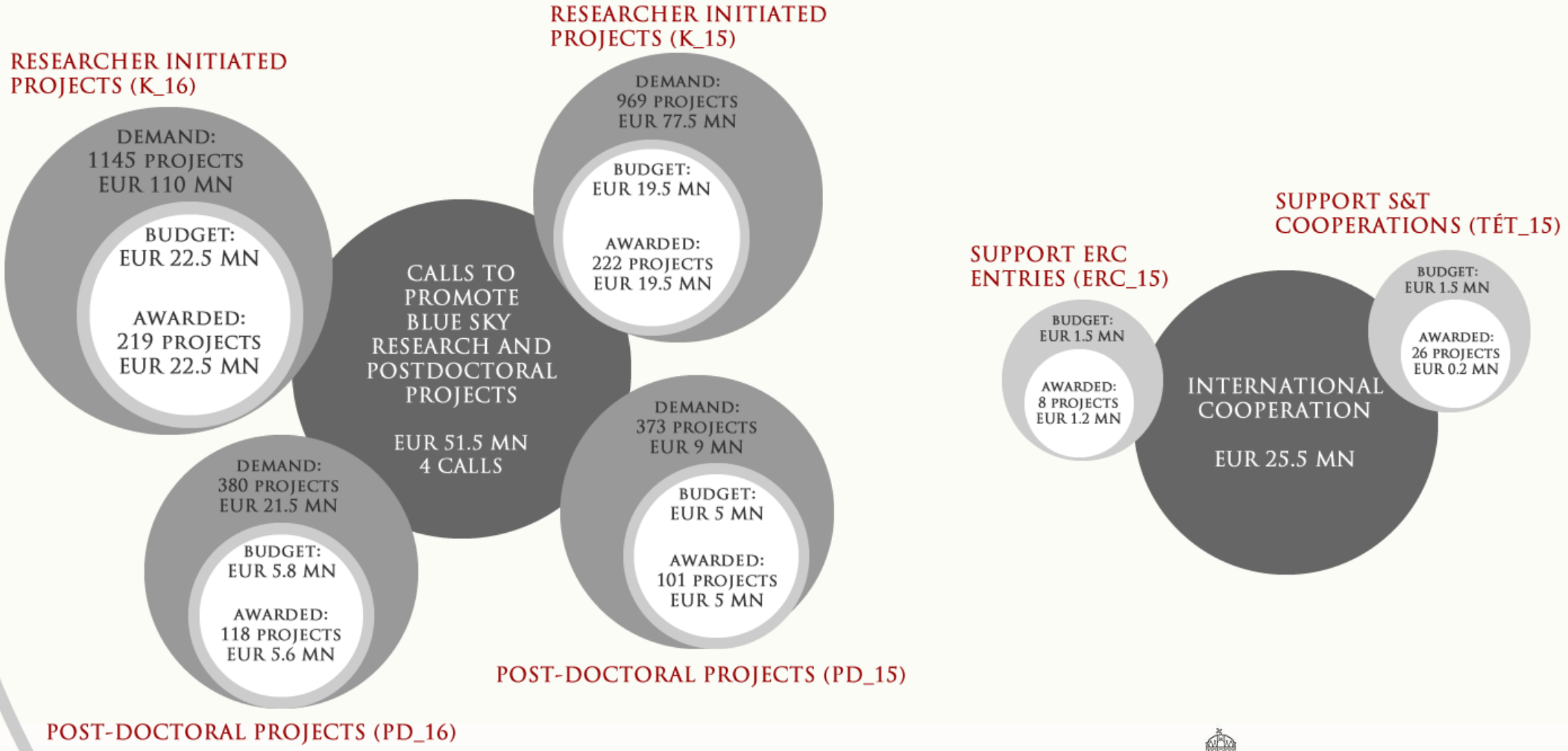
International Funding

Framework Programmes (FP7, Horizon2020)
EUREKA
EUROSTARS,
AAL, ECSEL)

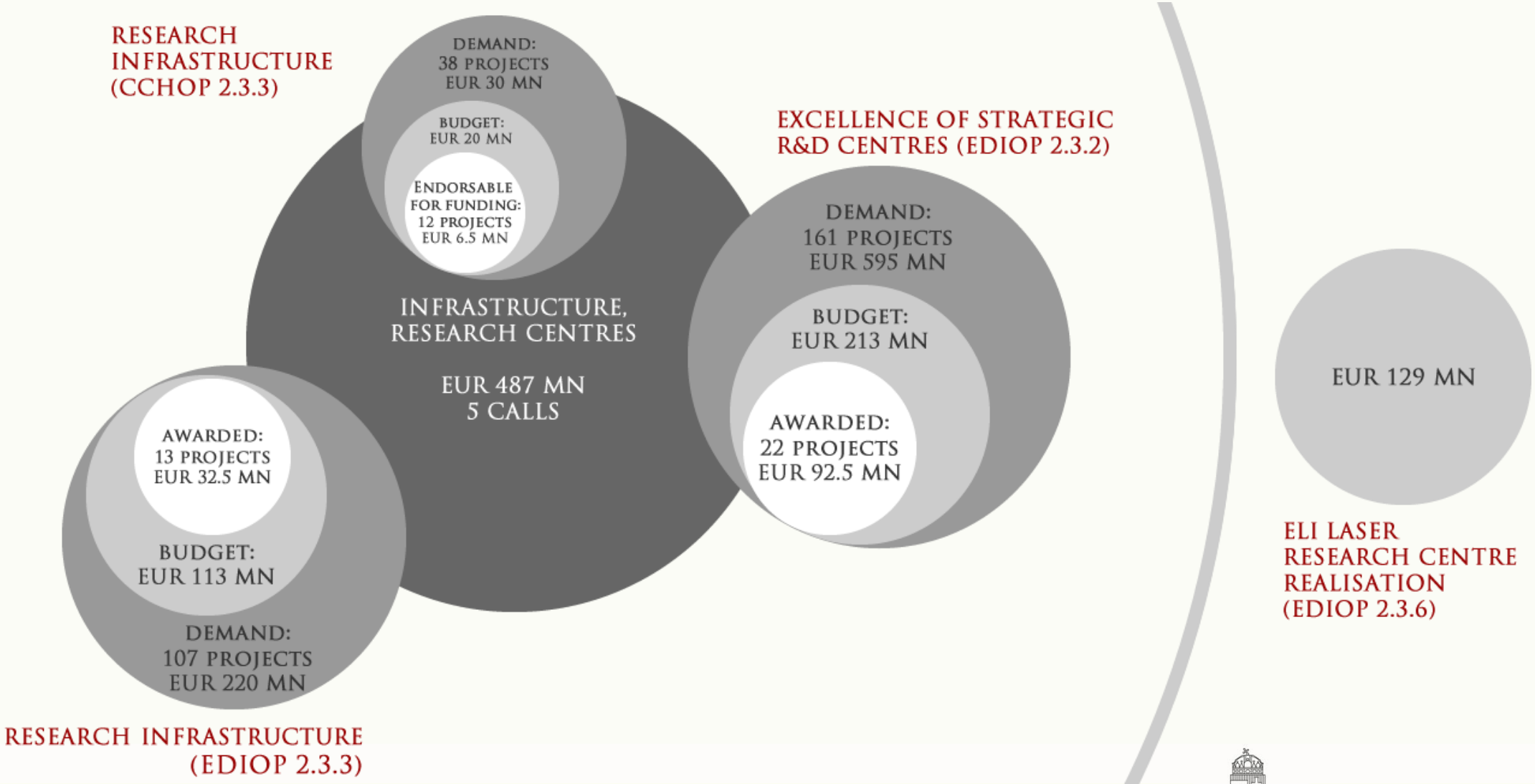
Funding measures in 2015 and 2016



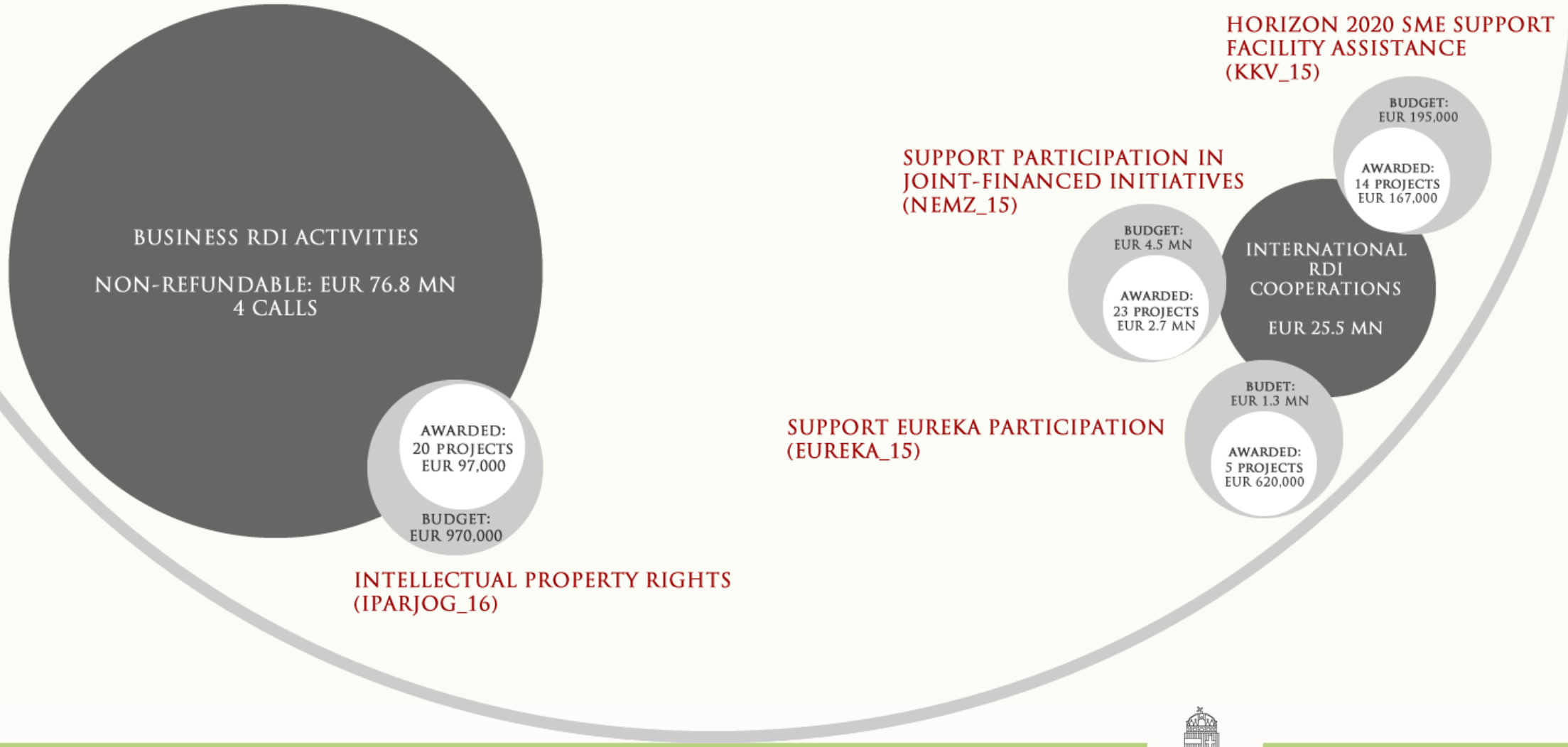
Domestic funds for universities and research centres (2015-2016)



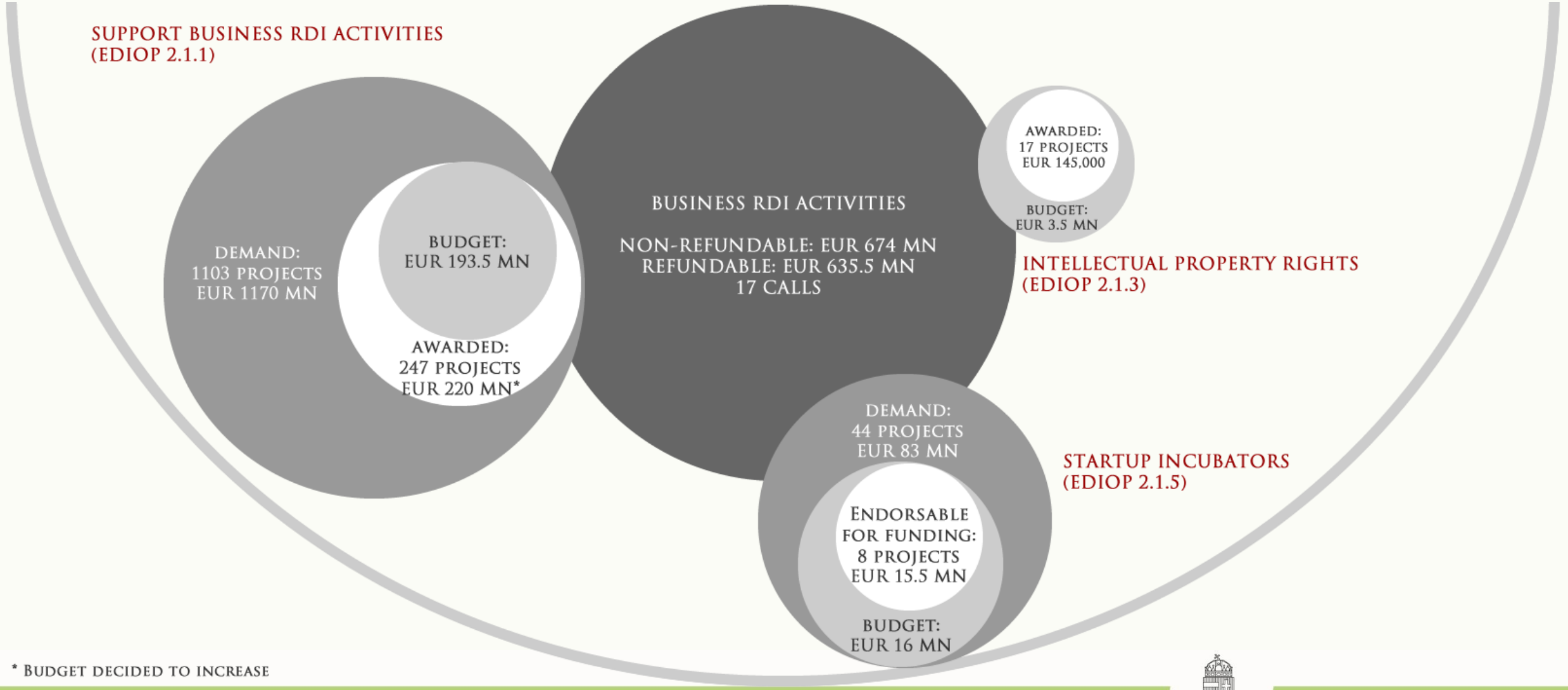
EU funds for universities and research centres (2015-2016)



Domestic funds to promote business RDI (2015-2016)

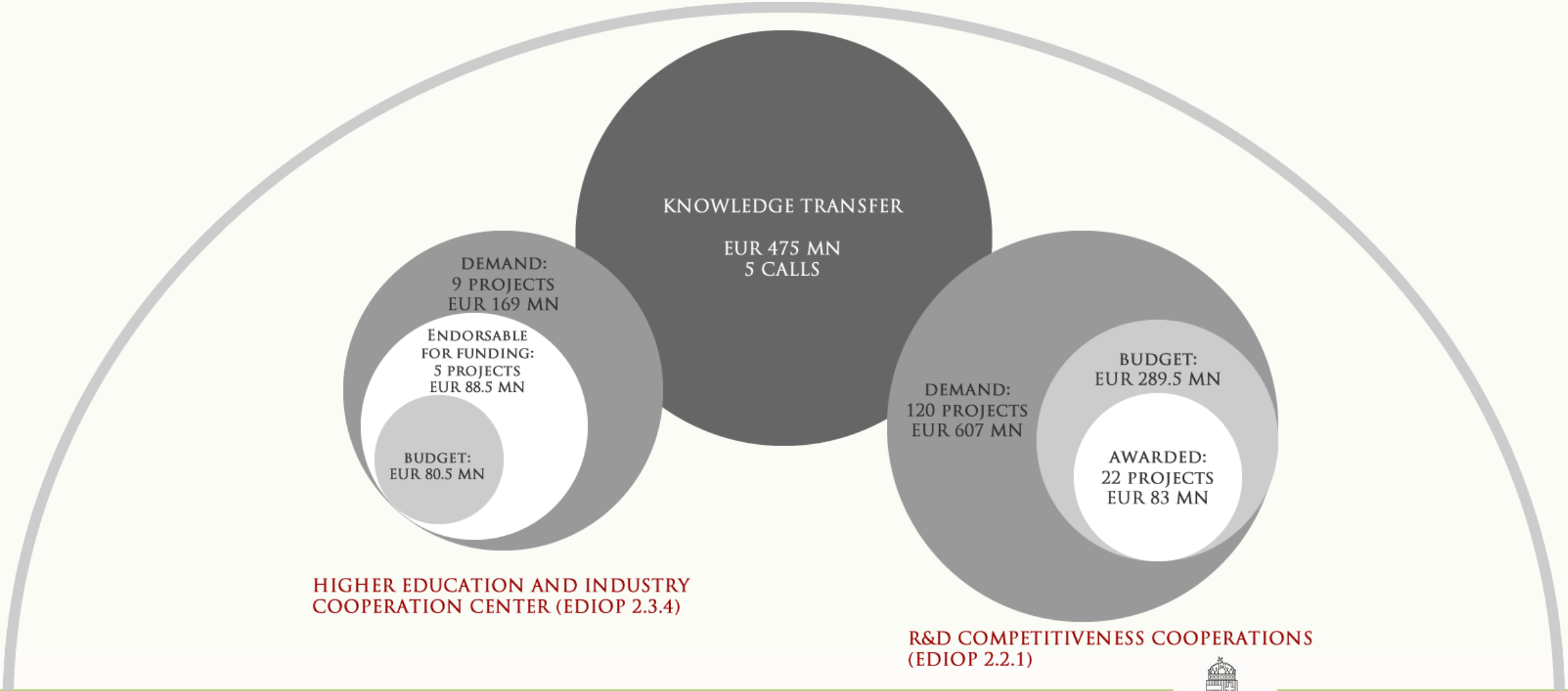


EU funds to promote business RDI (2015-2016)

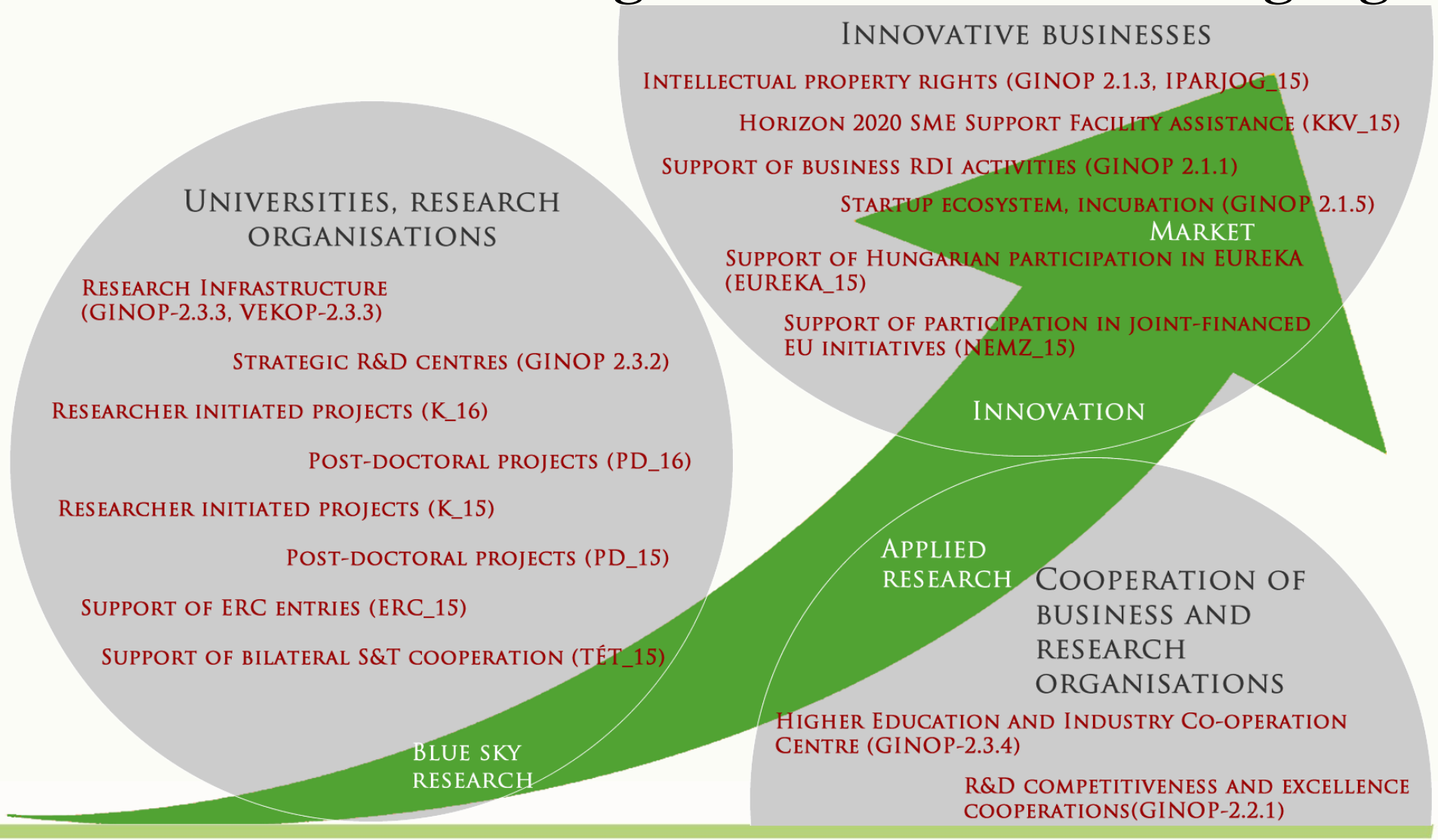


* BUDGET DECIDED TO INCREASE

Support cooperation between business and research (2015-2016)

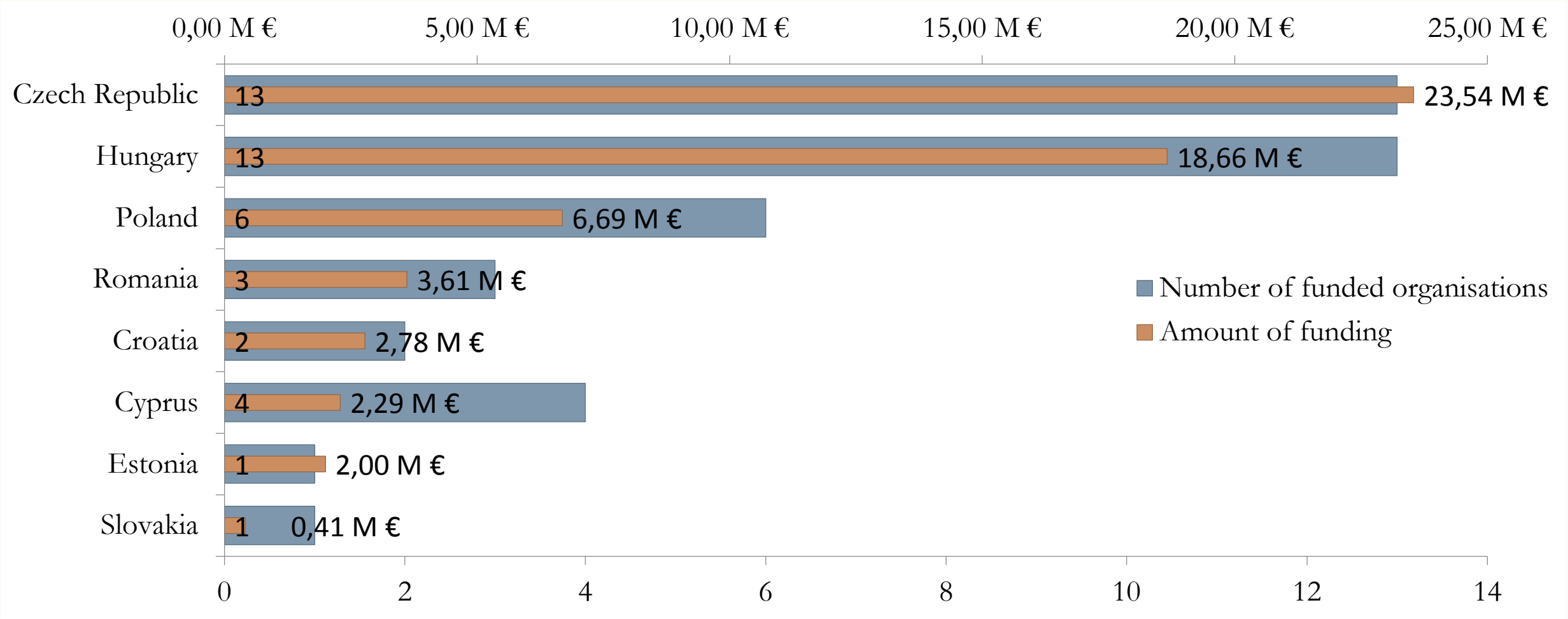


Funding of the different RDI target groups (2015-2016)

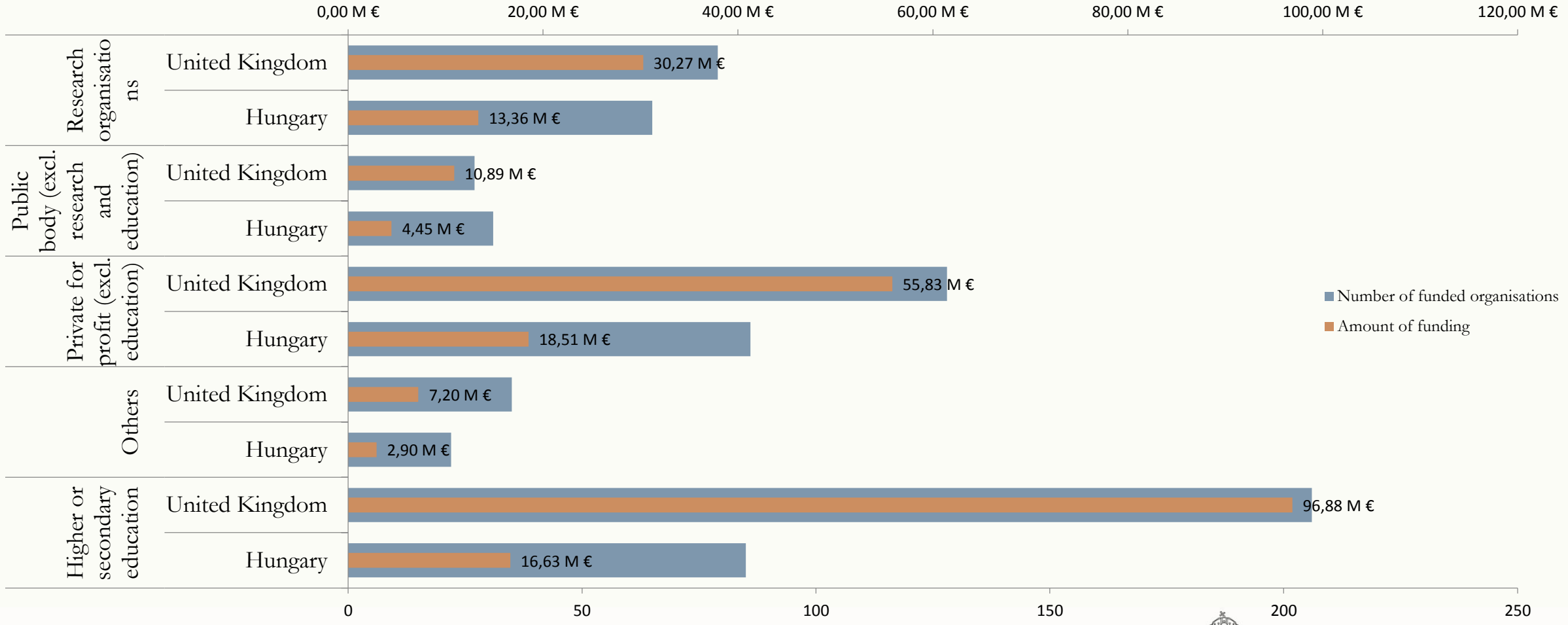


National Research, Development and Innovation Office
Hungary

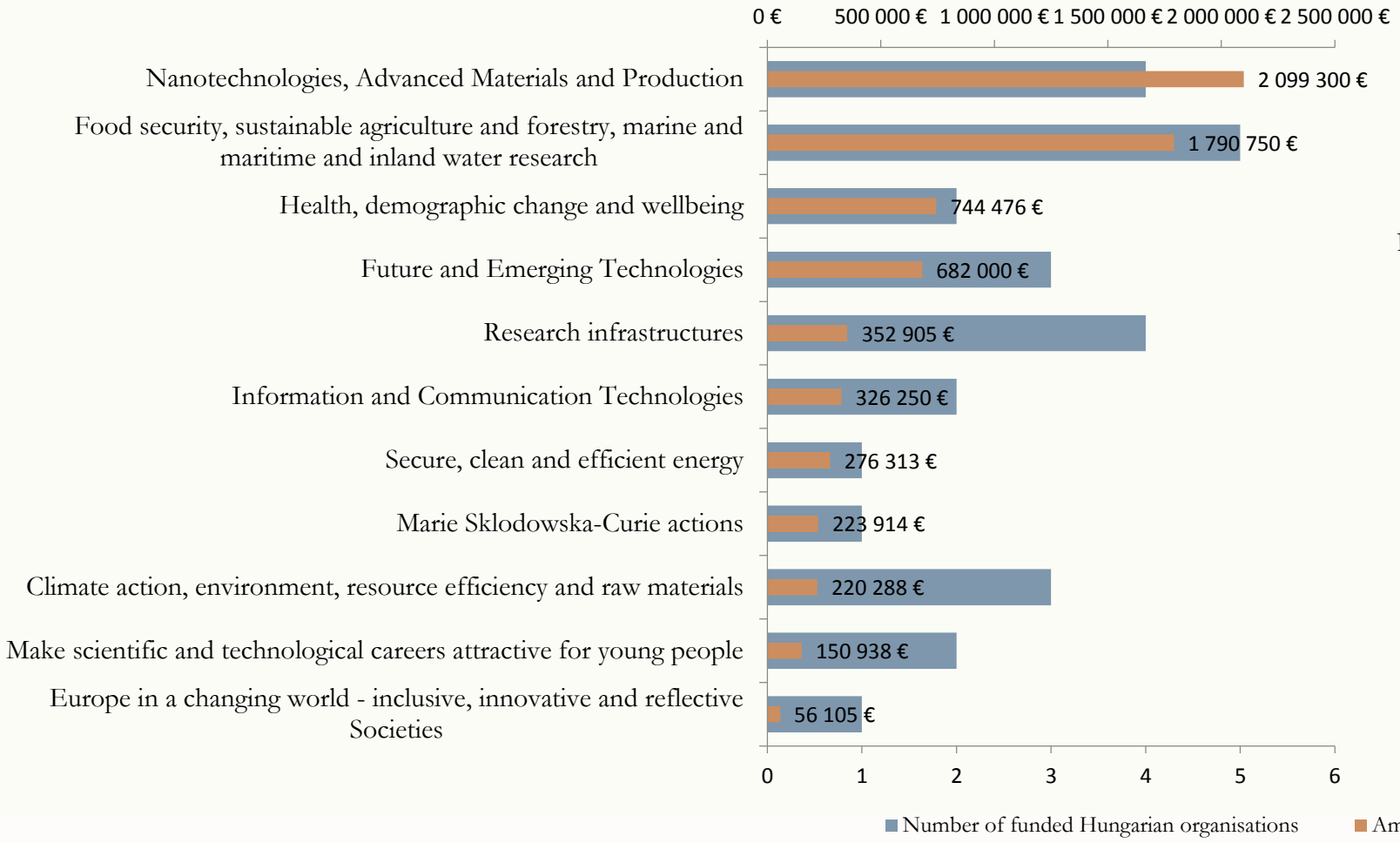
Supporting scientific excellence – ERC participation in H2020

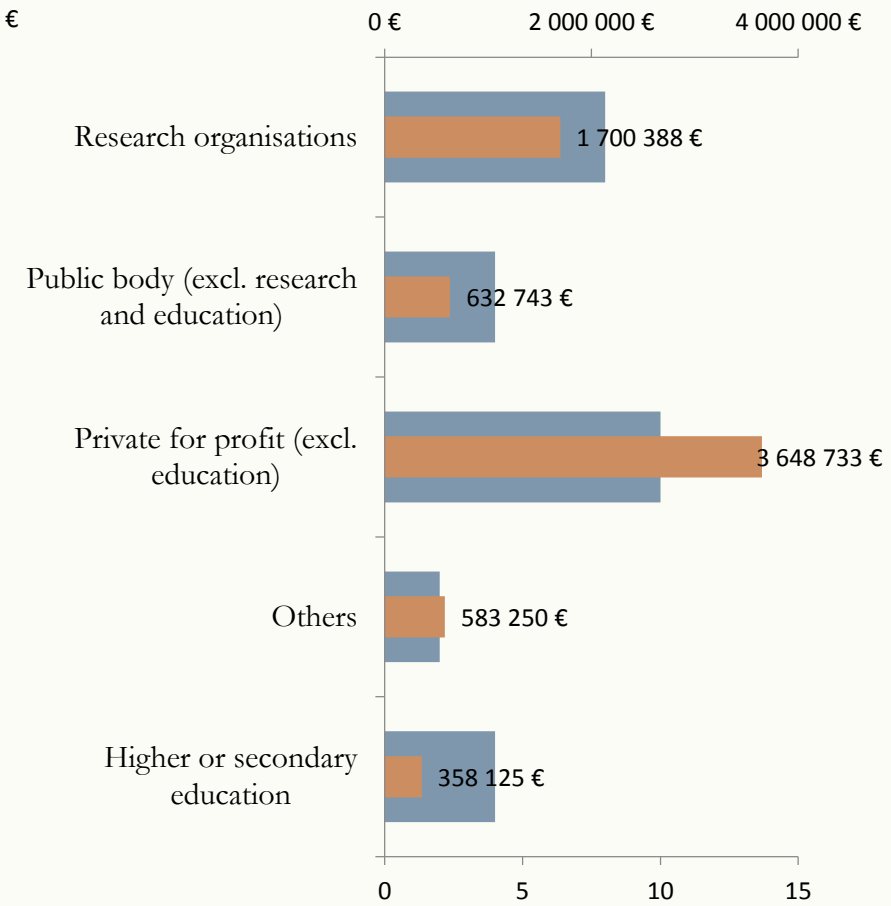


UK-HU Joint projects in Horizon 2020 – types of cooperating organisations



Hungarian – Cambridge cooperations (thematic areas and types of applicants)





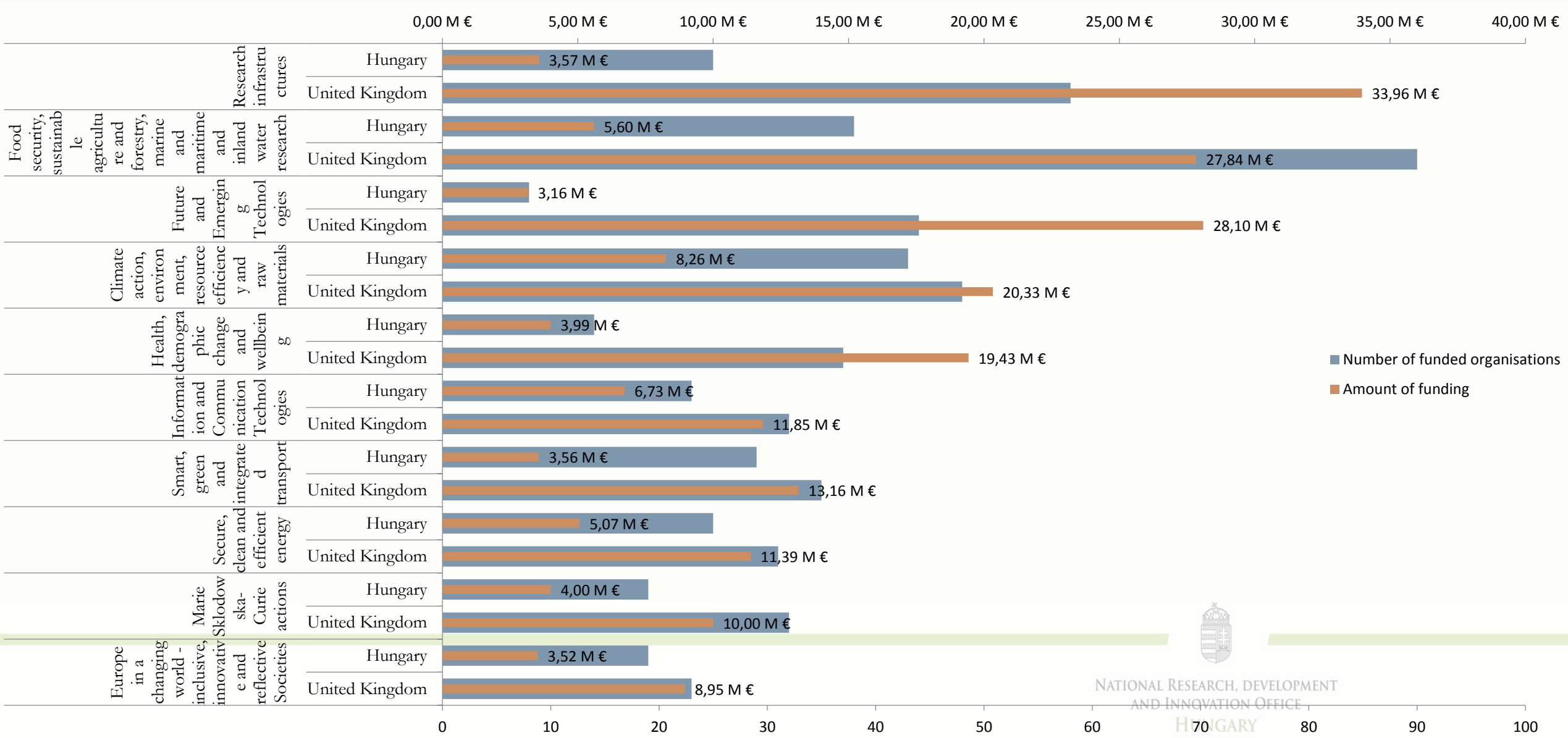
NATIONAL RESEARCH, DEVELOPMENT AND INNOVATION OFFICE
HUNGARY

THANK YOU FOR YOUR ATTENTION!

www.nkfih.gov.hu/english

NATIONAL RESEARCH, DEVELOPMENT AND INNOVATION OFFICE
HUNGARY

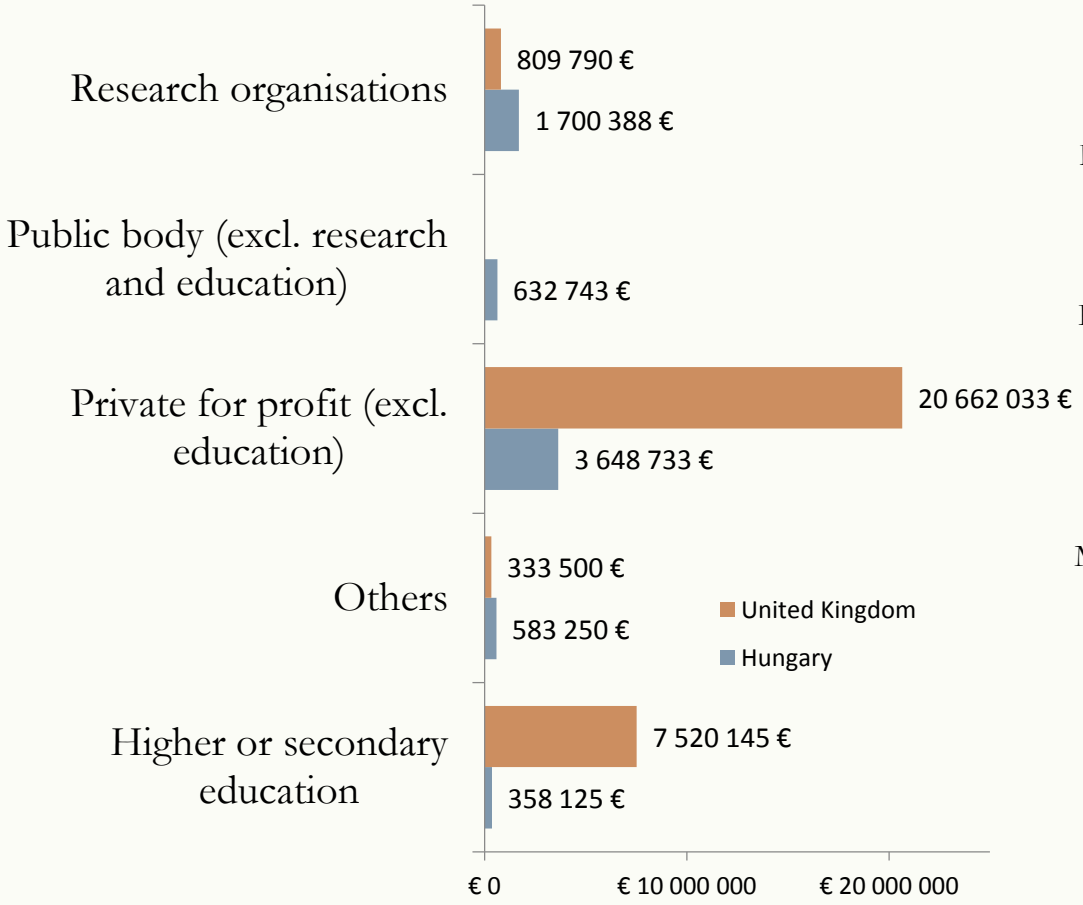
UK-HU Joint projects in Horizon 2020 – most important thematic areas of cooperation

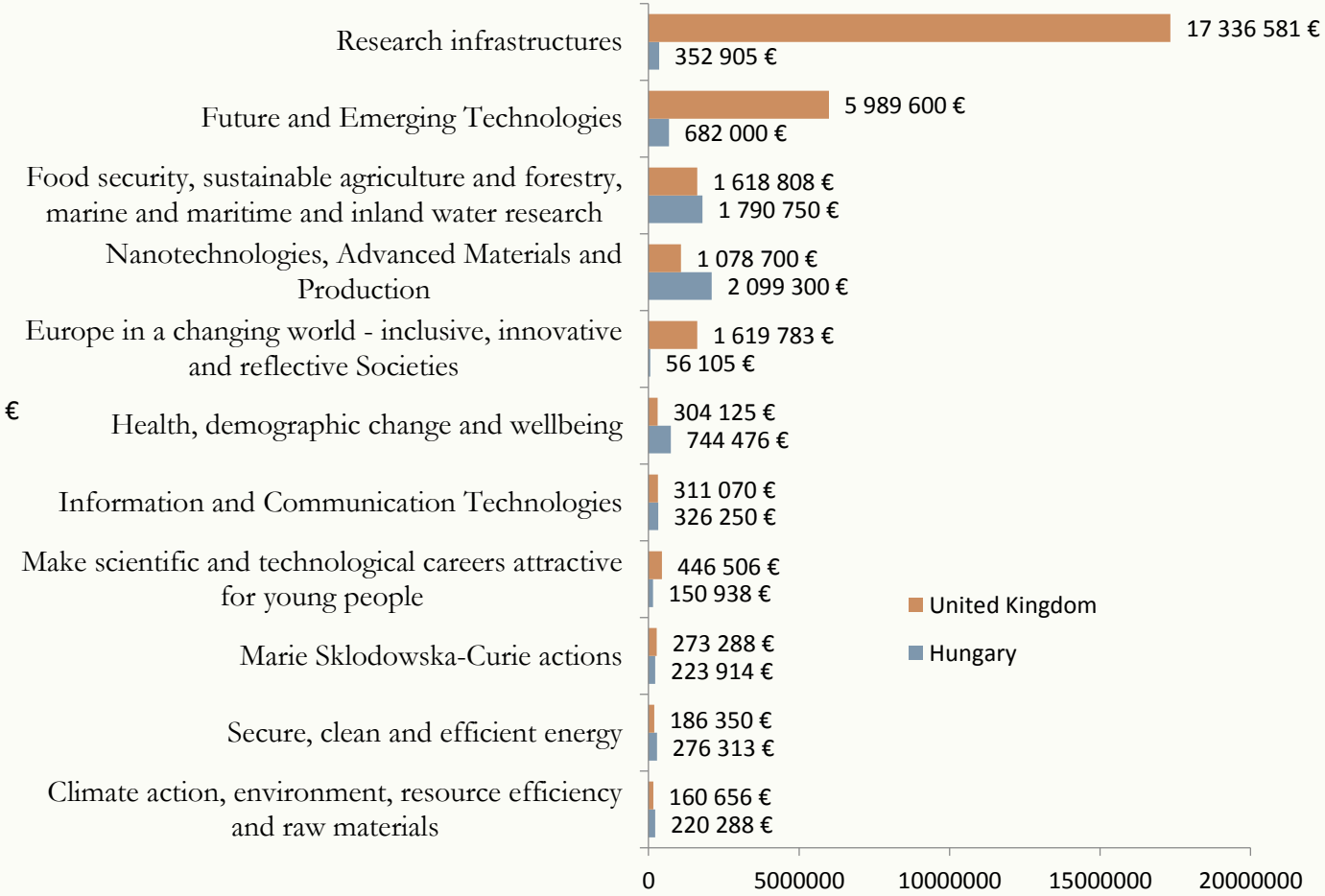


3. Supporting scientific excellence – ERC participation – most important topics in Hungary

3D acousto-optic two-photon microscopy, visual system, cortical processing, cell assemblies, uncaging, optogentics, 3D imaging, visual restoration, virtual reality
black hole physics, gravitational waves, nonlinear dynamical systems, Hamiltonian physics, mean field theory, active galactic nuclei, accretion disks, disordered systems, quenched states
developmental psychology, infant research, the development of reasoning
evolution of cooperation; reputation; gossip; social networks; signaling; honesty; agent-based models; experiments; schools; organisations
Graphene, 2D materials, Nanofabrication, Scanning Tunneling Microscopy
measured group theory, rank gradient, invariant random subgroups, homology growth, graph polynomials, local limit theorems, sofic entropy, graph convergence, cellular automata, locally symmetric space
Modern robust control, LPV model, model identification, targeted molecular therapy, antiangiogenic therapy
multilingualism, sign language, deaf, meta-linguistic awareness, multilingual ICT, SLACK software, South-South collaboration
Ottoman Empire; Confessionalisation; social disciplining; Sunnism; orthodoxy
Political communication, socio-computational systems
Synapse, transmission, trans-synaptic, adhesion, transcription, GABA, interneuron, RNAseq

Cambridge-HU Joint projects – distribution of funding amounts (types of applicants and thematic objectives)





Horizon 2020 results so far – Hungary – thematic