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North-East RDA, Romania (PP5)

iWATERMAP
Interreg Europe

Simona Popa

iWATERMAP Kick off meeting,
Leeuwarden, September 2018

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North-East Regional Development Agency

Commitment to smart economic development

Vision

- To change the regional economic situation and become, through smart innovation and specialization, a leading "leading region" in Europe

Objectives

- Developing entrepreneurial skills and mentality based on talent and creativity
- Smart and efficient use of regional resources
- Increasing innovation and TT, co-operation between companies and the R & D sector
- Find solutions to societal challenges together with Q4 representatives
- Encouraging networks and associations related to development
- Increasing region attractiveness for investors and tourists

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What is the RIS3 topic?

RIS3 North-East Structure (1st Edition, 2014)

Vertical domains RIS3

- **Agro-food**
- **Textile & Clothes**
- **IT&C**
- **Biotechnology**

Horizontal priorities

- **Developing innovation competences for future generations**
- **Supporting Innovative Enterprises in the North-East Region**
- **Supporting clustering and internationalization initiatives**
- **RIS3 governance and regional administrative capacity building**

RIS3 North-East
Update & review 2016-2017

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Data collection and processing
(June-August 2016)

- Updated regional profile
- 7 Sectorial case studies
- 5 good practice examples

Identification of sectors with specialization potential
(June-August 2016)

- Agrofood
- Wood processing and furniture
- Biotechnologies
- Environment
- Textiles and new materials
- Tourism
- IT&C

Defining directions of specialization
(June-October 2016)

- Analysis of regional innovation potential
- Identification of competitive and comparative advantages
- Identification of regional competences
- Identification of major societal challenges
- Mapping the value chains
- Organizing entrepreneurial discovery workshops (EDP)

Development of RIS3
(October –December 2016)

- Vision, mission, values
- Objectives
- Priorities, measures, types of projects
- RIS3 Matrix Structure
- Consultation of BDRWG and clusters
- Feed back from universities
- Public consultation

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RIS3 North-East Structure (2nd Edition, 2017)

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Vertical domains RIS3

Agro-food	**Textile & New materials**	**IT&C**	**Biotechnologies**	**Health & Tourism**	**Energy & Environment**

Horizontal priorities

Developing innovation competences for future generations	**Supporting Innovative Enterprises in the North-East Region**	**Supporting clustering and internationalization initiatives**	**Technical assistance**

Agro-food	Safe, affordable and nutritionally optimized foodstuff Bio-based industries (food and non-food products for food processing industry)	Development of new products, practices, processes/ technologies in horticulture and zootechnics Sustainable farming 2nd and 3rd harvest New business models for traditional products	Bioenergy - biogas, biomass, biofuel Eco-building - processing of hemp (construction panels for natural houses)	Blue biotechnologies (for sustainable management and exploitation of aquatic living resources and potential)
Textile & new materials	Innovative materials, bio-materials and functional textiles for medical purposes	Circular economy Cultivation and processing of plants for natural fibres and eco-fabrics (eg. constructions) Technical textiles, composite textile structures	High-tech processes & applications, industrial software Smart factoring Digital fashion/Digital printing	Smart textiles (for high performance water filtering purposes)
IT&C	Big Data analysis, management and security (telemetry, telematics, tele-assistance, telemedicine) Real time monitoring of social systems - eHealth	Traceability of food (value) chains and quality control (IT&C solutions) Precision agriculture (site specific crop management) Smart farms	Increasing energy efficiency of consumers; Energy-Net (energy efficiency management system) Smart City Energy security	Gamification of education
Biotechnology	Bio nano-technologies for use in medicine Medical and Pharma bio-natural products Bioengineering of rehabilitation Medical Bioengineering	Agrofood Biotechnologies (for safe food and sustainable production)	Industrial biotechnologies (high-energy biofuels, biocatalysts for industrial applications)	Bio-oriented environmental technologies (real-time specific detection / monitoring of pollutants)
Health & Tourism	Active and adventure tourism Health and recovery tourism Healthy ageing tourism / Cultural tourism	Agro-tourism; eco-tourism Slow-food tourism Organic & traditional products	Efficient infrastructure (EE buildings) Traditional technologies and new materials	Curative waters (natural waters, aquatic sports)
Energy & Environment	Biodiversity Plants Genetics Green heritage sustainable management	Rational exploitation agricultural renewable resources (new or improved) Developing sustainable crops (adapted to the impact of global climate change)	ZEB Waste collection and valorization (up-cycling)	Pollution and water recovery technologies Industrial water monitoring, water management (surface and underground)
Societal challenges	**Healthy ageing, demography and wellbeing**	**Food security, sustainable agriculture and bio-economy**	**Secure, clean and efficient energy**	**Safe and clean water**

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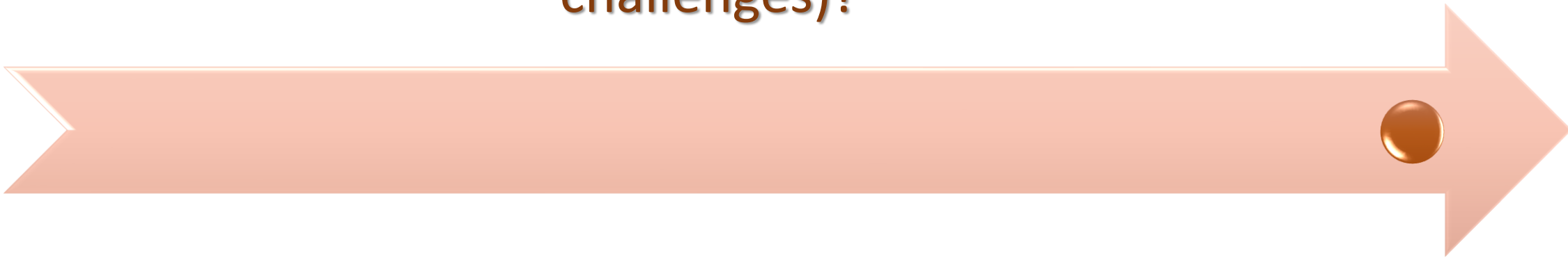
What are regional challenges in this field (goals/ challenges)?



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Challenges at regional level: Environment

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- Implementation of **environmental protection legislation** - meet the targets assumed by European level
- Insufficient development of **environmental technologies and management tools**
- **Lack of correlation and support framework** for labor market demands (employer) with the specialists training (universities) regarding the development of practical and entrepreneurial abilities
- Facilitating access to **environmental funding sources to prevent pollution and control pollution at source** by closing value chains
- **Business Innovation**: Strong necessity for changing the way of developing, organizing, conducting and evaluating industrial activities / services / trade activities in the sense of **improving the environmental performance production processes**
- Lack of an **organizational framework to facilitate collaboration / communication** between stakeholders in the development of the NE region - **Limited inter-institutional cooperation**
- More than 60% of the NE rural pop. is not connected to water-sewage services (wastewater treatment and purification, there are no alternatives implemented for recirculating wastewater treated in industry, agriculture and services) - **Health risks to the population, increasing pollution degree**

Challenges that wanted to be solved at project level: Environment / Water

- The sludge from the WWTP is treated as a waste and not processed
- Increase know-how on circular economy in the water field
- Development of **environmental technologies and management tools**
- Retain talents in the region
- **Water reuse and recirculation in different industries** (water minimization in the production process) **and agriculture**
- Climate change adaptation (water distribution during drought, need for water retention in periods with intense rainfall, etc.))
- **Cluster / Association**

CLUSTERIX 2.0
Interreg Europe

Tourism Regional Cluster/Bucovina Tourism Association

BUCOVINA
ASOCIAȚIA PENTRU TURISM BUCOVINA

Cluster Management Excellence
28 Sept. 2016

The Constructors Guild of Iași

BREASLA CONSTRUCTORILOR IEȘENI

Cluster Management Excellence
2 Oct. 2016

NO Environmental Cluster Water / waste / Circular econ.

ICONIC
Interactive Cluster of New-media Industry City of Iași
be & share

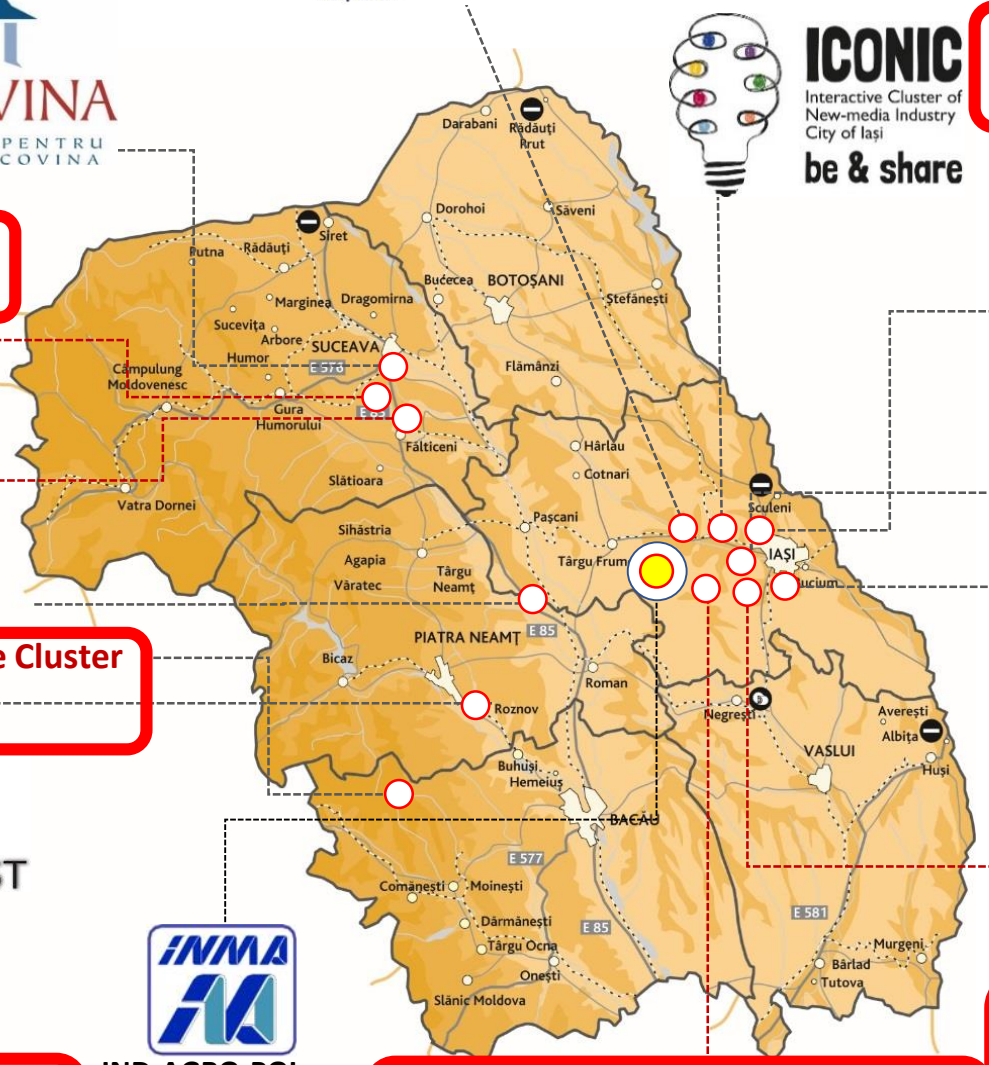
Interactive Cluster of New Media Industry, City of Iasi

bioROne

Cluster Management Excellence
30 Sept. 2016

Regional Innovative Cluster of Bio-economy Suceava-Botosani
(20 Oct. 2016)

The Biotech Cluster in North East Romania



Wood Cluster of Bucovina
(31 May 2017)

iMAGO-MOL
Clusterul Regional Inovativ de Imagistica Moleculara si Structurala Nord-Est

Cluster Management Excellence
15 May 2016

Tinutul Neamtului Cluster
(2017)

Cluster Management Excellence

North East Regional Innovative Cluster for Structural and Molecular Imaging

BioNest: Regional ecological agriculture Cluster
(2018)

EURONEST ICT-Cluster

Cluster Management Excellence
11 Jan. 2017

Textile Cluster ASTRICO North-East

ASTRICO NORD EST

Cluster Management Excellence
Aug. 2017 (R)

Innovative Regional Cluster EURONEST IT & C Hub

INMA

IND-AGRO-POL

Cluster Management Excellence
Jan. 2016

IND-AGRO-POL competitiveness pole (innovation Cluster) – Regional represented in Iasi city branch

Cluster for animal husbandry and agriculture "Agro-ferma"
(May 2017)
BT, IS, VS counties

Regional Cluster of Research, Innovation and Technology Transfer in Agriculture and Food Safety (CITTASA)
(Jan. 2016)

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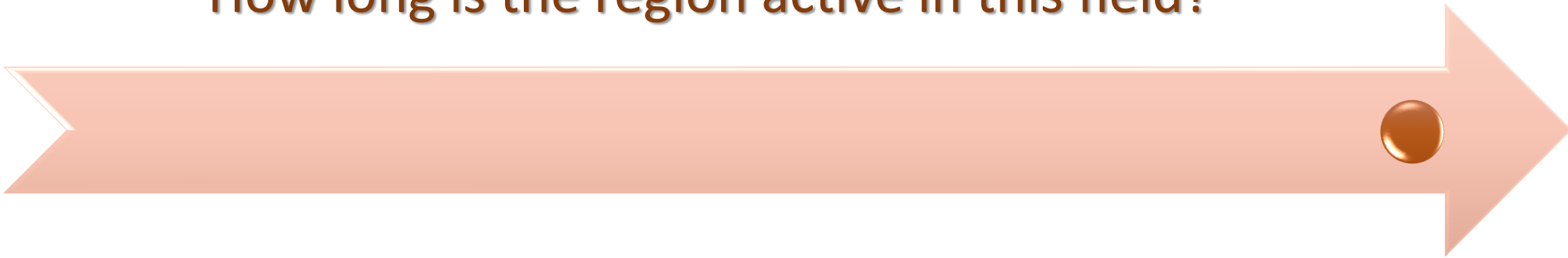
How long is the region active in this field?



Introduction to our region's work on research and innovation

- **Previous RDA North-East experience**:

– Between 2005-2008, North-East RDA developed the **first Regional Innovation Strategy of North-East Region** (**FP6 SSA RIS Project**)

– Promotion and participation in international projects dedicated to regional innovation system support

- At national level, there was **only one other region** (**2 out of 8**) with regional smart specialization strategy under preparation (Region West);
- Initiating the National Innovation Platform and participating in the national consultation process for the elaboration of the «**National Strategy on Research, Technological Development and Innovation 2014-2020**»;
- Weak **coordination between national and regional** level.

Introduction to our region's work on research and innovation

- **North-East Region S3** was elaborated during **2013** under North-East RDA coordination (project financed under **Operational Program Technical Assistance 2007-2013**)

Main activities:

- Analysis of the regional context
- Analysis of the regional innovation potential
- Identification of the potential smart specialization sectors
- Identification of the main barriers and solutions for sector development
- Definition of the vision on the region's economic specialized development
- Establishment of the strategy priorities

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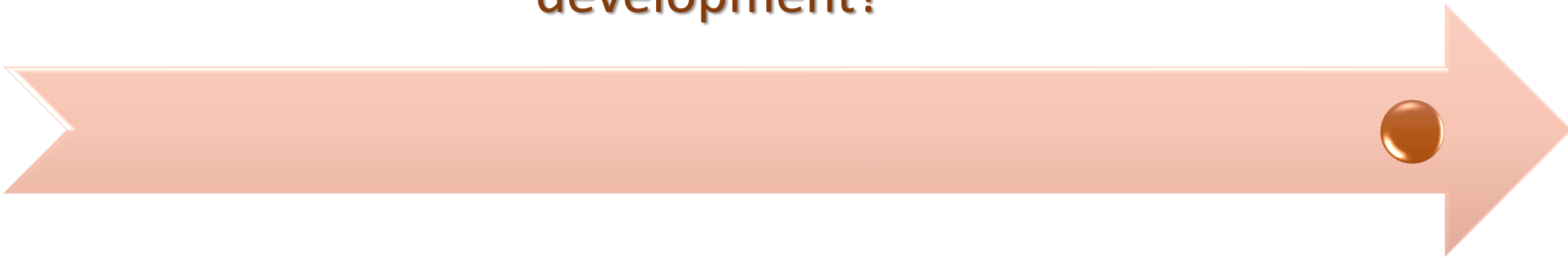
Which programmes have been supporting this development?



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RIS3 project portfolio development

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Total proposals collected = 129 projects
Estimated Budget = 233,64 mil Euro
! 4 calls of proposals in ROP with 60,4 mil Euro (FEDR+NB)
Total proposals 2018 = 39; Estimated budget 88.6 mil Euro

Identifying solutions for smart specialization

9 EDP workshops 2016-2017

(**Agrofood-2, Textile-2, ITC -2, Biotechnologies-2, Environment-1**)

1 PDL workshop 2017
Mapping sectoral value chains
98 interviews - 2017

Regional call proposals RIS3 projects

(Project fiches & Intention Letter Axis 1 ROP)

36 Letters of Intend - 2017

93 Project Fiche – 2018

39 project fiches -2018

Assessment of financing sources for RIS3 projects

36 - projects ITT, Axis 1 ROP

60 – simple projects, other OP

33 –integrated/ strategical projects with no financial sources (**PA1.2 ROP)**

39 pending assessment!

Maturation, prioritization and implementation of RIS3

Guideline for detailing PFs

Confirmation of support from legal representative

Assistance to project promoters

Preparation of the specific Guidelines

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RIS3 criteria for project selection

ROP	Priority axis 1 and 2 (TT, innovation and SMEs support)
POCU 2020	Bio-economy, IT&C, eco-nano and advanced materials
	Sectors with competitive potential as tourism, wood and furniture, etc.
POC 2020	Bio-economy, IT&C, eco-nano and advanced materials
POC RO-UA	Priority axis 1.2 (support for research and innovation) – BT and SV eligible
POC RO-UA	Priority axis 1.2 (support for research and innovation) – IS and VS eligible plus Suceava, Piatra Neamt and Bacau major urban centers
INTERREG 2020	Priority axis 1 Strengthening research, technological development and innovation
Danube 2020	Priority axis 1 – Innovative and socially responsible Danube Region
Horizon 2020	

Investment programs for water sector

*An important role in ensuring the development of the field was made by the **investments**. Between 1995 and 2015, several investment programs were carried out at national level, of which **ISPA** and **SOP ENV** (POS MEDIU) have the **highest values**.*

MUDP program (**Danish Eco-Innovation Programme - Municipality utilities development programme II - M.U.D.P. II**) - investments in large municipalities, finalized in 2002 (*Rehabilitation of water-wastewater infrastructure*);

ISPA Program (**Instrument for Pre-Accession Structural Policies**): 2001 – 2011 (*Bringing water-wastewater infrastructure to EU requirements*);

Projects financed under the **SAPARD** program (**Special Pre-Accession Program for Agriculture and Rural Development**) or through governmental programs in rural areas (*Water resources management for agriculture*);

Implementation of **PNDR** (**Rural Development National Programme**) in five counties: 2003-2007 (*Improvement of local infrastructure: water supply systems, sewage systems*);

The **SAMTID** Program (Multi-Annual Scheme for Financing of Water Infrastructure Rehabilitation Projects in Small and Medium Sized Cities) in ten counties (*50% will be provided by non-reimbursable funds granted by the EU through the Phare 2002 program and the Romanian Government.*

SOP ENV (POS MEDIU - The Sectoral Operational Program Environment is the document establishing the strategy for the allocation of European funds to the environment sector) **Program**: 2007 – 2013 (*Priority Axis 1 - Extension and modernization of water and wastewater systems*);

POIM Program (**Operational Program Big Infrastructure**): 2014-2020 (*3.2 Increasing the level of collection and treatment of urban wastewater as well as the degree of assurance of drinking water supply to the population*)

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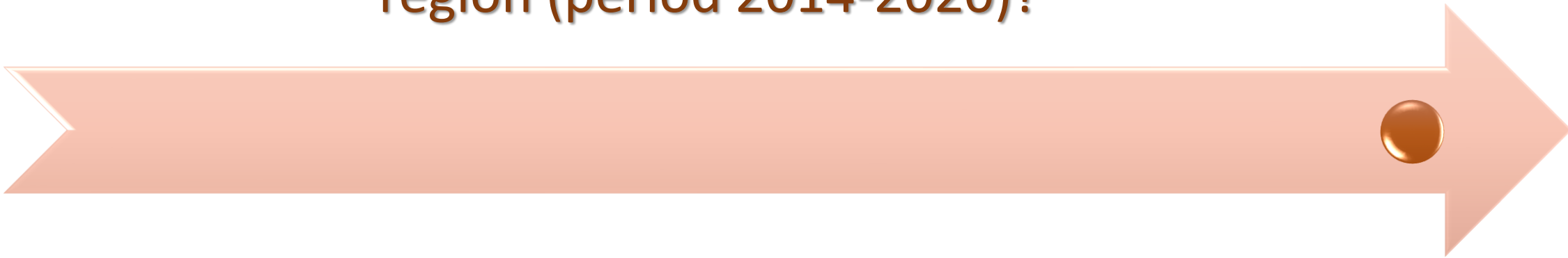
Are there active or concluded research projects in the region (period 2014-2020)?



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RDA North-East Projects
~ on-going ~

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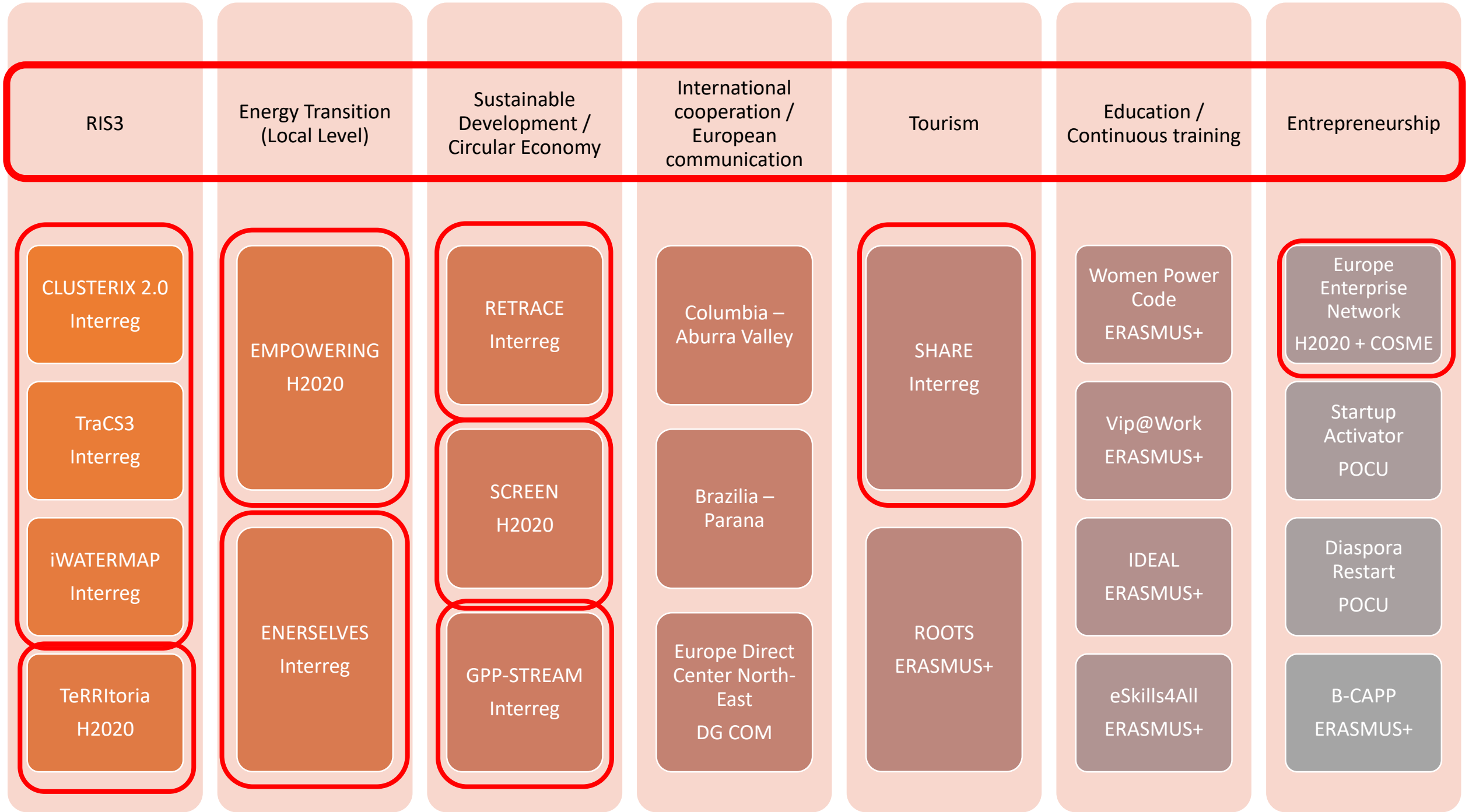
- 2 international cooperation programs
- 18 external projects
- 2 national projects (de minimis help available: about EUR 1.75 mil)
- 37 people involved with different percentages (management & technical, communication, financial)
- Implementation period between 2016 and 2023 (duration between 2 and 5 years)
- Total budget for North-East RDA: approx. EUR 2,85 million (co-financing rate 0-50%)
- 4 new contracts to be signed (approximately EUR 120,000)


RIS3
Energy Transition (Local Level)
Sustainable Development / Circular Economy
International cooperation / European communication
Tourism
Education / Continuous training
Entrepreneurship
CLUSTERIX 2.0 Interreg
TraCS3 Interreg
iWATERMAP Interreg
TeRRItoria H2020
EMPOWERING H2020
ENERSELVES Interreg
RETRACE Interreg
SCREEN H2020
GPP-STREAM Interreg
Columbia – Aburra Valley
Brazilia – Parana
Europe Direct Center North-East DG COM
SHARE Interreg
ROOTS ERASMUS+
Women Power Code ERASMUS+
Vip@Work ERASMUS+
IDEAL ERASMUS+
eSkills4All ERASMUS+
Europe Enterprise Network H2020 + COSME
Startup Activator POCU
Diaspora Restart POCU
B-CAPP ERASMUS+

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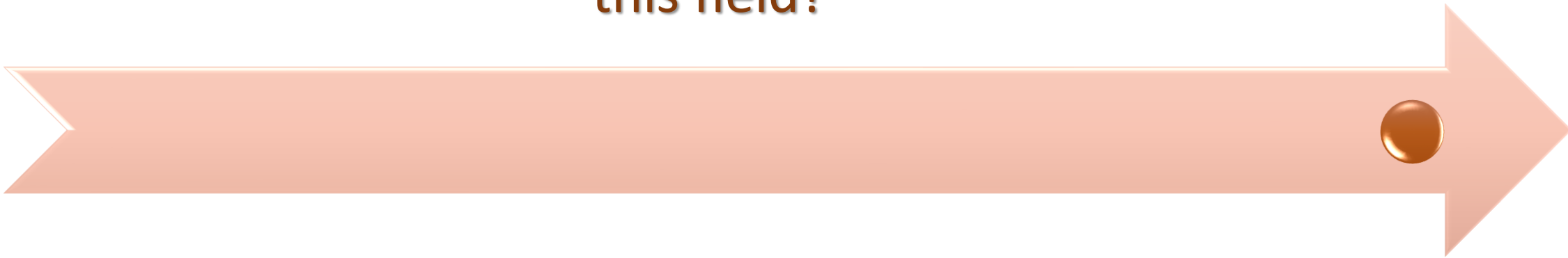
Is education actively involved to create new talent in this field?



Universities and regional development: the case of NE Region Romania, HESS Project, 2016

- Based on all documents available, the main field for interaction and engagement between HEIs and labor market seems to rely on HE's core mission – to **develop students' competences and qualifications** hopefully with relevance for regional development (RD)!
- Regarding the research, there might have been **projects developed in collaboration with local/regional businesses** but which are not necessarily presented at national level or in relevant documents related to HE.
- Concrete measures with impact on the RD will be implemented in the near future (National Strategy for Tertiary Education 2015-2020).
- Existence of **Centers of Excellence in higher education institutions**;
- The existence of the **79 recognized research centers** CNSIS;
- **Business infrastructure** well represented at regional level;
- High number of **PhD's and doctoral schools** in the region, most of them choosing real and **technical profile**;
- **Reduced collaboration between business environment and universities/ research institutes** - low technological transfer.

Integrated approach to educational and research activities

- Initiation of Environmental Engineering Studies at TUIASI (1992) & Initiation of the Bologna Process (2005)
- **Comprehensive educational programs** in the field of **Environmental Engineering**: Bachelor, Master, Doctorate, Post-doc;
- **Promoting excellence in education and research**;
- **Cooperation at national and international level**.

- **Education and research** in **environmental engineering and management**
- Multi- and trans-disciplinary education and research
- **Cooperation with industry** and local and regional authorities
- **National and international partnerships** for education and research
- Last generation teaching and research infrastructure
- **Doctoral and post-doc programs** (including Structural Funds)
- "**Academic Organization for Environmental Protection and Sustainable Development**" NGO, founded by members of the faculty, for the purpose of education for environmental protection, scientific research publishing and technology transfer.

Department of Environmental Engineering and Management - Environmental Engineering Domain - 1st place nationwide in the study programs hierarchy

- **Undergraduate studies (since 1992)**

✓Specialization Engineering and Environmental Protection in Industry

- **Master Programs**

✓ M.Sc. Environmental Management (since 1999)
✓ MSc, IFR Environmental Management (since 2000)
✓ M.Sc. Environmental Management and Sustainable Energy (in English, 2010)
✓ M.Sc. Environmental quality control
✓ M.Sc. Waste Management, Treatment and Recycling (from 2018)

- **Doctoral and post-doctoral programs**

✓Environmental Engineering
✓Chemical Engineering

- **PhD (3 or 4 years)**

Environmental Engineering Theme
✓Sewage treatment
✓Integrated environmental management and environmental assessments
✓Waste recovery and management

Environmental Engineering and Impact Assessment Research Center

Research Directions

- Water / wastewater treatment technologies
- Advanced sewage treatment technologies
- Waste management
- Technologies for depollution of gaseous streams
- Eco-materials and advanced materials for environmental protection
- Biotechnologies for environmental protection
- Monitoring environmental components
- Integrated Pollution Prevention and Control
- Modelling, simulation and optimization in environmental protection
- Integrated water resource management
- Environmental management and sustainable development
- Risk management
- Environmental impact assessment, environmental audit.

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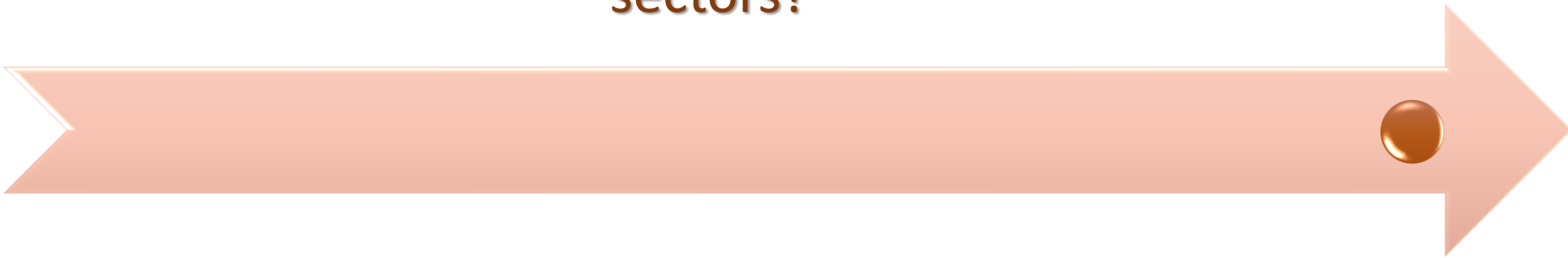
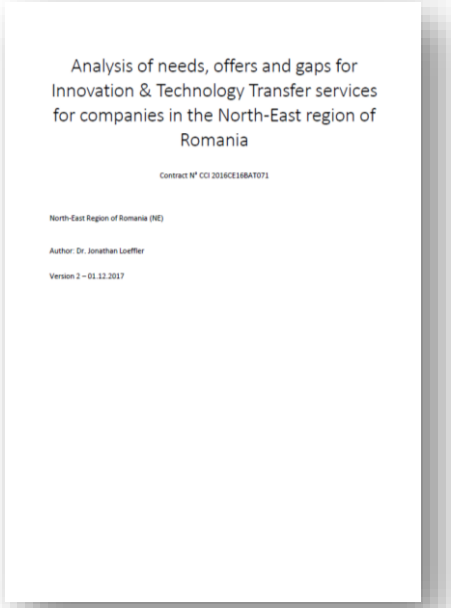
Is industry involved? Are clusters involved? Which sectors?



Analysis of needs, offers and gaps for Innovation & Technology Transfer services for companies in the North-East region of Romania – 2017

The main drivers to use new technologies or R&D knowledge for new products or services are:

- Increase performance of existing products / services (67%)
- Increase productivity and competitiveness (67%)
- Reduce manufacturing costs (63%)



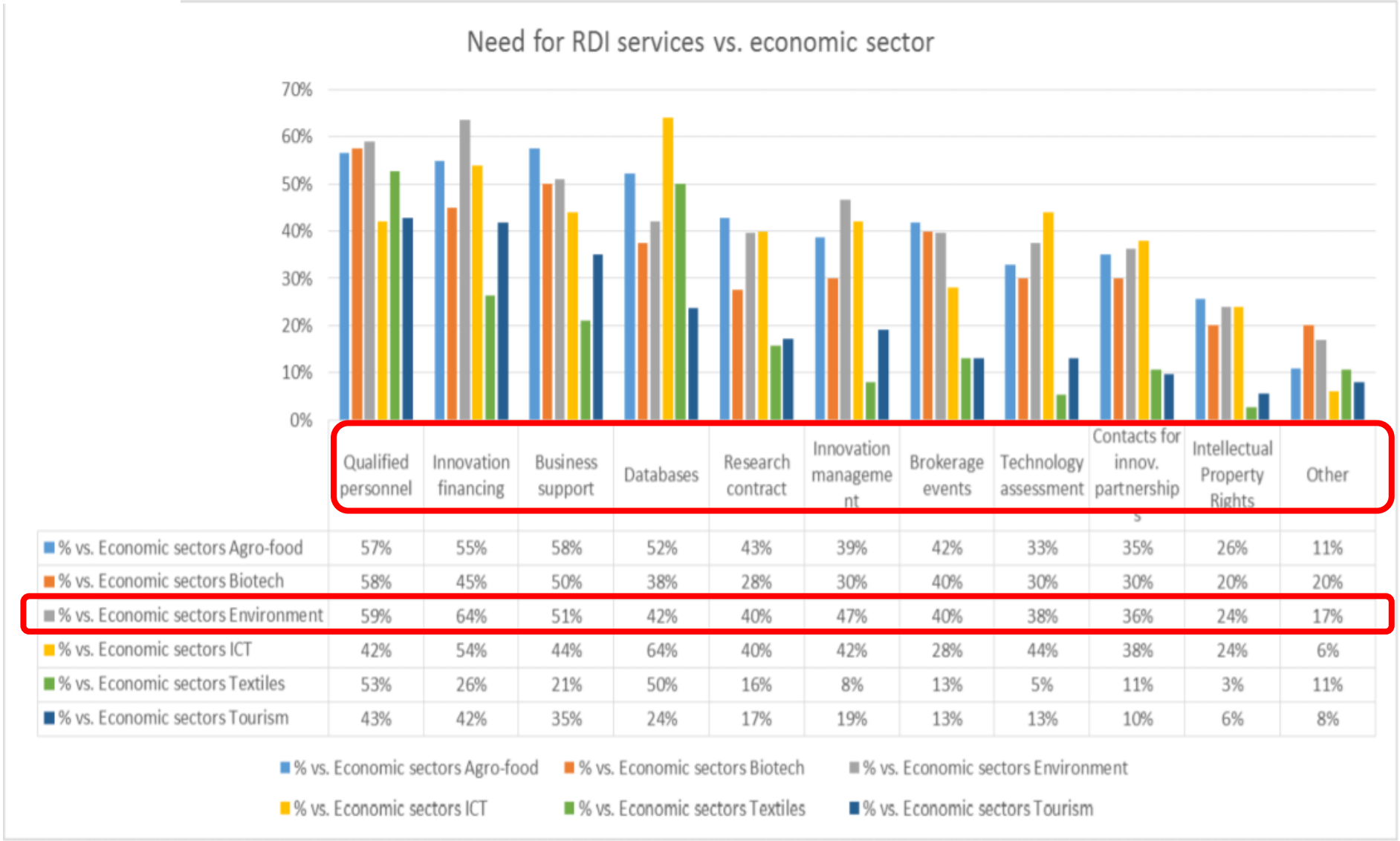
The main barriers to use new technologies and R&D knowledge:

- Equipment costs (63%),
- Qualified staff costs (45%)
- Raw material costs (35%).

The analysis has been focused on the following main areas of priority:

- 1. Support the competitiveness of companies through new product development in collaboration with Universities and/or R&D organizations
- 2. Support the financing and foster the knowledge exchange at regional level
- 3. Achieve a shift of mentality and collaboration culture at University, R&D organizations and SMEs

Support services needed



Thank you for your attention!

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