

Regional Innovation Impact Assessment Framework for universities

Athina Karvounaraki

Joint Research Centre



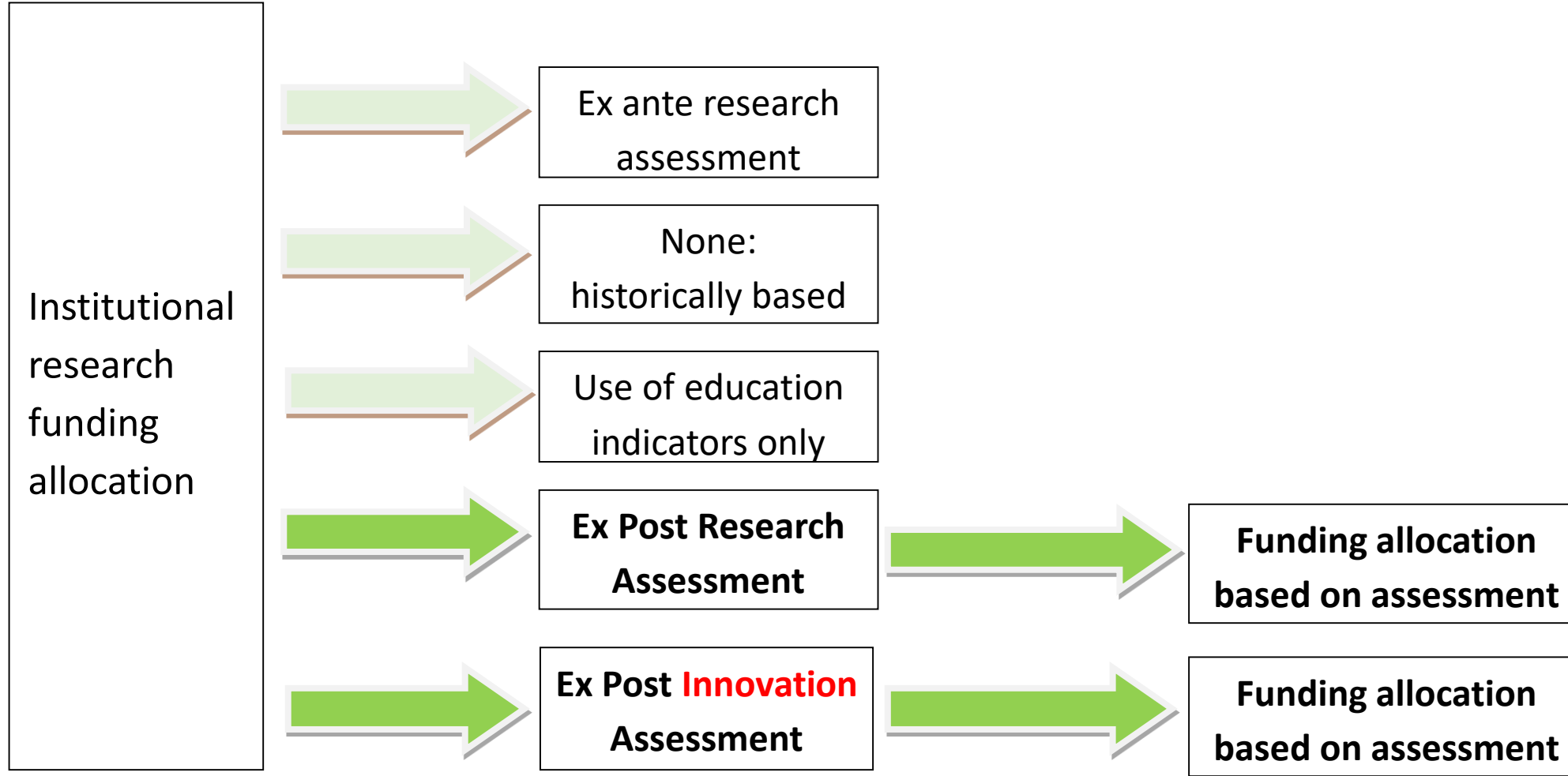
Disclaimer: This presentation does not necessarily reflect the official opinion of the European Commission. The commission nor anyone acting on its behalf can be held responsible for the use made of material contained in it.

Lamy Report: European university label

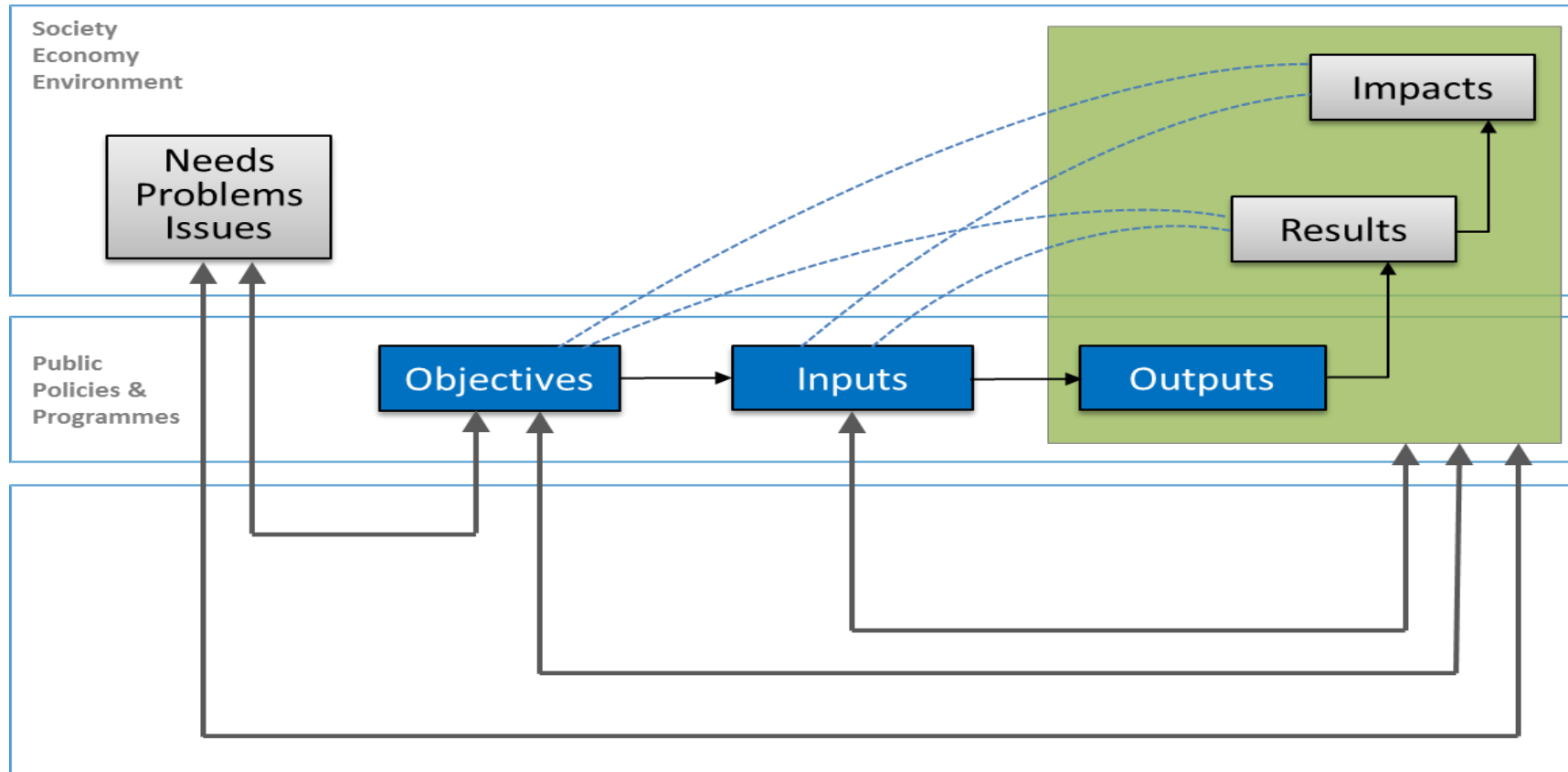


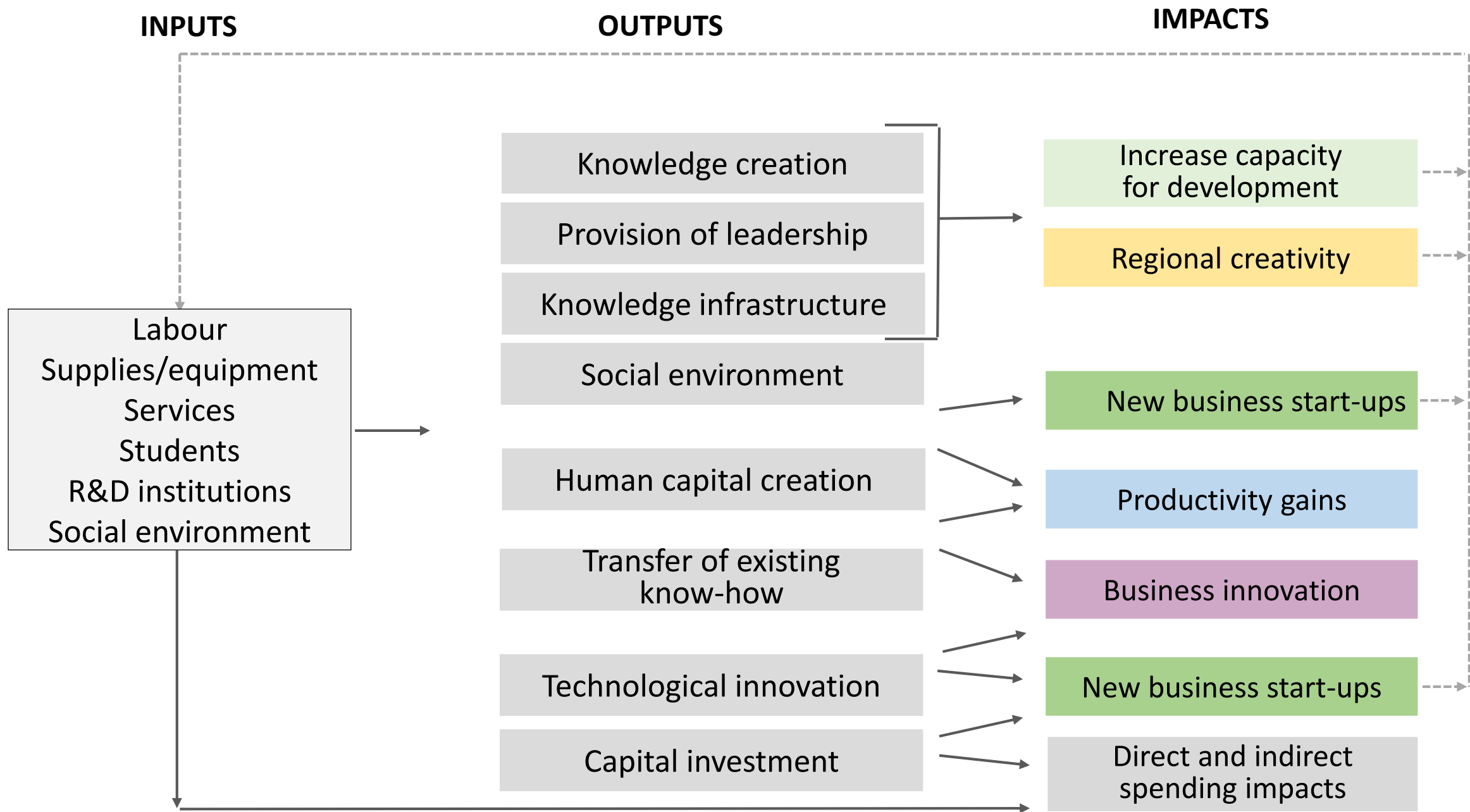
The EU could offer top-up institutional funding tied to modernization and innovation performance (Lamy et al, 2017)

Performance based funding of universities



Innovation Impact of Universities

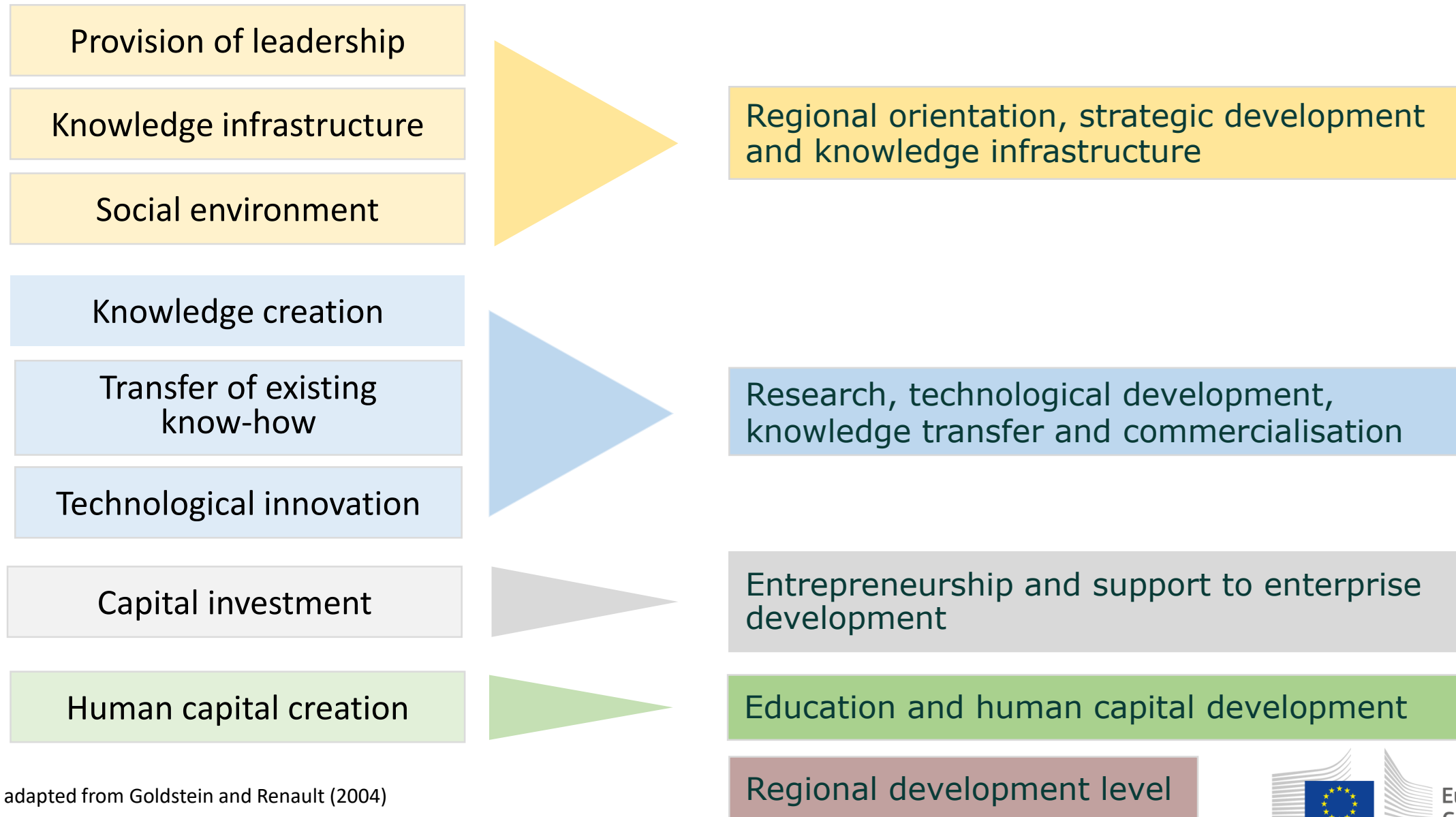




Source: adapted from Goldstein and Renault (2004)

Outputs/Impacts

Indicator portfolio



Source: adapted from Goldstein and Renault (2004)

OUTPUTS/IMPACTS

Indicator portfolio

Provision of leadership

Knowledge infrastructure

Social environment

Regional orientation, strategic development
and knowledge infrastructure

Tailor made RIA profile could feed into a university
level case study: a "narrative with numbers"

Capital investment

Human capital creation

Entrepreneurship and support to enterprise
development

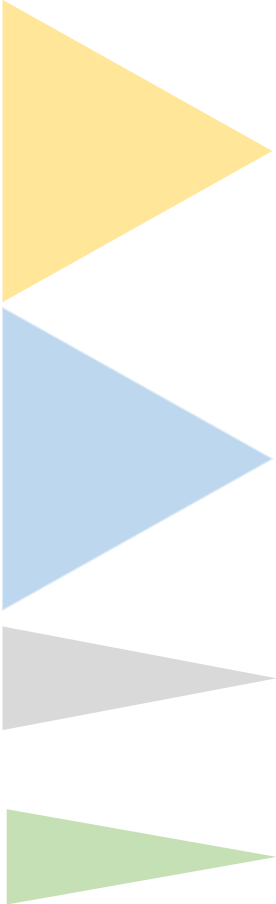
Education and human capital development

Regional development level

Source: adapted from Goldstein and Renault (2004)

Indicator boxes

University performance



Regional orientation, strategic development and knowledge infrastructure

examples

Profiling related to regional needs and specialisation

Research, technological development, knowledge transfer and commercialisation

R&D related income from private sector

Entrepreneurship and support to enterprise development

Student start ups / spin offs

Education and human capital development

% of students enrolled in entrepreneurship courses

context

Regional development level

e.g. Regional Innovation Scoreboard

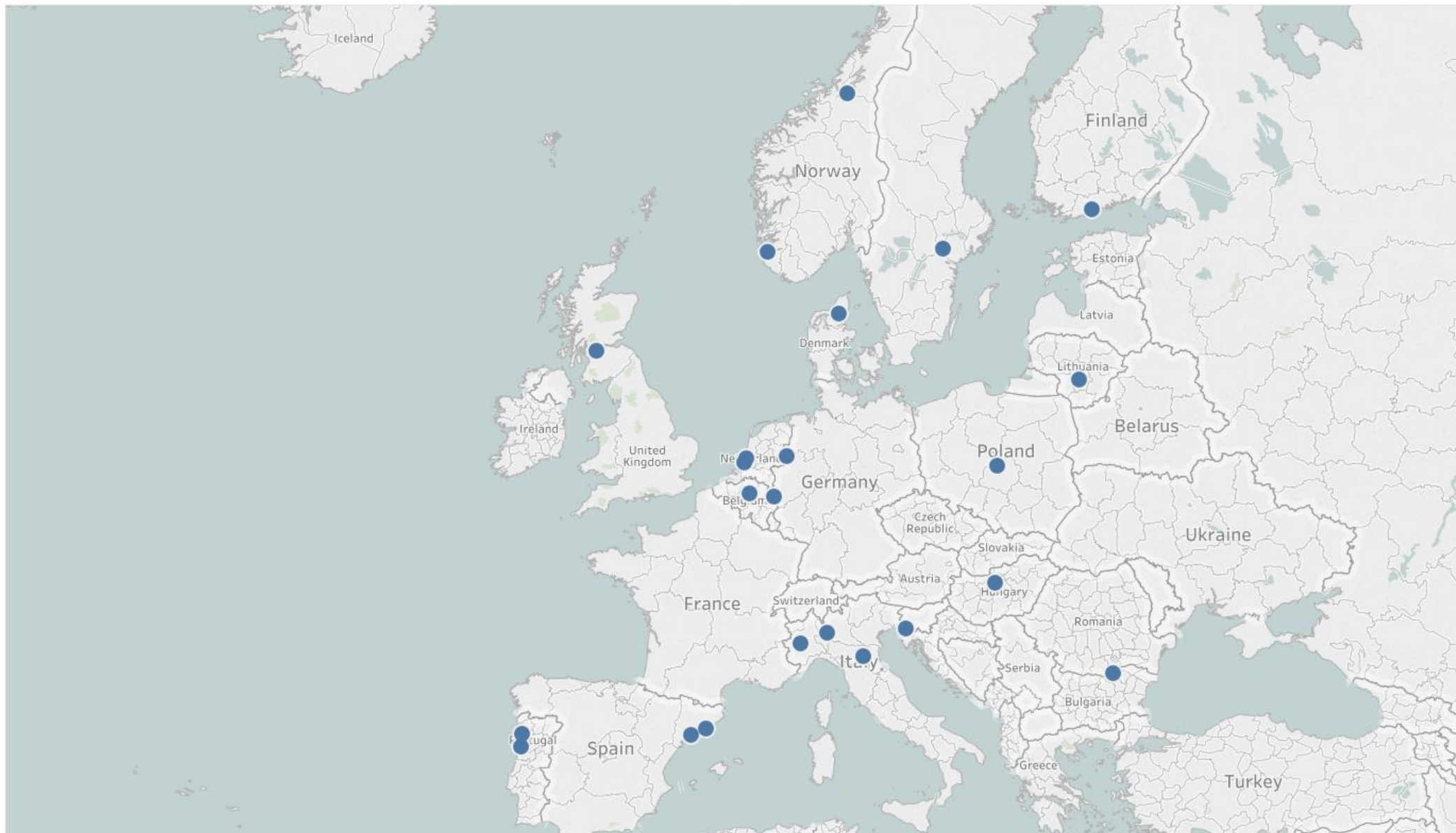
Innovation Impact of Universities

General considerations

- Performance systems may:
 - Assess absolute innovation performance
 - Performance relative to regional performance
 - Improvement of performance (progress)
 - Performance with respect to pre-determined objectives (contracts)
- Final design dependent on the framework through which it is implemented (e.g. national frameworks, FP9 or ESIF)

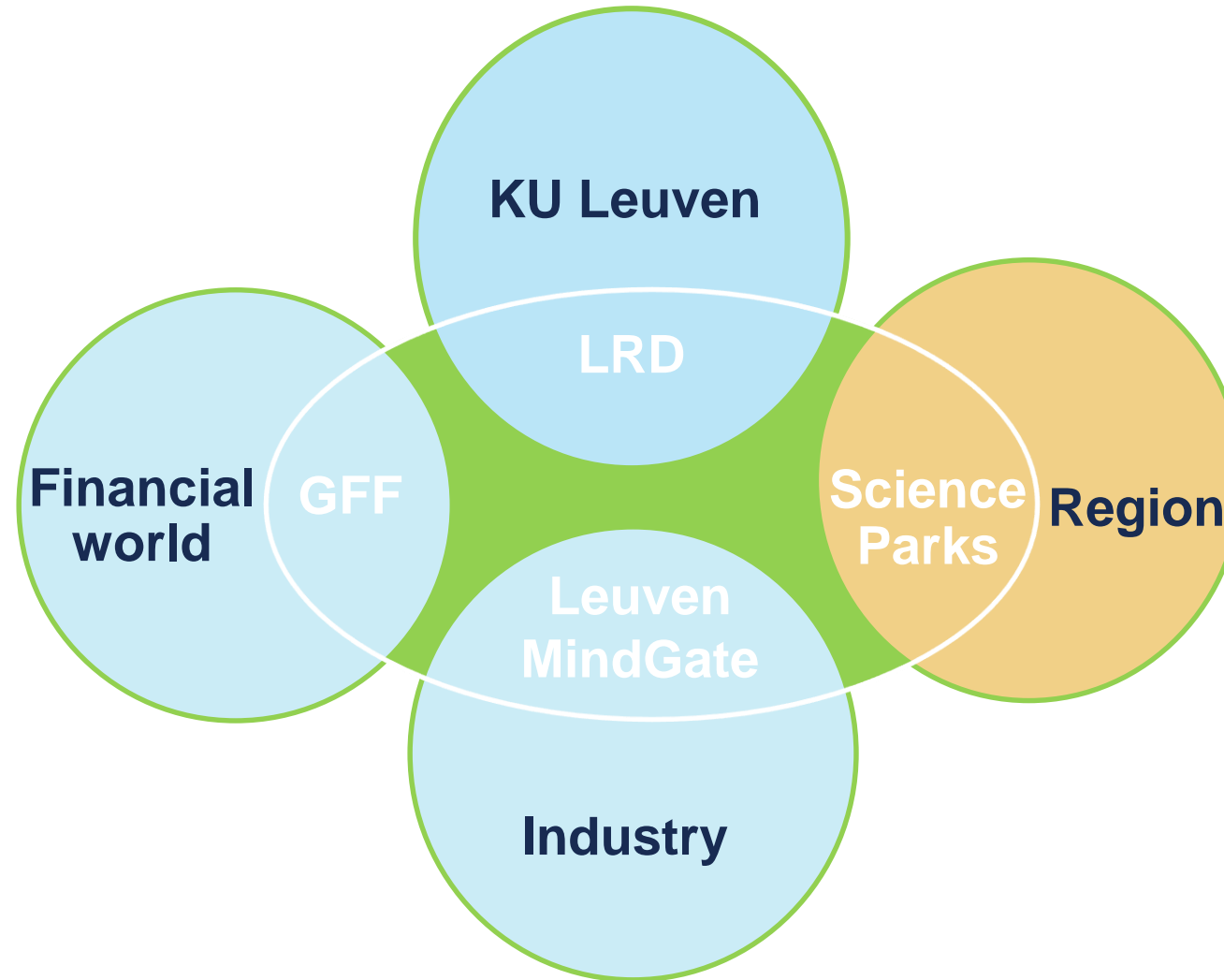
Case studies being developed using JRC framework

JRC case studies



Map based on average of lon and average of lat. Color shows details about Category JRC study. Details are shown for country, City and University. The view is filtered on Category JRC study, which keeps JRC case study.

The university as driver in setting up partnerships



LRD Financial Ecosystem

Fund+

VIB Ventures

Vesalius I, II, III

Capricorn Healthtech

Capricorn ICT

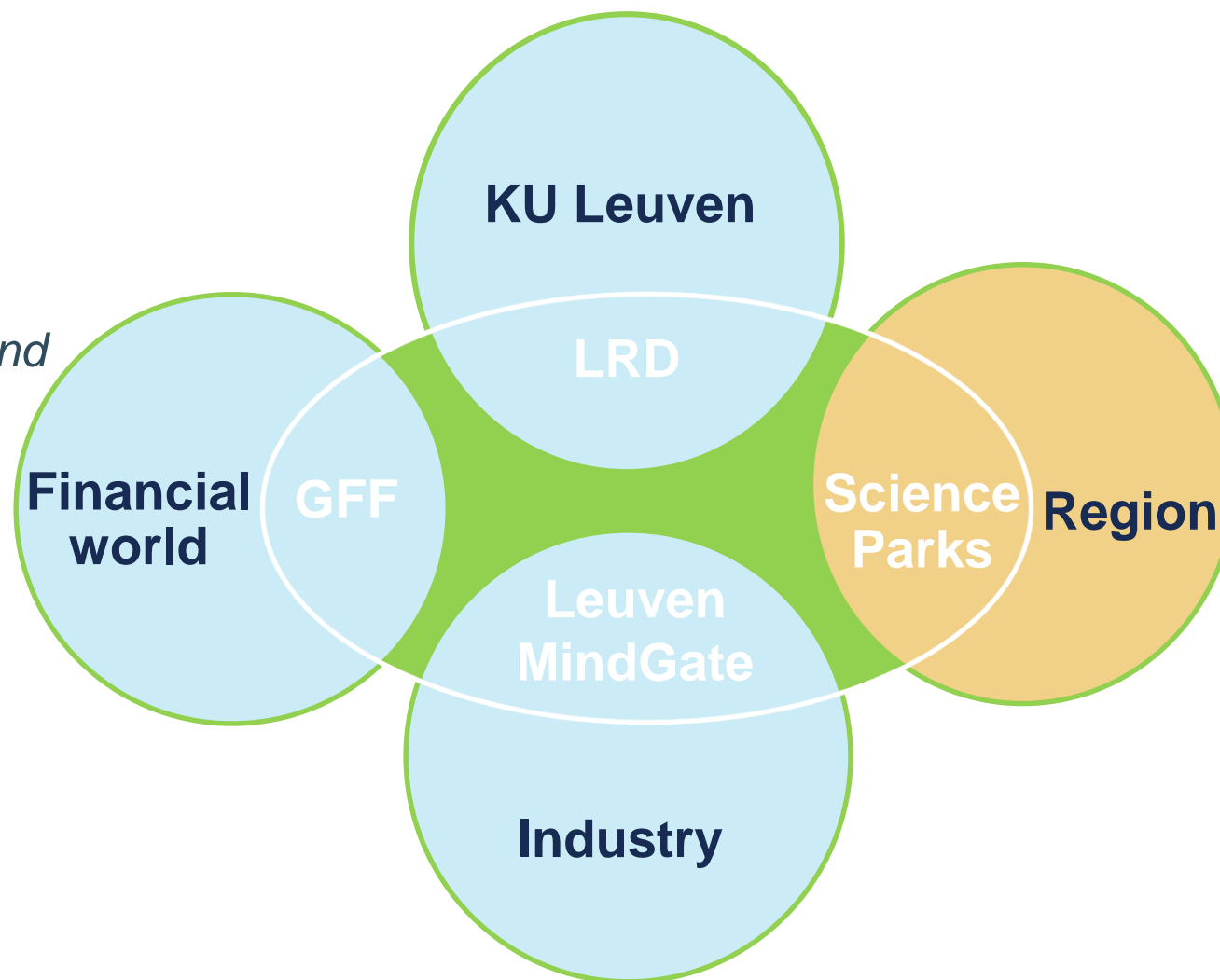
Essenscia Innovation Fund

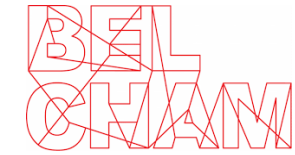
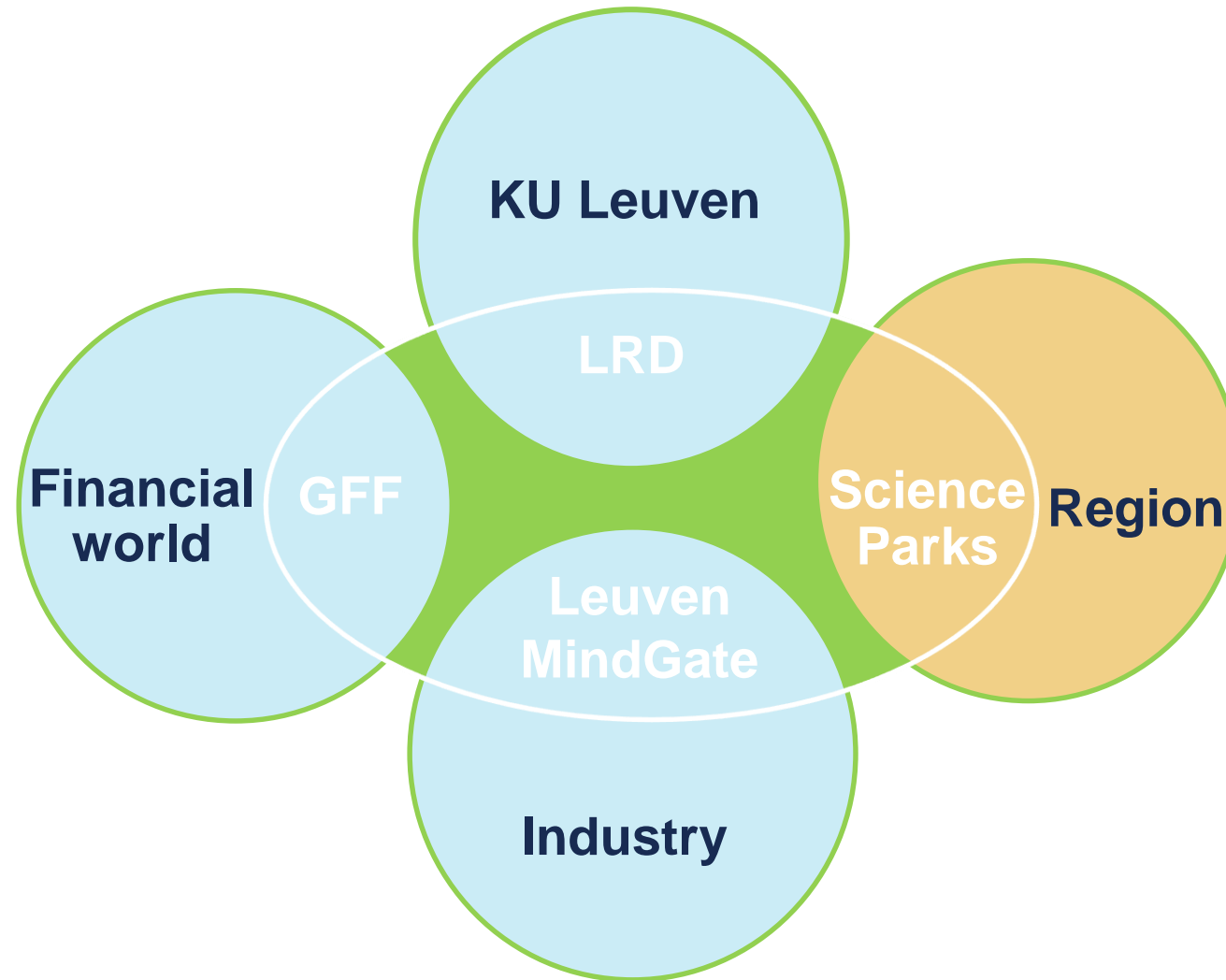
Smile Invest

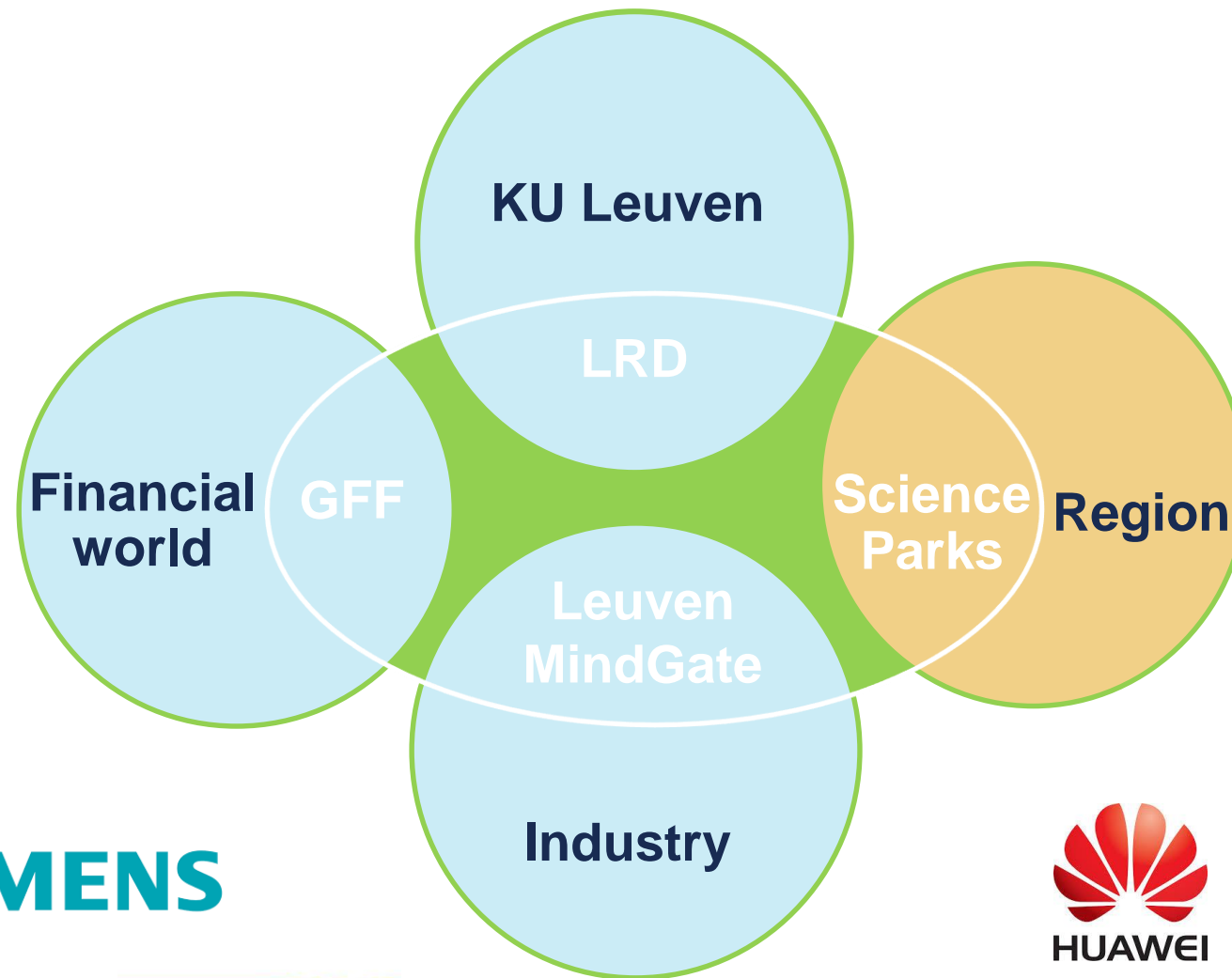
Imec Xpand



**BNP PARIBAS
FORTIS**





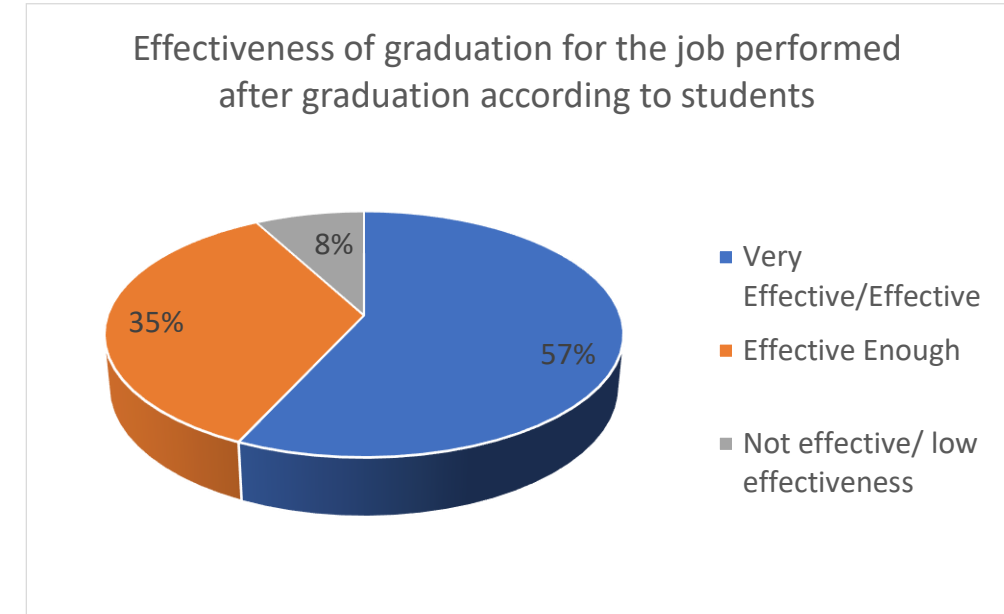
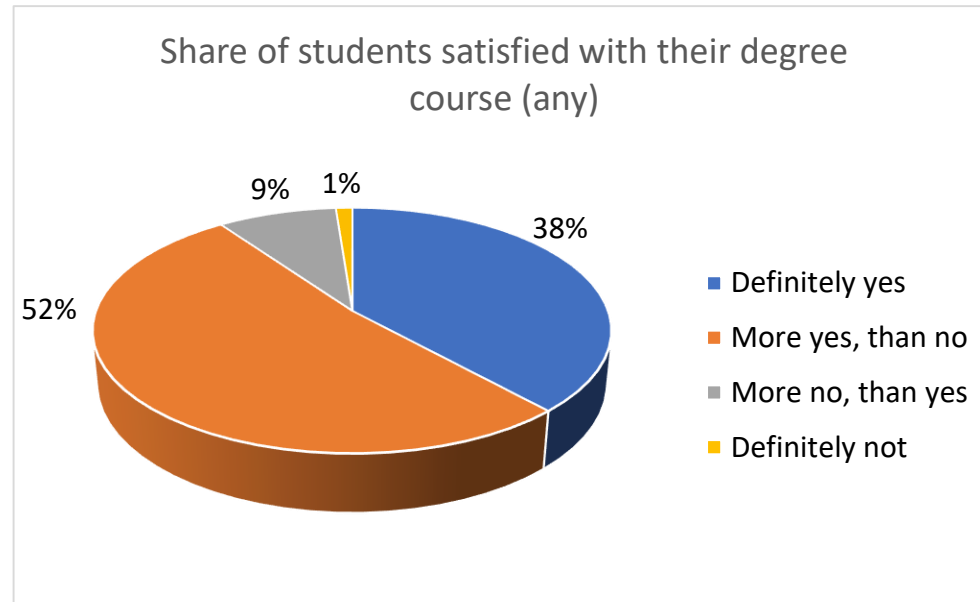


SIEMENS



Education and human capital development in Politecnico di Torino

- Quality of education is well rated by students (2017)



- Retention of graduate students in the Turin area
- Students tend to choose PoliTo because employability rate it guarantees after graduation

70 % willing to work in the local region (2017)

86,4 % of employment after graduation (2018)

Project Based Learning at Aalborg University

"AAU's PBL model has long been characterized by problem-solving group work based on real-world projects, often performed in cooperation with the business world."

Independent acquisition of skills and knowledge

Interdisciplinary and team work

Problem and result oriented



Strong demand for AAU students in labour market

STUDENTS

53 % of Master theses in cooperation with external organisations

67% of graduates collaborated with private/public organisations during study

62% of graduates have a job within 0-3 months after graduation

Case Studies next steps

- 1st workshop September
- 2nd workshop November
- High Quality case studies published on JRC RIO website
- Book project



Thank you

Questions and inputs/feedback?

You can find me at **athina.karvounaraki@ec.europa.eu**

Knowledge transfer at the University of Bologna

Founded in 1088, the University of Bologna is a comprehensive research university with very strong entrepreneurial activities.

Seven industrial interdepartmental research centres (CIRI)

Competence Centre Industry 4.0

IPR activities



A reference point at national and regional level in university IPR and knowledge transfer

University IPR regulation issued in 1996 – a pioneer act for Italian universities

Since 2015 wider span of KTO activities: licensing contracts signed and annual income with doubled results in 2017 compared to 2014; in 2017 increase of 94% of the filed patent applications compared to 2014

Aalto student movement and Aalto Entrepreneurship Society

Aalto University has fostered a local culture of entrepreneurship developed with the active top-down support to the strong bottom-up drive for innovation.

Startup Sauna

Design Factory

Urban Mill



Start-up driven innovation ecosystem and student-centric model

70-100 start-up companies created annually within the Aalto ecosystem

1041 commissioned projects with companies (2013-2017)

93 granted patents (2013-2017)

Examples use of U-Multi Rank in RIA

Knowledge transfer indicators	Regional engagement indicators
<ul style="list-style-type: none">Income from private sourcesCo-publications with industrial partnersPatents awardedCo-patents with industryPublications cited in patentsIncome from private sourcesCo-publications with industrial partnersPatents awarded (size-normalised)Industry co-patentsSpin-offsIncome from continuous professional development	<ul style="list-style-type: none">Student internships in the regionBA theses with regional organisationsMA theses with regional organisationsRegional joint publicationsIncome from regional sourcesBA graduates working in regionStudent internships in regionRegional joint publicationsIncome from regional sourcesMA graduates working in regionGraduates employment in the regionStrategic research partnerships in the region

In red the KT indicators that appear in both RIA and UMR

Indicator Box A: Education and human capital development

Inputs	'Results' indicators and 'Impact' indicators
<ul style="list-style-type: none">• Grants and scholarships for students from local/regional private sector• Credit bearing courses established through a direct request or with the involvement from non-academic local/regional organisations;• Tailor-made academic programs in partnership with businesses• Participation non-academic agents in curricula design• Joint PhD Programmes and industry sponsorship of post graduate education• Entrepreneurship teaching and learning; skills development• Inter-sectorial mobility of teaching staff• Labour outcomes and student satisfaction post-graduation• Regional student retention• Life-long learning and non-academic education• Graduate tracking of salaried employment	<ul style="list-style-type: none">• Entrepreneurship education: number of students enrolled in entrepreneurship courses as % of total students• the number of students attending internship• Number of faculty members taking a temporary position in a non-academic organisations;• Number of employees from non-academic organisations taking temporary teaching and/or research positions at university• Labour outcomes and postgraduate labour surveys that measure satisfaction with knowledge gained at university• Student internships in the local region: out of the students who did an internship, the percentage where the internship was with a company or organisation located in the region• BA theses with local/regional organisations: degree theses of bachelor graduates done in cooperation with organisations (industry, public, non-profit organisations) in the region• MA theses with local/regional organisations: degree theses of master graduates done in cooperation with organisations (industry, public, non-profit organisations) in the region• % academics teaching in courses required by local/regional firms; or income received from non-credit bearing teaching and associated activities for local/regional clients• Graduate employment: percentage of graduates working in the region after graduation• Wages of university graduates (3-5 years after graduation)

Box B: Research, technological development, knowledge transfer and commercialisation (with involvement of local or regional partners)

Inputs	'Results' indicators and 'Impact' indicators
<ul style="list-style-type: none">• Research activities• Knowledge and technology transfer• Consultancy and contract research• Collaboration with regional private partners• Inter-sectorial mobility of research/teaching staff• Industry funded research positions• Shared R&D facilities• International staff	<ul style="list-style-type: none">• R&D related income from local/regional private sector• Resources generated from contract research and consultancy work local/regional industry• Strategic research partnerships in the region• Regional partnerships of the Tech Transfer Office• Patent (applied/granted), licensing income from local/regional industry• Regional joint research publications within local/regional industry• Shared R&D facilities with local/regional industry• Mobility of university staff to or from local business enterprises• Research staff with a dual affiliation at local/regional business enterprise• Industrial PhDs that involve local/regional industry; % of PhDs undertaken jointly with private actors or the number of postgraduate students directly sponsored by local/regional industry R&D prizes and innovation prizes awarded by local/regional industry• Professorships or other university positions (partially) funded by local/regional industry• Public private co-publications

Indicator Box C: Entrepreneurship and support to enterprise development (within the local region or with involvement of local or regional partners))

Inputs	'Results' indicators and 'Impact' indicators
<ul style="list-style-type: none">• Industry liaison offices, knowledge and technology transfer offices;• Business incubators, and accelerators• Access to seed funding and venture capital• Science park, technology park or innovation hub• Other business-related infrastructure, facilities and services	<ul style="list-style-type: none">• University spin-off and start-up companies (number of, employment generated, turnover)• Student start-ups (number of, employment generated, turnover, private funding raised, nature of university support)• Investments of industry or public sector partners

Indicator Box D: Regional orientation, strategic development and knowledge infrastructure (with involvement of local, regional, national or foreign partners)

Inputs	'Results' indicators and 'Impact' indicators
<ul style="list-style-type: none">• Profiling to reflect regional specialisation and objectives• Involvement in regional innovation strategy setting• Regional knowledge infrastructure;• Capacity for regional socioeconomic development	<ul style="list-style-type: none">• Income from regional sources: proportion of external research revenues – apart from government or local authority core/recurrent grants – that comes from local/regional sources (i.e. industry, private organisations, charities).• Joint agenda setting with regional partners• Profiling strategies (PR and marketing) related to regional needs and specialisations• HRM and staff performance assessment related to regional needs and specialisations• Formation of social ties and networks with local/regional stakeholders and partners• Contributions to the creation of a local/regional entrepreneurial ecosystem• Contribution to embedding the regional innovation system in international R&D networks (international co-publications; participation in international research projects; attraction of foreign staff)• Contribution to the investment climate (attraction of private investments in the region e.g. by foreign or national firms)

Regional context indicators

Inputs	'Results' indicators and 'Impact' indicators
<ul style="list-style-type: none">• Framework conditions (human resources, attractive research systems, innovation friendly environment)• Investments (finance and support; firm investments)• Innovation activities (innovators, linkages and intellectual assets)• Employment and sales impacts	<ul style="list-style-type: none">• Percentage population aged 30-34 having completed tertiary education• Percentage population aged 25-64 participating in lifelong learning• International scientific co-publications per million population• Scientific publications among the top-10% most cited publications worldwide as percentage of total scientific publications of the country• R&D expenditure in the public sector as percentage of GDP• R&D expenditure in the business sector as percentage of GDP• Non-R&D SME innovation expenditures as percentage of total turnover• SMEs introducing product or process innovations as percentage of SMEs• SMEs introducing marketing or organisational innovations as percentage of SMEs• etc