EaPEC 2018

3RD EASTERN PARTNERSHIP E-INFRASTRUCTURE CONFERENCE

Dynamics of participation of Moldova in European Programmes for Research, Development and Innovation: Future for Policy and Infrastructure

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Evolution of science

MOLDOVA

1946, Establishment:
State University of Moldova, Medical and Pedagogical Universities

Moldovan Branch of the Academy of Sciences of USSR

1961, Establishment:
Academy of Sciences of Moldova, including a network of scientific institutes

Disparity of knowledge paradigms

Socially oriented

Underperformed

Science & Technology

Policy incorporated

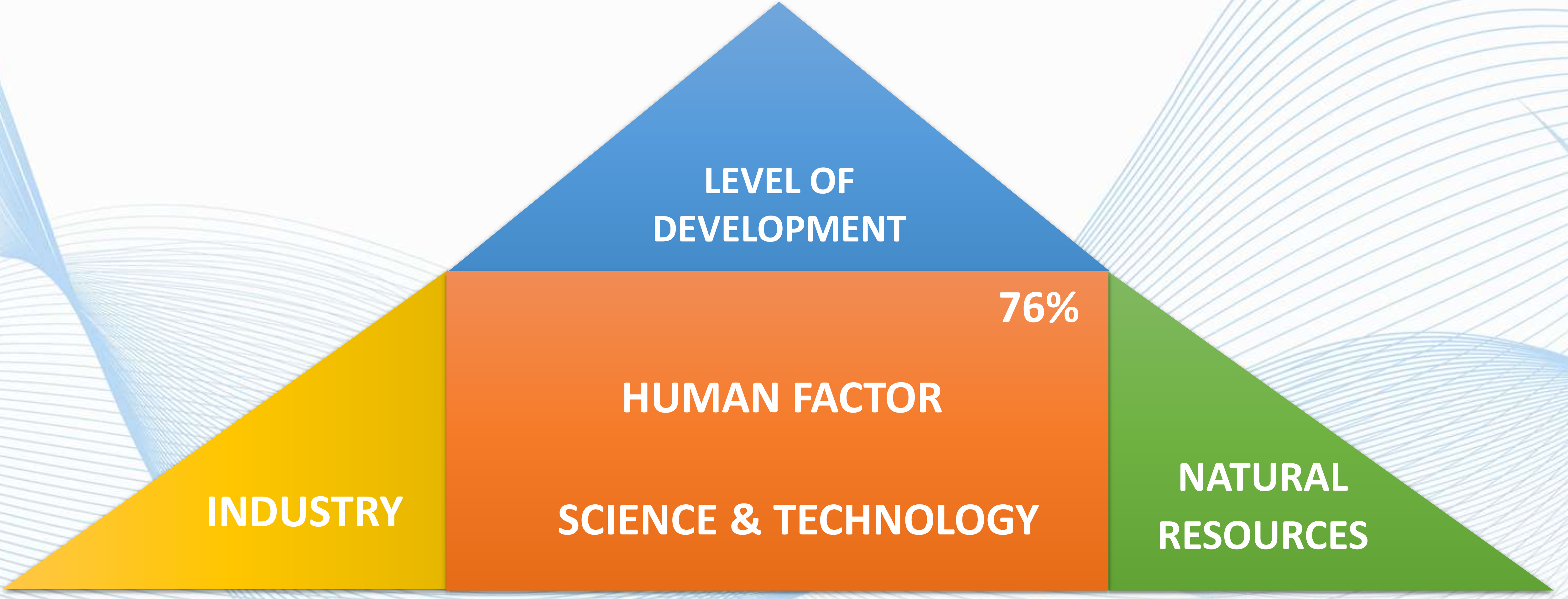
Source for growth and development

Effects of knowledge paradigm disparity

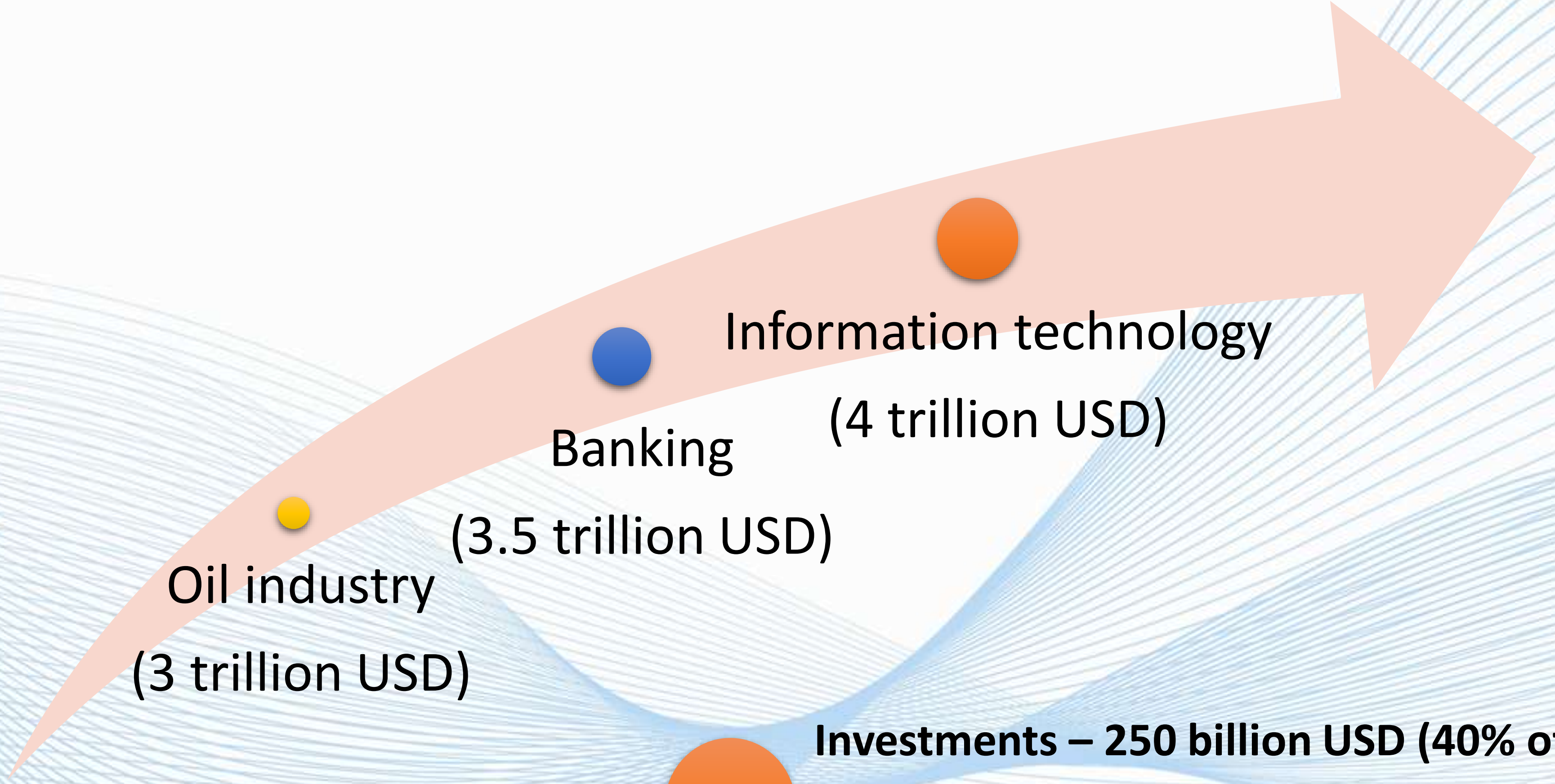
FOR MOLDOVA:

1990	2016
Researchers - **33000** Brain drain effect	Researchers - **3222**
PhD - **2260** Habilitate Doctors - 586	PhD – **1429** Habilitate Doctors – **441**
101 Scientific institutues, with independent research and no coordination to national priorities	**38** Scientific institutues, research based on national priorities aproved by Parliament

Science, technology and development



Economic perspective on science, technology and development



Investments – 250 billion USD (40% of World GDP)

Employed – 2.7 million researchers (35% of all researchers)

Approaches toward knowledge paradigms

Traditional approach	*Development, rational allocation and effective use of scientific and technical potential*	Russian Federal law on science and state scientific and technical policy
New approach	*Build a common space for science, in which knowledge can circulate freely – the European Research Area (ERA). In this system, knowledge is the currency of the new economy*	European Commission. A Reinforced European Research Area Partnership for Excellence and Growth

Approaches toward knowledge paradigms (2)

"Performance-based research systems have increased the research productivity of universities. There is a rising interest in universities as tools of the knowledge economy…" **J. M. Lewis. Research productivity and research system attitudes**

"The importance of a management is that it gives scientists the flexibility to pursue a serendipitous finding when they face the unintended and unexpected." **K. Murayamaa, M. Nireib, H. Shimizub. Management of science, serendipity, and research performance**

"As a response to competitive market forces and governmental steering policies, universities have strengthened considerably their internal research management in the last two decades." **M. Beerkens. Facts and fads in academic research management: The effect of management practices on research productivity in Australia**

Academies in the knowledge paradigm

TOP CIS ACADEMIES:

Russian Academy of Sciences – 76

Academy of Sciences of Moldova – 346

National Academy of Sciences of Ukraine – 369

National Academy of Sciences of Belarus – 3081

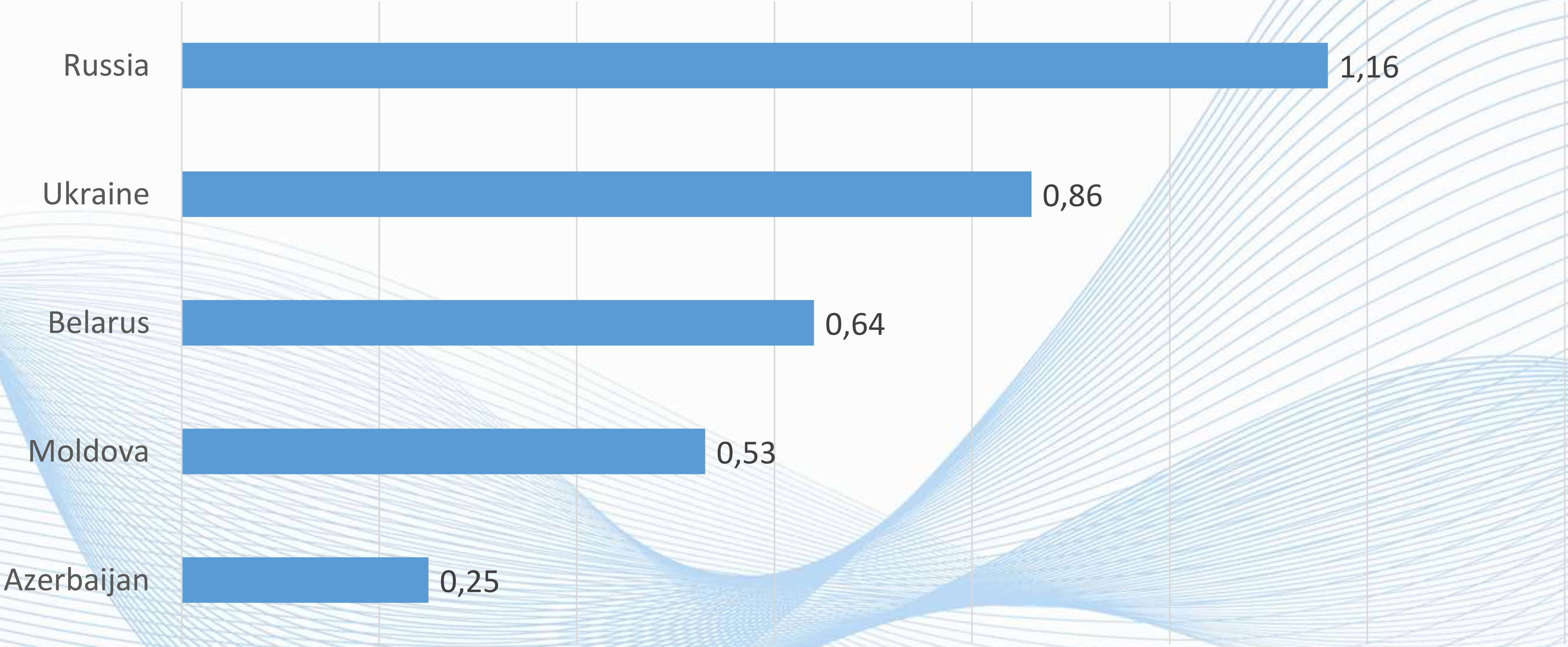
Azerbaijan National Academy of Sciences – 3374

Academy of Sciences of the Republic of Uzbekistan – 4826

Ranking Web (Webometrics) of Research Centers 2017,

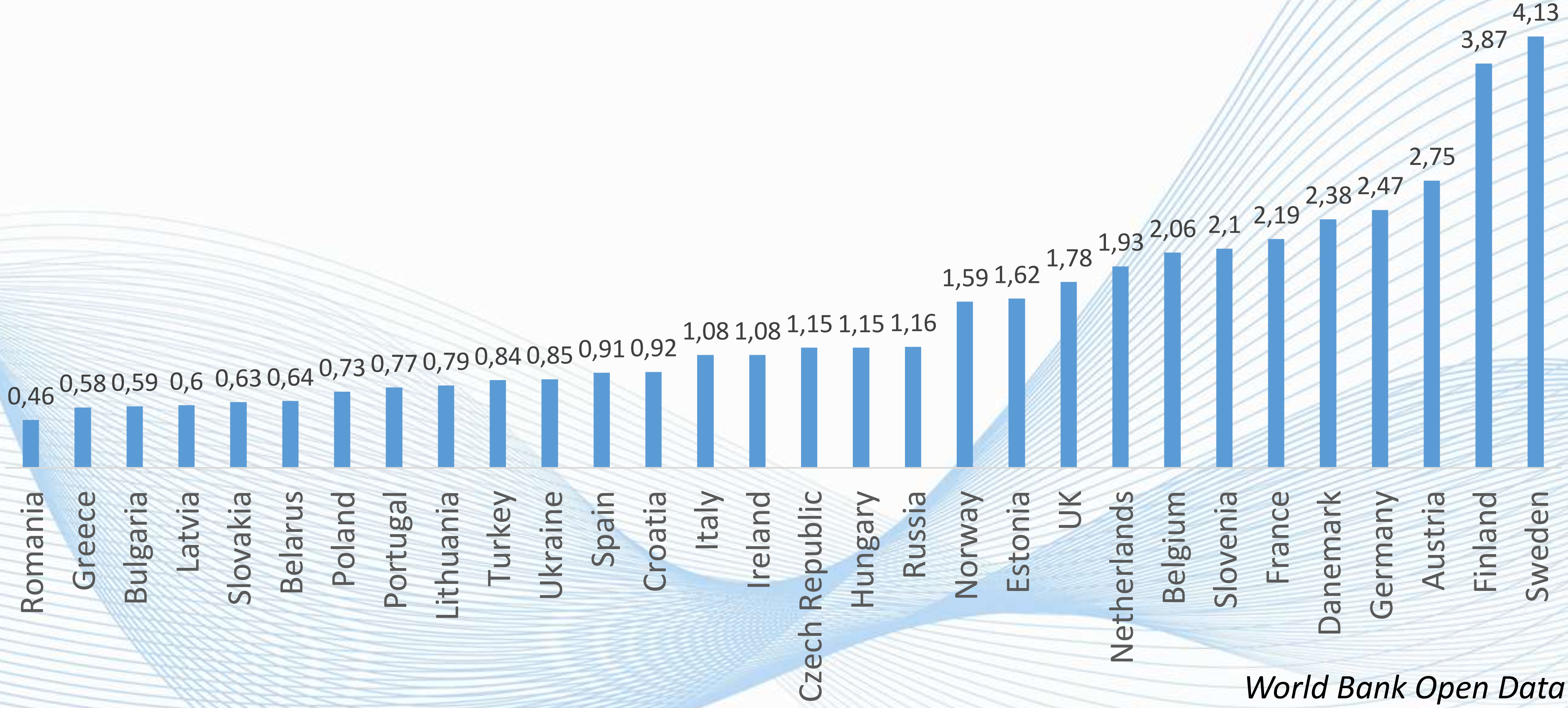
Superior Council of Scientific Investigations

Contribution to science and innovation from GDP (%) in select CIS countries, 2012



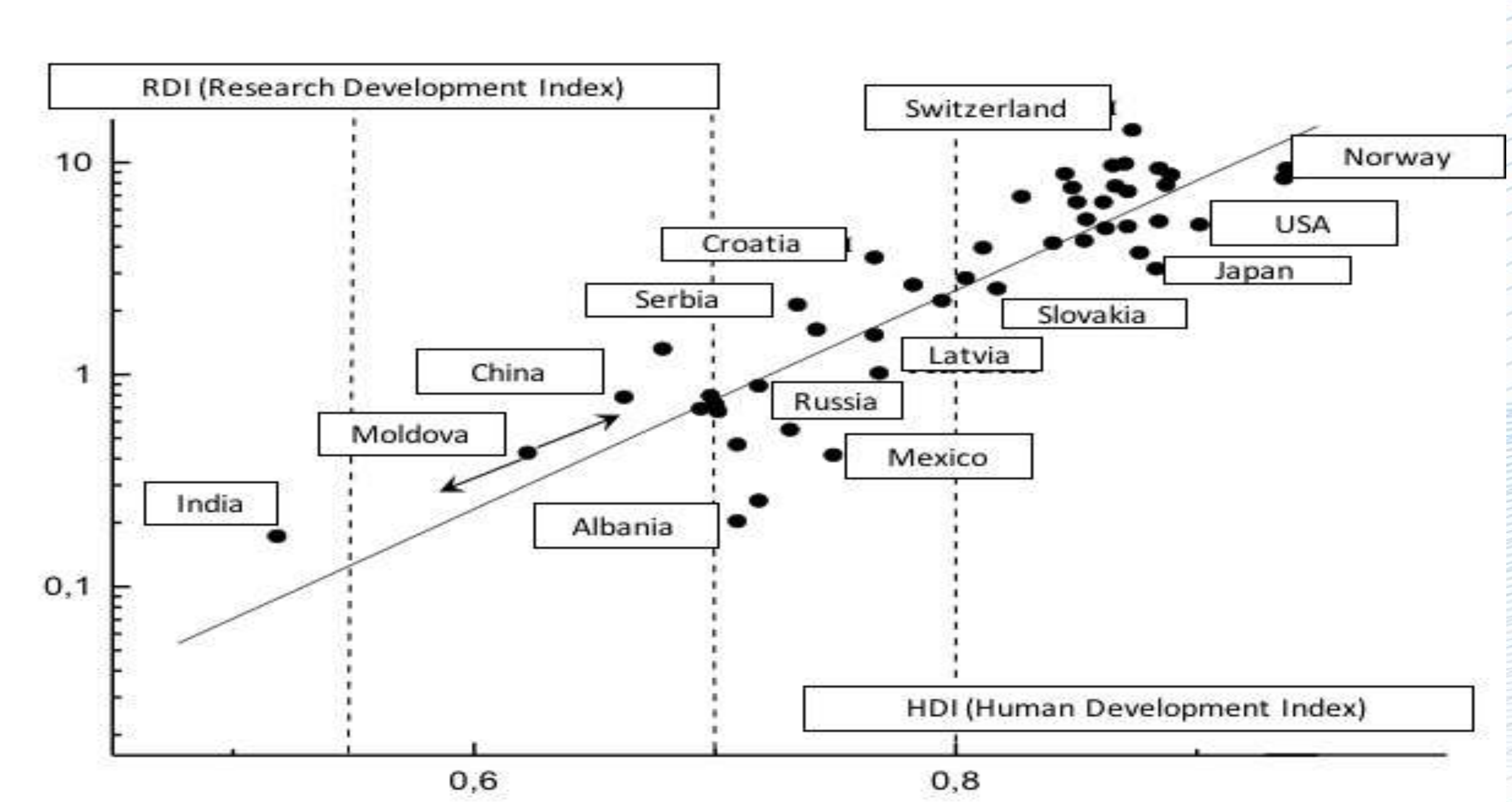
World Bank Open Data

Contribution to science and innovation from GDP (%) in Europe, 2012

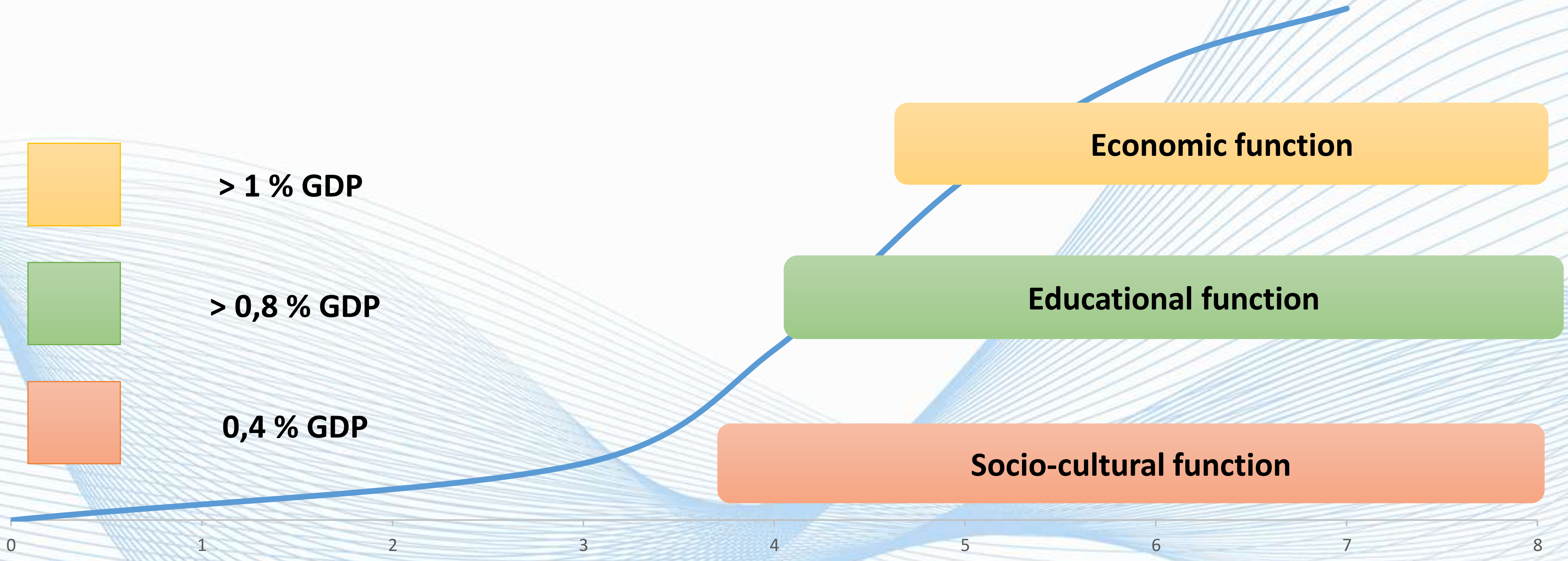


World Bank Open Data

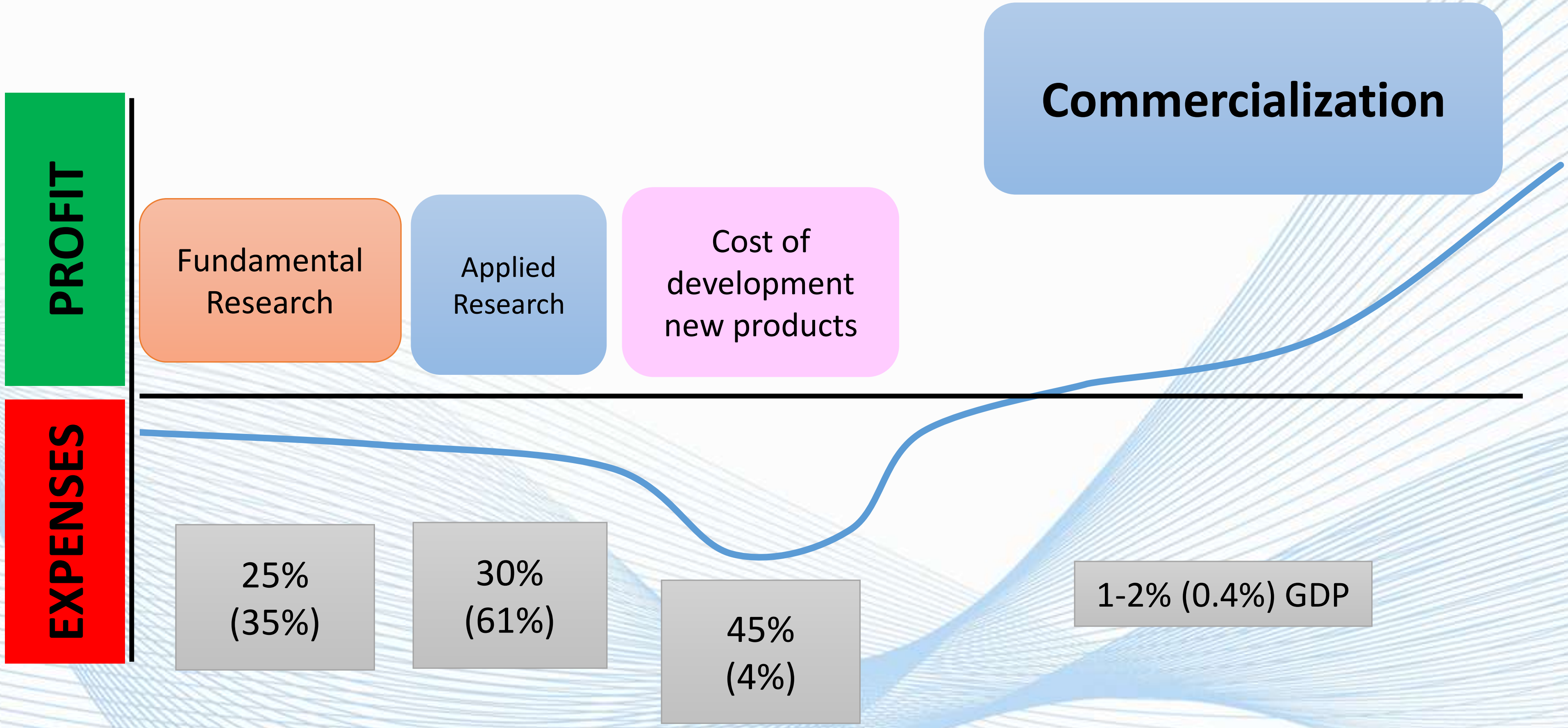
Correlation between the estimated Research Development Index (RDI) and Human Development Index (HDI)



Representation of the correlation between science funding and impact on socio-economic development



Representation of economic influence of science in Moldova



Bilateral cooperation of Moldova in science and technology, 2017

	2008	2009	2010	2011	2012	2013	2014	2015	2016	Number of projects	Total funding, mil. EUR
Russia	32	32	32	0	0	0	0	0	0	96	0.4
Ukraine	-	-	-	9	10	3	3	5	5	35	0.13
Belarus	8	8	10	10	-	6	7	8	7	64	0.36
Romania	-	-	12	12	-	10	10	-	26	70	0.57
Italy	-	-	-	2	2	2	2	5	5	18	0.11
Germany	-	10	10	-	-	2	3	3	-	30	0.31
STCU	-	-	6	6	6	6	6	6	-	36	0.24

Annual report of the Supreme Council for Science and Technological Development. 2017

Association to the 7th Framework Programme for Research and Innovation of the European Union

Association to Horizon 2020 Framework Programme for Science and Innovation of the European Union

Select Eastern Partnership countries performance in FP7, 2016

	GDP (USD, bil.)	Population (Total, mil.)	Science funding (% of GDP)	Science funding per mil. population	FP7 project proposals	FP7 projects awarded	Success rate (%)
Azerbaijan	67.197	9.297	0.24	2.6	143	24	16.78
Georgia	15.829	4.511	0.17	3.7	305	69	22.55
Ukraine	176.308	45.593	0.85	1.8	1402	271	20.23
Moldova	7.254	3.559	0.40	1.1	337	58	20.23

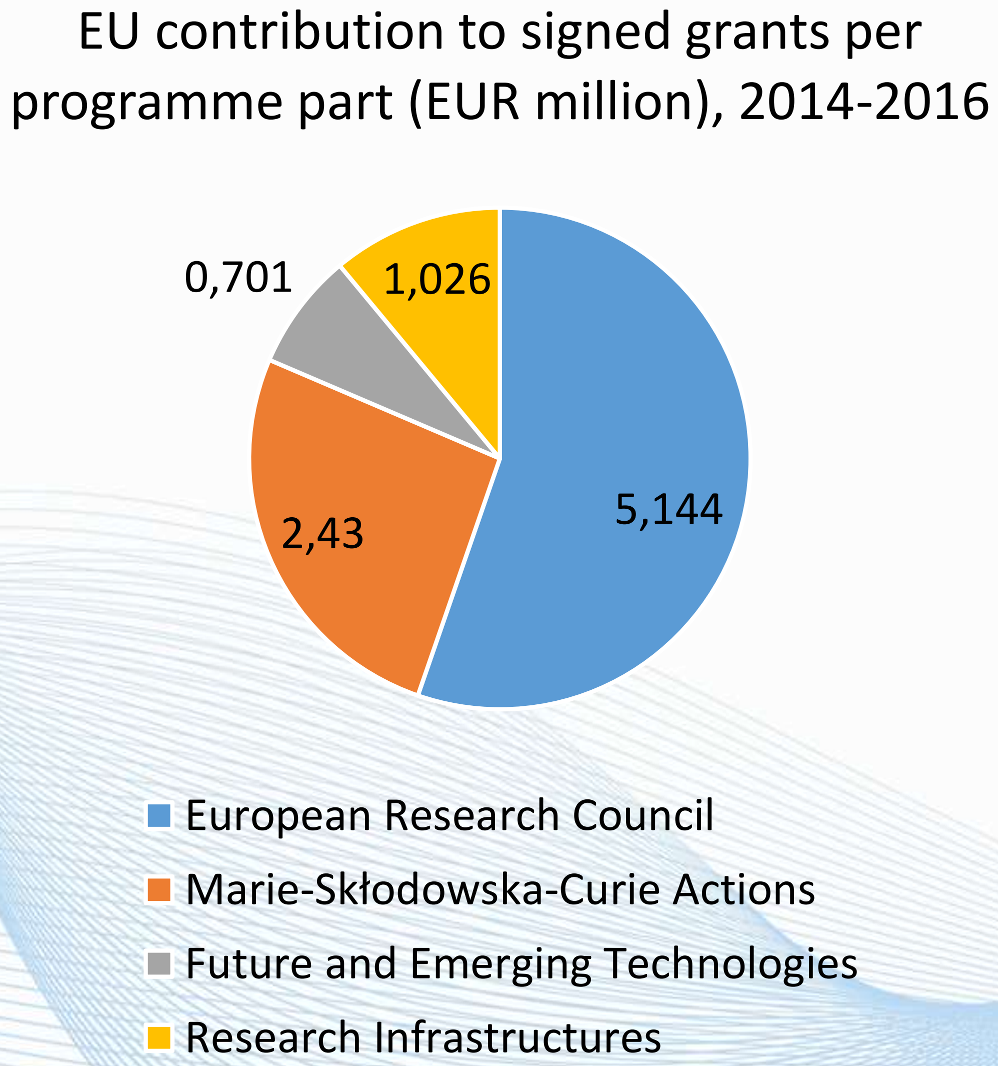
Participant Portal H2020 Proposals. European Commission

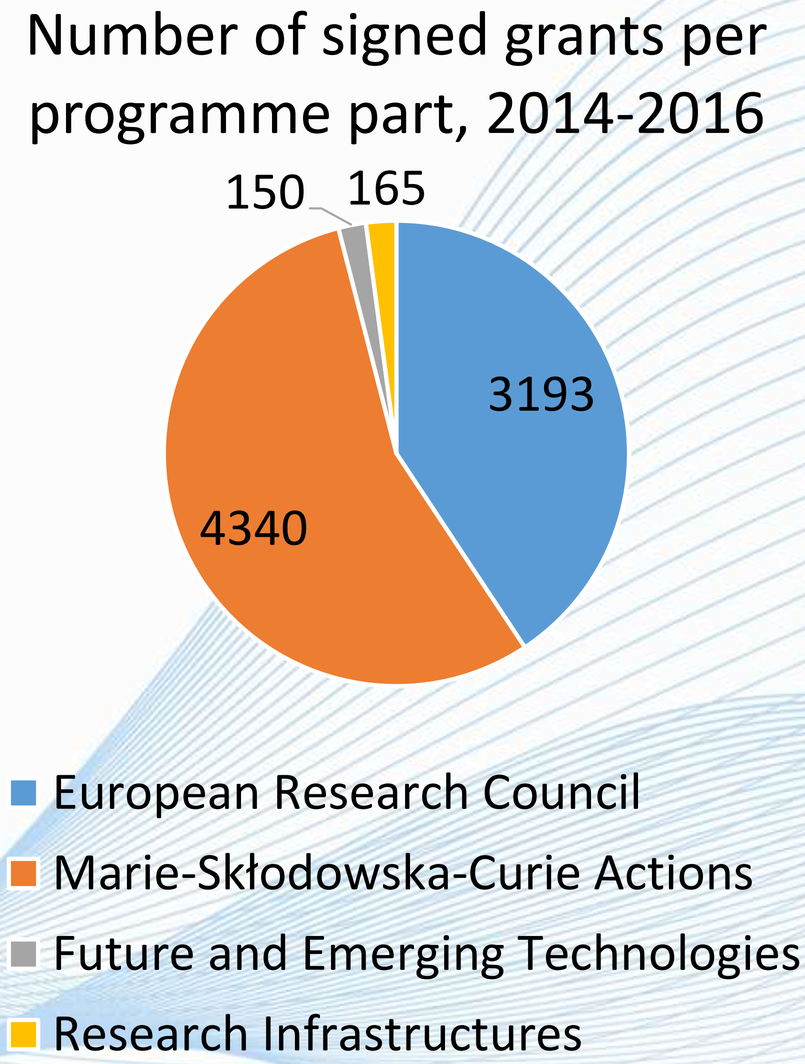
Select Eastern Partnership countries performance in EU Research and Innovation Programme Horizon 2020 (H2020), 2017

	Applications	Eligible proposals	Retained proposals	Requested EU contribution (mil. EUR)
Azerbaijan	51	49	8	5.56
Georgia	224	187	21	34.03
Ukraine	1276	986	131	344.52
Moldova	322	268	32	69.44

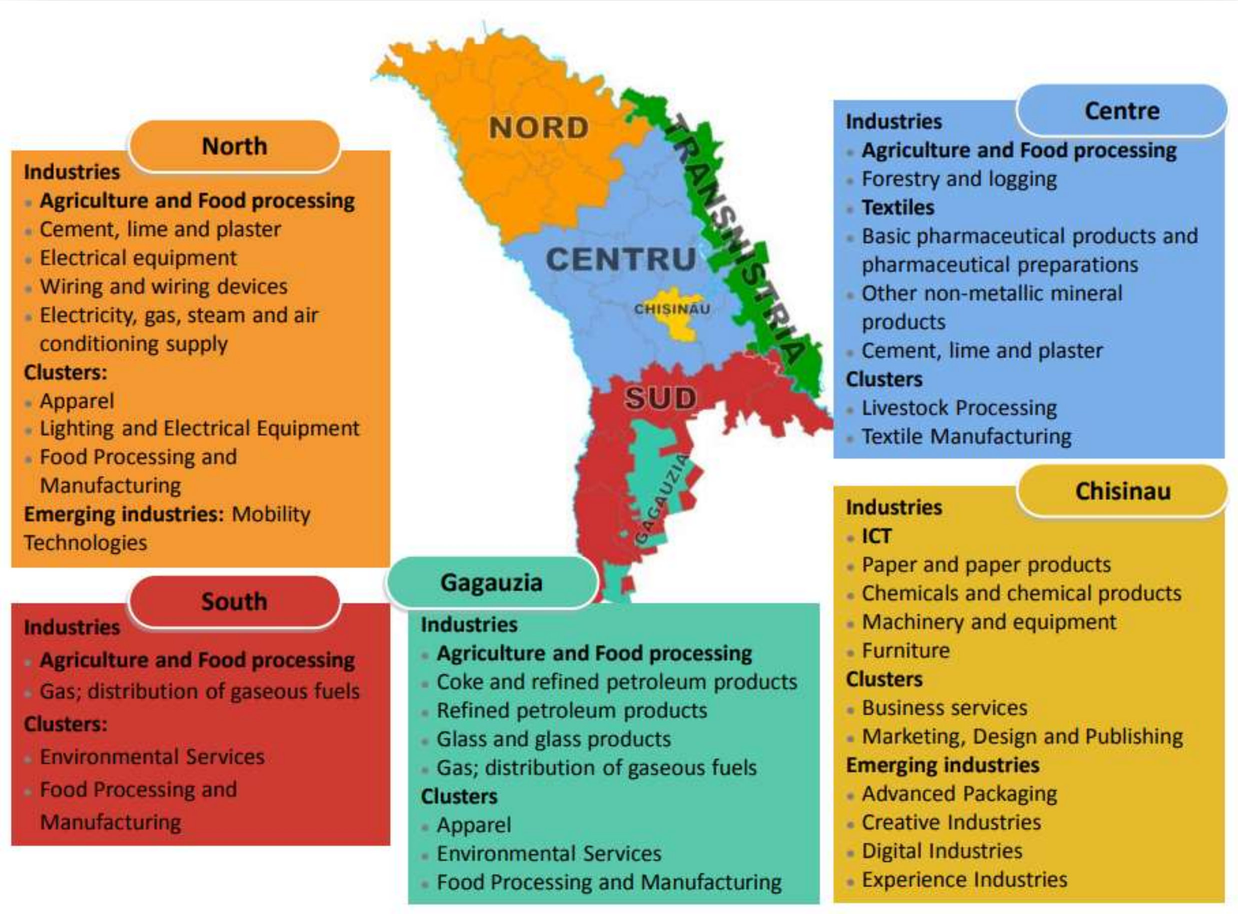
Eastern Partnership performance in H2020

Research Infrastructure as part of H2020





S3 Priorities prior to EDP



Chisinau ICT is the most important economic area

For North, Centre, South and Gagauzia comparable priority areas for smart specialisation have been identified.

For all four regions Agriculture and Food processing are very important, but there are some differences as to which specific industries are included. Textiles, Apparel, Footwear and Leather (TAFL) and Renewable energy are also priority areas for smart specialisation in several of these four regions.

Summary of the report "Mapping of economic, innovative and scientific potential in the Republic of Moldova" prepared by Hugo Hollanders

Future research and innovation priorities of Moldova

Vertical priorities:

1. **Life Quality and Security** (energy, seismic and construction security, health, soil, water, biodiversity, climate change, protection of environment, agrifood)

2. **Emerging and Future Technologies** (mathematics, IT, chemistry, physics, nanotechnologies)

3. **Knowledge society and creative industries** (education, law, culture, national heritage)

Horizontal priorities:

1. Investment in intellectual capital
2. Investment in internationalization of research
3. **Investment in construction and access to research infrastructure (including e-infrastructure)**

The future of science as a driving force for the socio-economic development

UNESCO’s 2015 Report on the State of Science - ***Sustainable development cannot be achieved without science***

Conclusion

While promoting science as a driving force for sustainable development, it is clear that standalone efforts oriented towards influencing socio-economic development are proven insignificant, unless a high degree of scientific and technological cooperation is fostered.

Thank you for your attention!