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SMART SPECIALISATION STRATEGIES *IN PORTUGAL*

**Higher education and smart
specialisation in Portugal**

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#smartspecialisation

Açores

Madeira



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Objectives

Objectives of the presentation

This presentation of the main results of the project HESS - Higher Education and Smart Specialisation in Portugal is **an excuse to discuss S3 past and future implementation and the role of HEIs** in this process.

The case study of HESS in Portugal adopts “**action-research**” principles:

- with and for the research ‘objects’, which for HESS has been local and regional authorities as well as HEIs;
- building innovation capacities by strengthening the participation of HEIs in the regional innovation networks;
- promoting the integration of higher education with research, innovation and regional development in defining and implementing paths for smart specialisation.



Project report

Source: <https://s3platform.jrc.ec.europa.eu/>

Organisation of the work

Desk Research

Academic literature, policy documents, and data from European Structural and Investment Funds.

Interviews

23 interviews, administered between June and September 2019. After the interviews were carried out, their full transcription, followed by a content analysis.

Focus Groups

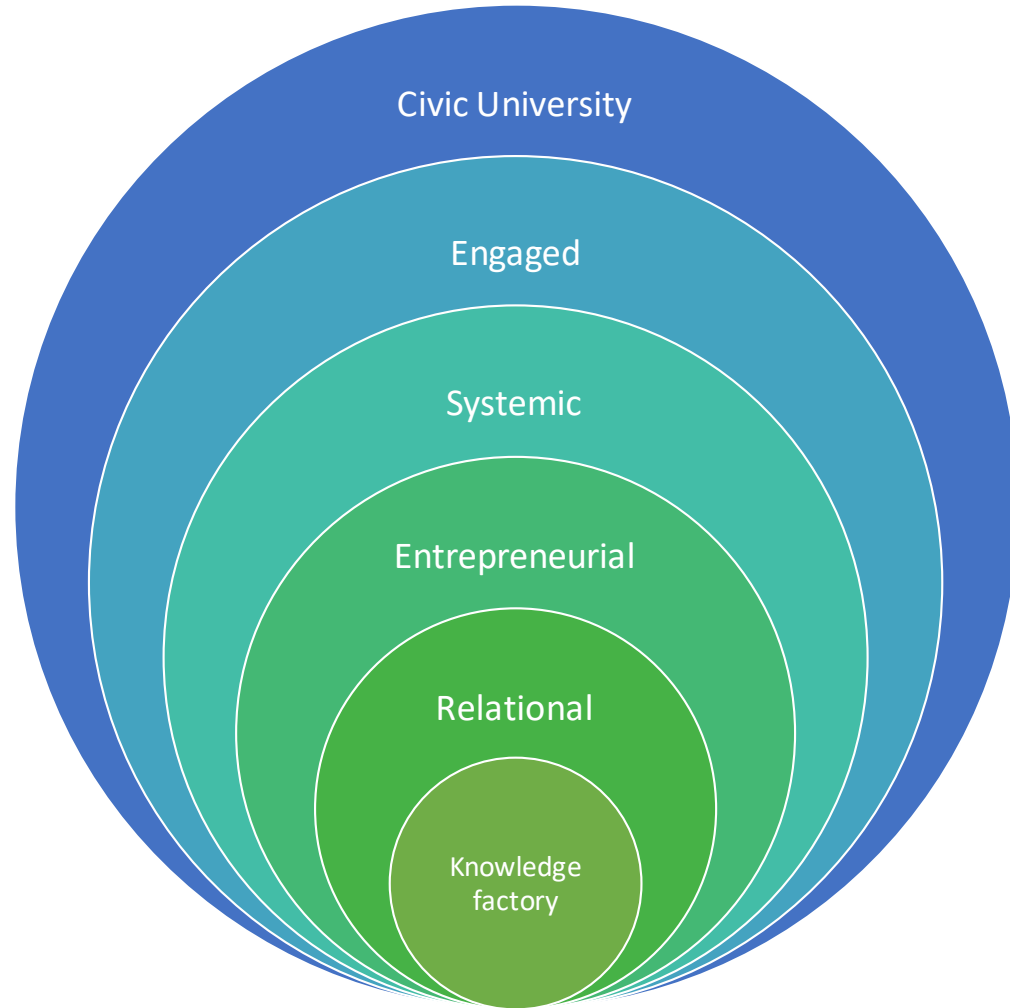
7 FGs were carried out in all NUTSII regions of Portugal: Norte, Centro, Lisbon Metropolitan Area, Alentejo, Algarve and the Autonomous Regions of Azores and Madeira (September to December 2019), organisation of FG results with a common template, followed by a content analysis.

Pre and Post Project Seminars

May 2019 and July 2020 (online).

Desk Research

New roles of HEIs in regional development

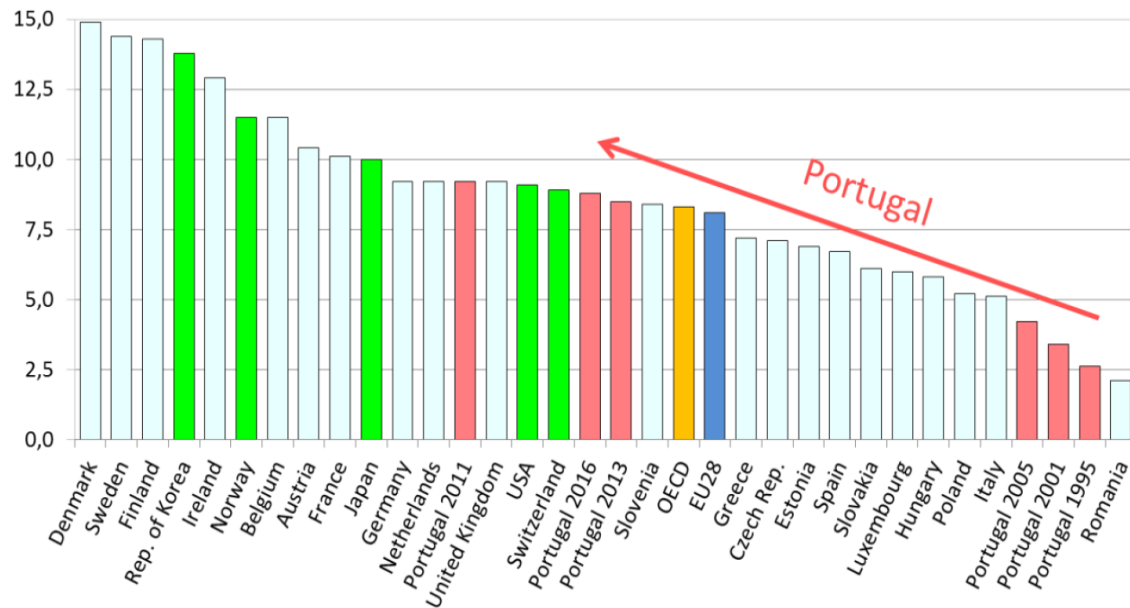


Universities and other higher education institutions (HEIs) have a **fundamental role in the success of Smart Specialisation Strategies (S3)**. They are expected to fulfil several functions - in addition to the “traditional” Education and Research.

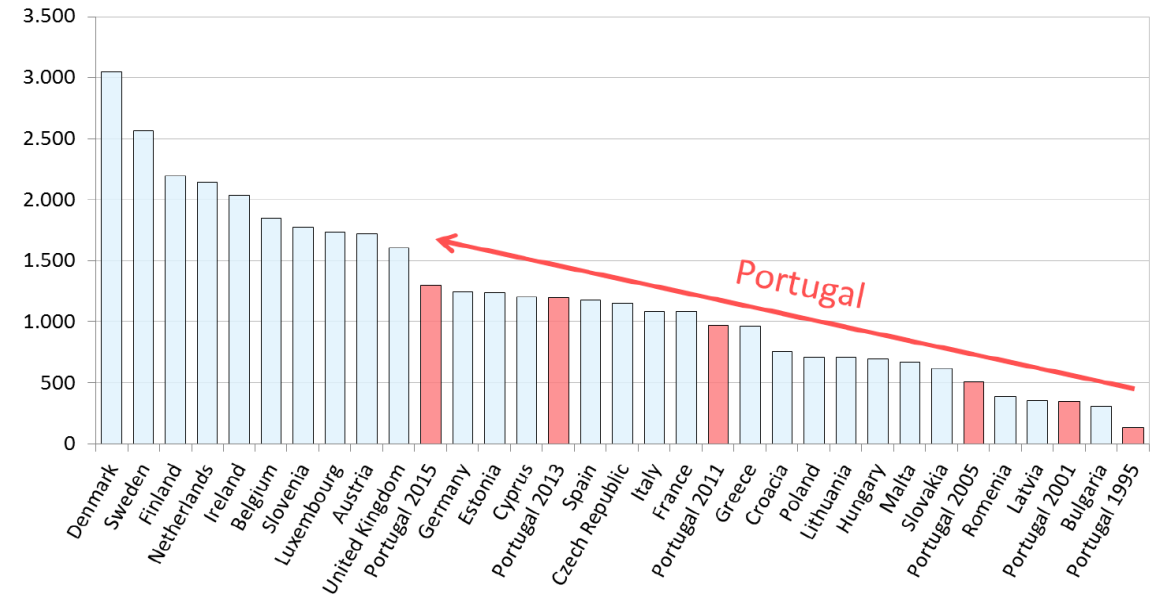
HEIs are considered factors of territorial regeneration, providers of infrastructure and knowledge-intensive services, local connectors with knowledge and external markets, and even animators of innovation ecosystems.

This is probably an **excessively optimistic** view as HEIs face a wide range of challenges.

Recent Evolution of Research & Innovation



(a) Number of researchers by 1000 employed, Data for 2016, except for France, USA, Switzerland, Poland (2015).



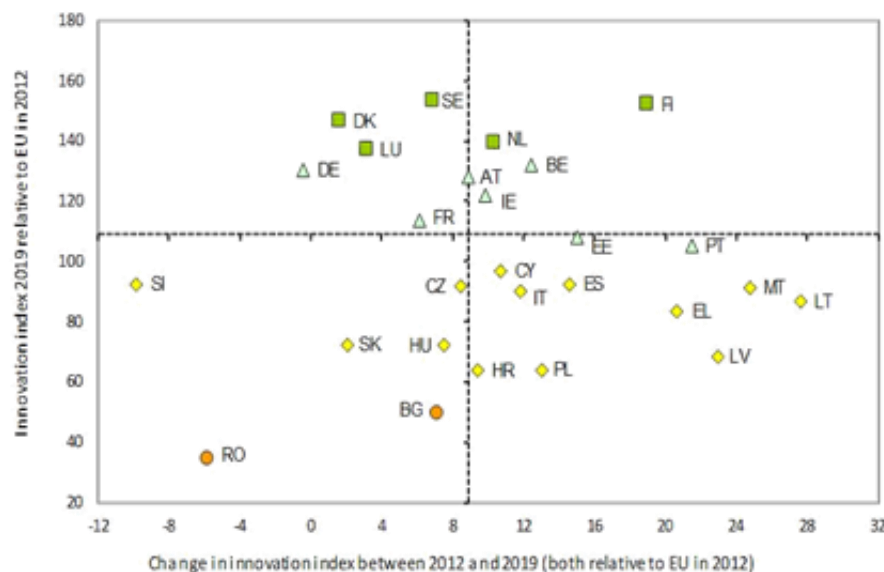
(b) Number of scientific publications by million inhabitants, Data for 2015.
Source: FCT ([2019](#): 4-5)

Recent Evolution of Research & Innovation

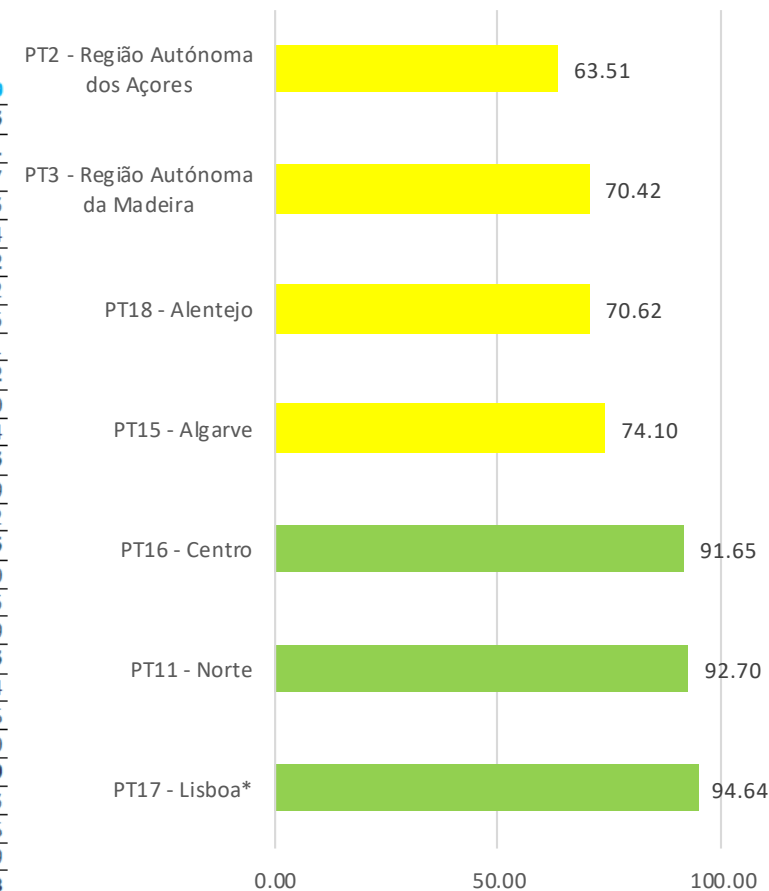
EUROPEAN INNOVATION SCOREBOARD 2020

Innovation performance groups

- Innovation Leader
- Strong Innovator
- Moderate Innovator
- Modest Innovator



Portugal	Relative to EU 2019 in 2019	Performance relative to EU 2012 in	
		2012	2019
SUMMARY INNOVATION INDEX	96.7	83.8	105.3
Human resources	91.2	94.7	105.1
New doctorate graduates	93.2	104.9	102.7
Population with tertiary education	85.1	62.8	108.3
Lifelong learning	96.9	117.8	104.4
Attractive research systems	118.4	95.6	135.2
International scientific co-publications	130.9	110.8	192.2
Most cited publications	91.4	94.4	91.5
Foreign doctorate students	153.6	84.7	177.1
Innovation-friendly environment	130.7	118.1	227.2
Broadband penetration	178.3	130.0	410.0
Opportunity-driven entrepreneurship	76.6	110.1	104.4
Finance and support	83.3	84.2	83.3
R&D expenditure in the public sector	86.9	90.8	86.9
Venture capital expenditures	79.2	73.0	79.2
Firm investments	95.8	91.5	124.5
R&D expenditure in the business sector	46.3	53.0	53.0
Non-R&D innovation expenditures	114.5	92.6	160.5
Enterprises providing ICT training	127.8	138.5	176.9
Innovators	174.9	124.1	156.3
SMEs product/process innovations	177.0	138.8	176.4
SMEs marketing/organizational innovations	151.8	124.6	124.6
SMEs innovating in-house	195.2	109.3	170.0
Linkages	63.0	53.2	64.9
Innovative SMEs collaborating with others	105.0	84.3	104.3
Public-private co-publications	47.4	41.3	53.6
Private co-funding of public R&D exp.	46.4	40.2	46.9
Intellectual assets	75.8	69.1	70.8
PCT patent applications	49.7	39.4	46.1
Trademark applications	102.9	76.9	109.5
Design applications	88.2	104.0	74.0
Employment impacts	89.1	48.1	96.1
Employment in knowledge-intensive activities	65.0	45.9	70.3
Employment fast-growing enterprises	108.6	49.8	117.0
Sales impacts	55.7	67.1	55.4
Medium and high-tech product exports	60.7	50.3	67.3
Knowledge-intensive services exports	38.5	52.1	39.8
Sales of new-to-market/firm innovations	70.7	100.2	59.1



Portugal Regional Profile for Innovation index in 2019

Source: <https://interactivetool.eu/RIS>

Public HEIs in Portugal

The project was focused on a **national scale**, and involving all regions.

This contrasts with other HESS studies, which focused on a single region and on the role of a single university or HE network in the dynamics of smart specialisation.

U Coimbra; U Aveiro; UBI
IP Leiria; IP Coimbra; IP
Viseu; IPCB; IP Guarda;
ESEnfC; IP Tomar
~75,000 students

U Porto; U Minho; UTAD
IP Porto; IP Bragança;
IPVCastelo; IPCA; ESEP
~75,000 students

U Lisboa; UNL; Iscte; U Aberta
IP Lisboa; IP Setúbal; ESHTe
ESEL; ENIDH
~100,000 students

U Évora
IP Santarém; IP Beja; IP
Portalegre
~15,000 students

U Madeira
~3,500 students

U Açores
~4,000 students



HEIs and ESIF utilisation: leadership and S3 focus

Exploratory approach to PT2020 [data](#)

- **First step:** the approved operations led by HEIs, across Operational Programmes (OPs), Thematic Objectives (TOs) and Investment Priorities (IPs).

List of approved operations by 31 December 2018

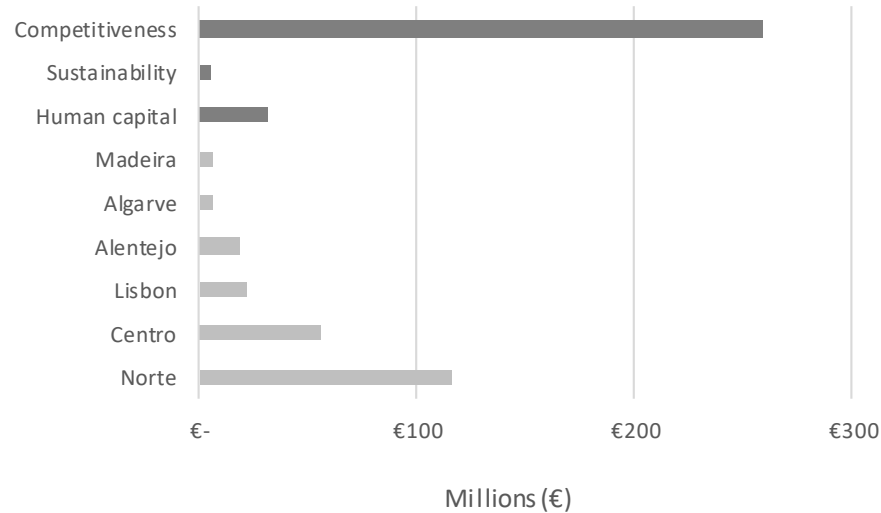
1,537 approved operations involving a total of 55 beneficiaries from the HE sector

- **Second step:** among these, projects that mentioned in their description a direct and explicit relationship to smart specialisation.

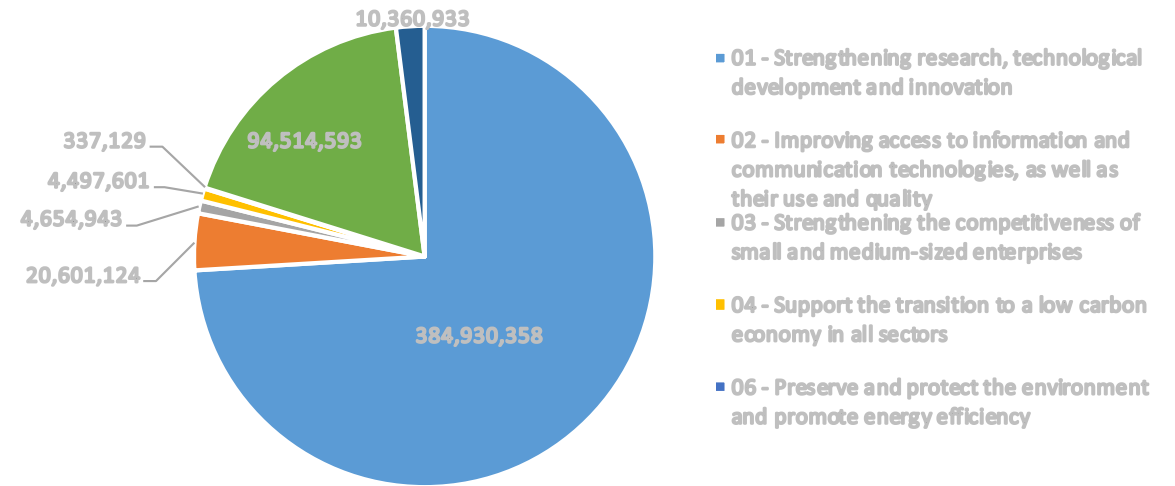
OPs	Number of Projects	Approved Fund (€)
OP Algarve	3	1,115,836.80
OP Alentejo	7	1,691,098.73
OP Centro	15	8,351,928.76
OP Norte	21	19,329,646.83
OP Madeira	1	846,651.02
OP HC	8	15,865,569.68
Total	55	47,200,731.82

Source: Prepared with Portugal 2020 data

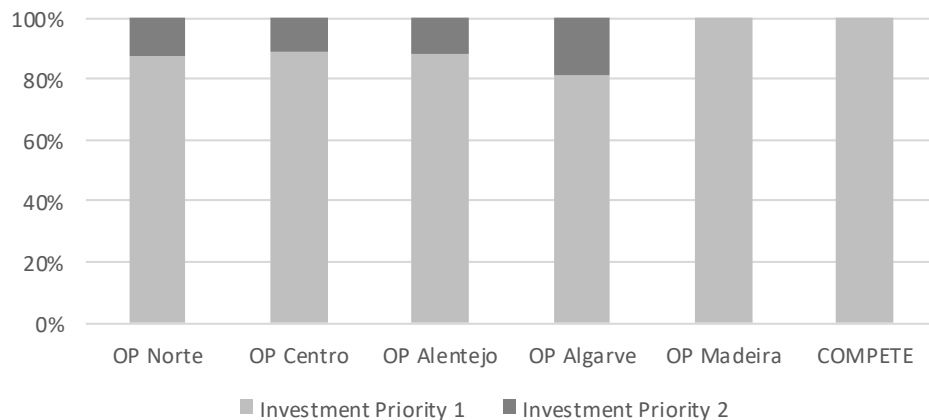
HEIs and ESIF utilisation: leadership and S3 focus



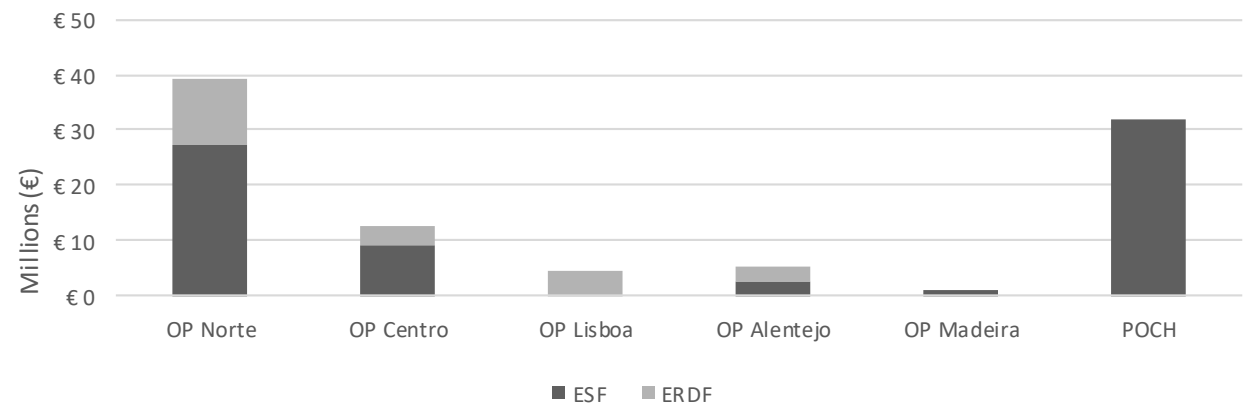
(a) Value of approved ESIF financed projects with HEIs as single beneficiary or lead partner



(b) ESIF spending on HEIs as single beneficiaries or project leaders, by Thematic Objective



(c) Proportion of R&I projects (Thematic Objective 1) classed as Investment Priority 1 and 2 that are led by Higher Education Institutions in Portugal



(d) Financial value of ESIF co-financed investment projects in education, training and lifelong learning (Thematic Objective 10) by Operational Programme, divided between the European Social Fund (ESF) and the European Regional Development Fund (ERDF)

HEIs and ESIF utilisation: co-promotion projects

Color: type of entity

- Firms (88,63%)
- R&D Centres, CoLab and HEIs (6,67%)
- CIT and other Intermediary organisations (3,22%)
- Other (1,49%)

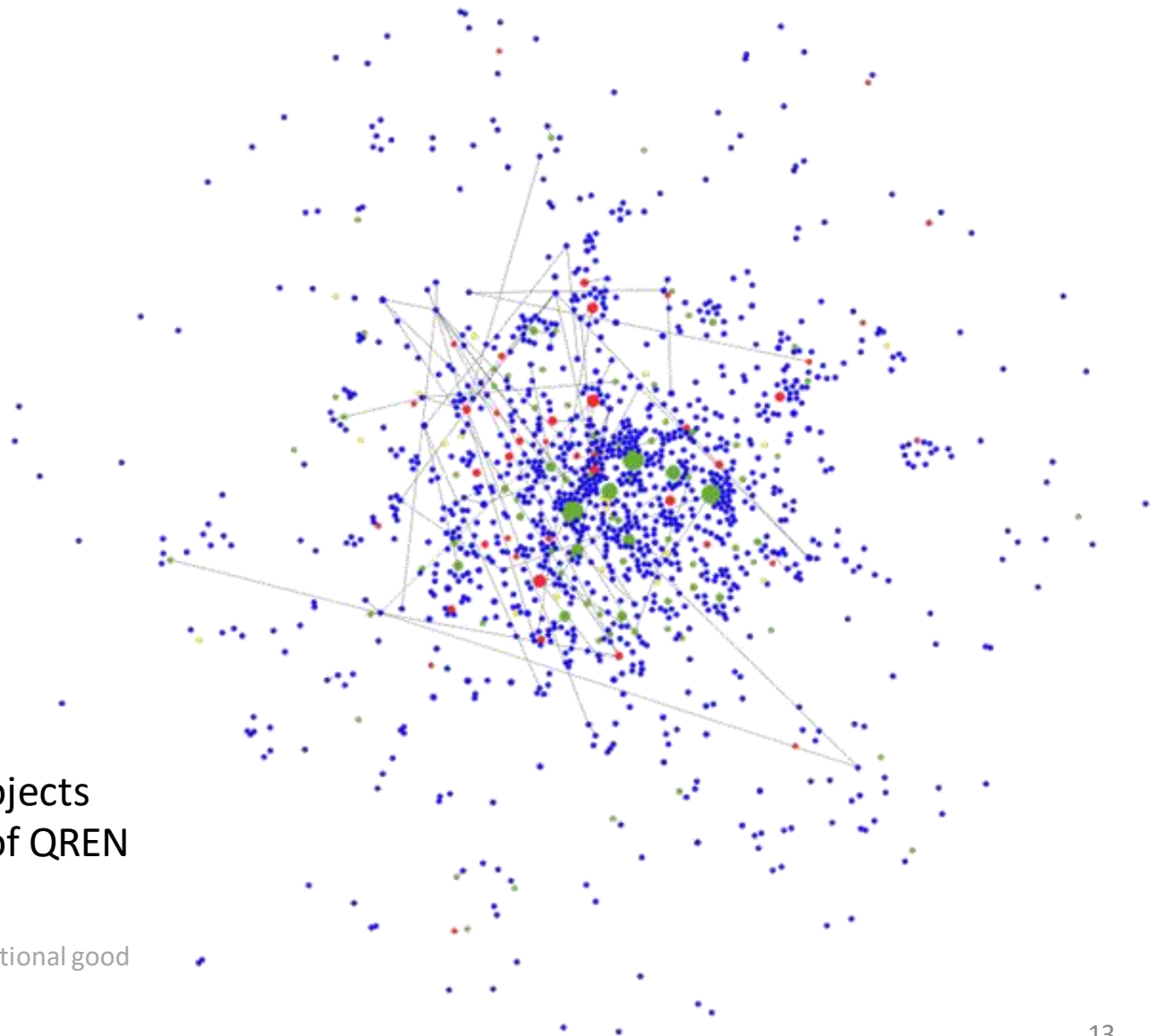
Size of nodes: Number of H2020 Projects

Layout: Force Atlas 2; Software Gephi

Actors with Higher Degree	Degree
UNIVERSIDADE DO MINHO	118
UNIVERSIDADE DE COIMBRA	104
UNIVERSIDADE DE AVEIRO	95
UNIVERSIDADE DO PORTO	82
INSTITUTO SUPERIOR TÉCNICO	71

Data between 2007 and 2020 associated with projects supported by R&DT in co-promotion in any area of QREN and Portugal 2020, made available by ANI

Source: EY-Parthenon (forthcoming) Study on the dissemination of international good practices in technology and knowledge transfer; ANI.



Interviews

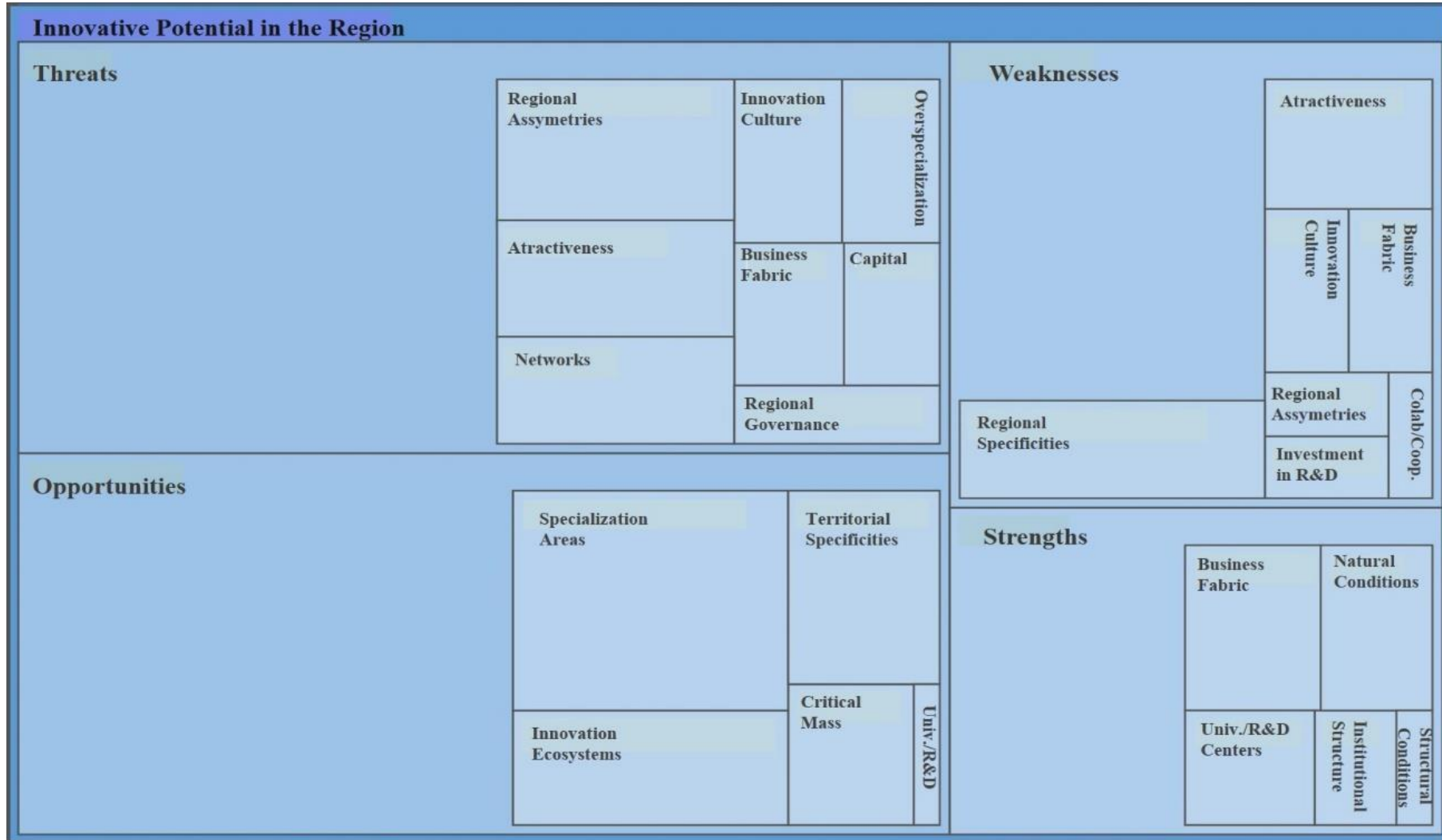
Role of HEIs in S3

- Beyond simple beneficiaries of the ESIF
- **Design of S3:** participating in discussion groups and often providing the competences to evaluate existing innovation capacities
- **Implementation:** participation in, as well as leadership of, innovation communities/platforms
- Implementation: provision of information to other actors, particular companies, about the possibilities for collaborative projects in the S3 priorities
- Implementation: HEIs as animators, creating partnerships and mobilising actors around a regional vision
- Monitoring: services to design and – mainly intentions – to implement S3 monitoring systems

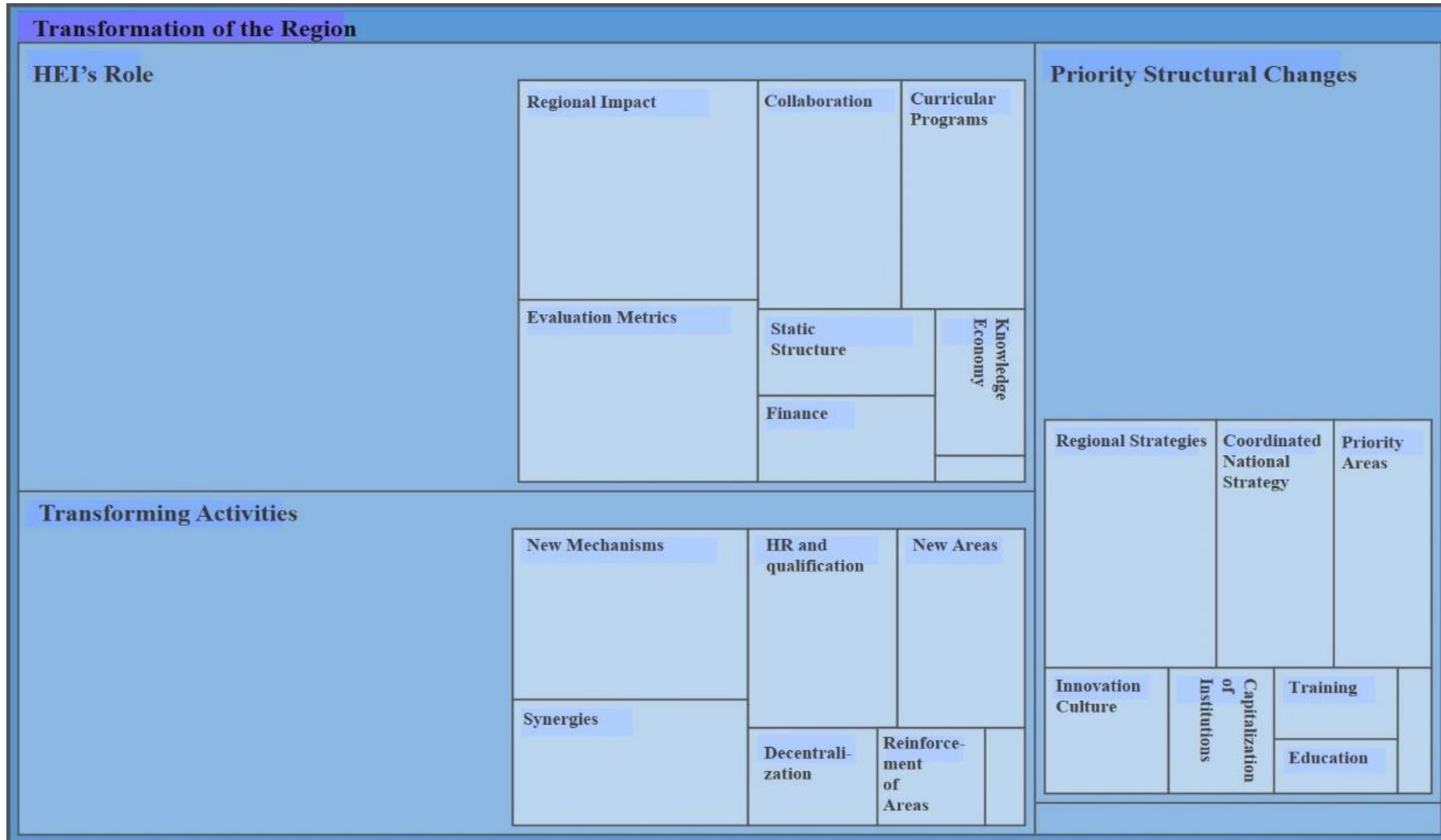
HEIs already participate in **governance structures** and are very much involved with the revision of the regional S3.

But they want **more** – evaluation and selection of proposals; manage dedicated sub-programmes.

SWOT



Roadmap for the Transformation of the Region



Focus Group

Problems and Measures

Measures	Problems	
For the Region	HEIs Specific Problems in the Region	Cross-scope to HEIs in Portugal
For the Country	Contextual Problems	

A possible summary

A possible summary

Limitations	Recommendations
External to HEIs	
Regional asymmetries not addressed through place-based policies	<p>Consolidate a continuous regionally embedded entrepreneurial discovery process to better define priorities and policy mixes</p> <p>Focus regional OP related innovation funds in Transformative activities anchored in R&D with clear territorial impact</p>
Lack of innovation culture and collaboration	<p>Stimulate ecosystem services, in particular through the financing of dedicated teams in innovation bodies to support the development and animation/orchestration of collaborative transformative activities</p> <p>Support the creation of anchor projects for the consolidation of regional transformation networks</p>
Excessive bureaucracy of ESIF	Implement ongoing initiatives for simplification of processes
Lost momentum in S3 regional engagement	Give new assertive steps, namely in the operationalisation of EDP, for example, with platforms defining calls and monitoring tools

A possible summary

Limitations	Recomendations
Internal to the HEI	
Difficulties to increase limited financial resources	Create new medium-term schemes for HEIs financing based in transformative project achievements
Attraction and retention of talent	Programmes to stimulate professors and researchers with transformative projects (not necessarily only research based, can be educational) Programme to contract highly specialised staff to support transformational activities
Evaluation	Articulate at the level of CCISP and CRUP guidelines for the evaluation of teaching and research staff (and measures to implement it both in evaluation and selection processes).
Skills do not fulfil S3 transformation requirements	Stimulate new forms of education and training through pedagogical innovation Stimulate a new programme of PhDs for society (to be developed in firms and other organisations)

Learning with HESS

Learning with HESS

Risks

- Dominated by a single/few HEIs – institutional hijacking
- Many HEIs – fragmentation / tension / fight for funds and influence

Action-Research

- Impact on continuous regional self-discovery process
- Permanent mobilisation and lost of interest
- Misunderstandings between regional authorities and HEIs on the S3
- Value of external actors, specially in monitoring, outside of the regional power struggles (and tensions)

Types of HEIs

Universities vs polytechnics (territorial emphasis: regional-national vs. localised?)

Focus in transformation – change

Transformative actions (transformational roadmap & action plan) - S3 priorities are not sectors or scientific domains, avoids antagonism/counter-mobilisation, relatedness is crucial for change – institutional layering.

Learning with HESS

Covid-19 pandemic and S3 (*inspired by post-project webinar*)

- HEIs are absolutely crucial to manage and find solutions to Covid-related issues.
- The pandemic causes confusion and this is reflected into the economy, all actors and domains.
- The pandemic could negatively affect the attractiveness and retention of talent, in particular in HEIs.
- Even the most technological companies will follow, short-run logics while they should also have a long-term perspective.
- S3 lost its momentum with the pandemic, after the 2019's increase in speed and intensity. Mobilisation of stakeholders may be more difficult.
- S3 is an interesting approach for many of the necessary transformation.

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