Demand Analysis for RDI projects

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Structure

JASPERS Smart Development

Demand Analysis Principles

Target Groups and Demand Drivers

Demand Drivers Operationalized

Outputs and Outcomes

Data Sources and Presentation

JASPERS: Who are we?

JASPERS: **J**oint **A**ssistance to **S**upport **P**rojects in **E**uropean **R**egion**s**

- Technical assistance partnership between European Commission (DG REGIO), European Investment Bank (EIB) and European Bank for Reconstruction and Development (EBRD)
- Divided into
  - JASPERS Advisory Preparation Support (Smart Development, Roads, Rail & Public Transport, Water & Wastewater, Solid waste & Energy)
    - Major projects (eligible expenses > 50 m EUR)
    - Non-major projects (e.g. borderline, innovative)
    - Horizontal support (e.g. guidance on CBA, policy measures, programs)
  - Networking Platform & Competence Center
  - Independent Quality Review

JASPERS Smart Development Division: Areas of Assistance in 2014-2020

- Smart Development Division established early 2015

- 10 experts (engineers, economists, environmental expert)
  - Research, Development, Innovation (RDI)
    - Ca. 30 projects for total investment costs of approx. 3 billion €
  - Information and Communication Technology (ICT)
  - Health
  - Education
  - Urban & territorial development including Smart Cities and multi-sectoral projects

JASPERS Support to Project Preparation

- Support to project preparation means continuous quality and compatibility check during the project preparation phase with focus on
  - Demand analysis
  - Option analysis
  - Technical feasibility
  - Financial analysis, economic CBA and risk assessment
  - Analysis of environmental soundness
  - State Aid
- Forms of support
  - Guidance notes, VCs, TCs, emails…
  - Action Completion Note at the end with summary of conclusions
- JASPERS does not prepare projects on behalf of the beneficiary
- **Early involvement** during the project cycle yields the best results

7 Steps of Project Development

1. Presentation of the socio-economic, institutional and political context

2. Definition of objectives

3. Project identification

4. Technical feasibility & Environmental sustainability

- **Demand analysis**
- **Option analysis**
- **Environmental analysis, including EIA and climate change**

5. Financial analysis

6. Economic analysis

7. Risk assessment

Demand analysis

The demand analysis provides quantitative and qualitative evidence to assure the evaluator that the proposed infrastructure will be consistently utilized and that its outputs will be used, and be of value to society.

Provides justification for the project

Interrelations between project definition elements

- objectives address demand (objectives > demand)
- project outputs linked to benefits

There are two types of demand

1. Direct demand for the infrastructure, i.e. showing that once constructed it will be also used, and
2. Indirect demand, i.e. demand for the output enabled by the RI

Demand analysis should be evidence-based

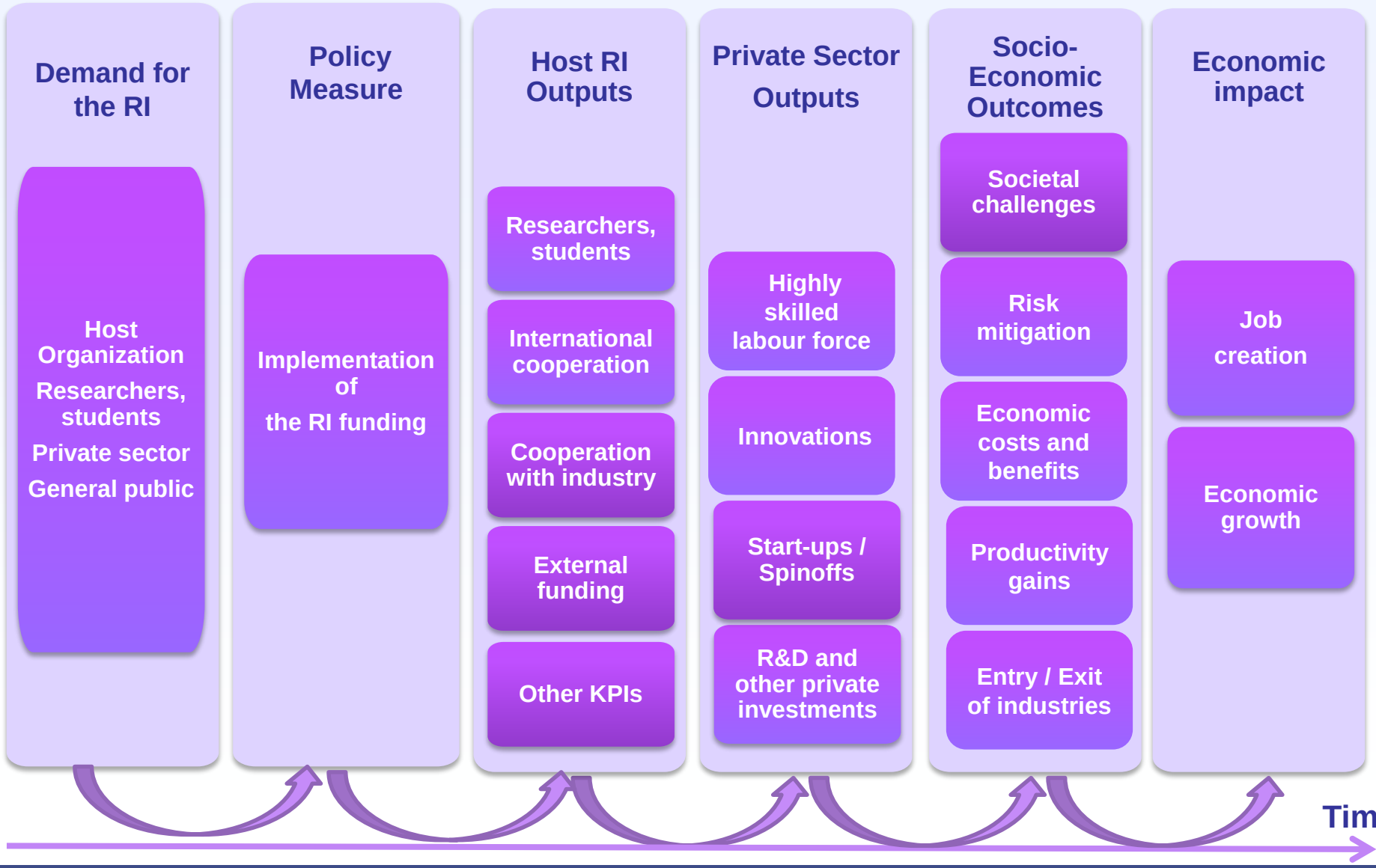
Demand analysis

- Market analysis
  - Research field's perspectives (future demand)
  - Size of the market
  - Competition in the market (trends)
- Ensure optimal scale and utilisation of the project
- Risk of oversizing the project
  - embed option to expand capacity at a later stage
- Thorough assessment of demand risk and related prevention / mitigating measures, for example:
  - correct "optimism bias"
  - availability of complementary products / infrastructure
  - pricing strategy

Stakeholders of the RI project

- Host organization
  - Beneficiary, consortia/organization managing the RI
- RI Research Infrastructure attached to the Host organization
- Researchers, students – internal, external
  - Professors, post-docs, other researchers
  - Students at any level
- Private sector
  - Enterprises in any sector
- General public

RDI Model


Demand for the RI
Host Organization
Researchers, students
Private sector
General public
Policy Measure
Implementation of the RI funding
Host RI Outputs
Researchers, students
International cooperation
Cooperation with industry
External funding
Other KPIs
Private Sector Outputs
Highly skilled labour force
Innovations
Start-ups / Spinoffs
R&D and other private investments
Socio-Economic Outcomes
Societal challenges
Risk mitigation
Economic costs and benefits
Productivity gains
Entry / Exit of industries
Economic impact
Job creation
Economic growth
Time

Target Groups and Demand Drivers I

Target Groups	Demand Drivers
Host Organization	Push forward the frontier of science / technology development Demand originating in the development in science Increase the knowledge and create applications by reaching out to neighboring scientific communities Open up new fields of application Competitiveness and reputation – external funding, cooperation Attractiveness as a workplace for lead researchers Strengthen Europe's role in the field of science
Researchers, students	Create and share knowledge Networks, projects, cooperation opportunities Prestigious degrees Visiting researchers / professors

Target Groups and Demand Drivers II

Target Groups	Demand Drivers
Private sector	Obtaining new knowledge via spillovers and/or knowledge / technology transfer to innovate Access to the RI for own research / experimentation Academy-Industry partnerships Highly skilled labour force
General public	Contributing towards solving societal challenges Mitigation of risks related to health, environment etc Technological advancement

Demand Drivers – Operationalization I

Host Organization, scientific community

- Proof of scientific / technological excellence
- Recent breakthroughs expected to change the field / paradigm
- Interdisciplinarity – track record and opportunities
- Technology development (jointly with the private sector)
- External funding – national and international
- Cooperation, networks, etc
- Planned visits of foreign professors, researchers
- Identify gaps and comparative weaknesses / advantages of EU in the field of science

Demand Drivers – Operationalization II

Private sector

- Public investment in the RDI field
- RDI field's growth and profitability over time
- Potential business users
- Knowledge intensity in related sectors
- Access to venture capital (risk taking opportunities)
- Incubator / knowledge & tech transfer volume
- Academy-Industry linkages
- Industry involvement in RI's governance

Demand Drivers – Operationalization III

Researchers, students

- Scientists in the RDI field and geographical area
- Competing facilities
- Technical characteristics and scientific specialization of the RI
- Reputation and track-record of researchers
- RI's ability to attract external funding and users
- Students in the RI's or related fields in the geographical area
- Demand for RDI skills developed in the RI on the labour market

Demand Drivers – Operationalization IV

General public

- People affected by environmental / health risks

and are direct target group of the RI, e.g. patients treated by innovative medical technologies

- RI outreach activities

Outputs* – Operationalization I

Host Organization

* As in LV OP

- Researchers working in RI*
- New researchers in supported entities*
- Contract research - Enterprises cooperating with RI institutions*
- Competitive research funding - Horizon2020 applications exceeding quality threshold (3/5), including BalticBonus initiative*
- Scientific articles published with ERDF support*
- Private investments complementing state aid for RDI projects*
- New products and technologies to be commercialized and developed with ERDF support*

- ERA Compliance: Excellence and Open access
- Patents, licenses, trademarks etc
- Incoming visiting professors / researchers
- Income from incubator / knowledge & tech transfer activities
- Students in and degrees from different programs related to the RI

Outputs – Operationalization II

Private sector

- Spin-offs / start-ups from project (annual)
- Firms using the RI to innovate (cooperation for innovation)
- Foreseen number of patents due to the use of the RI (annual)
- Business generation and cost savings through knowledge obtained via licenses and tech transfer (trend)
- Non-business sector organizations benefitting of knowledge / technology spillovers

Outputs - Operationalization III

Researchers, students

- Researchers / post-docs / PhD students using the RI
- Personal KPIs – depends on the organization
  - PhD / Masters degrees
  - Scientific publications by the RI's users
  - Citations to the publications of the RI's users
  - Patents
  - Visiting positions
  - Involvement in international research projects
- Trainings offered by and at the RI

Outputs – Operationalization IV

General public

- Cost savings due to environmental and other risk mitigation
- Effect on life expectancy

- People potentially visiting the site or interested in other outreach activities

Qualitative Evidence Collection

- Project-specific data
  - Track records of the researchers, departments and faculties in the host organization to indicate existing competencies and excellence
  - External funding in the field of science
  - Dedicated data collection on potential future use and sector perspectives, e.g. surveys, interviews
    - Researchers, students
    - Industry
  - Letters of Intent from potential users
  - Information on potential future cooperative projects
- Benchmarking with similar projects
- Relevant literature, consult reports, national studies

Sources for Numeric Data I

- National Statistical Offices
- Ministries and Sectoral Agencies
- Host organization's own data

- Eurostat – EU, national, regional statistics
- ECOFIN – macroeconomic projections
- ECB – Euro area macroeconomic statistics
- OECD – e.g. STI statistics (patents)
- World Bank, IMF – long-term projections
- European Spatial Planning Observation Network (ESPON)

- Web of Science, Scopus: bibliometrics

Sources for Numeric Data II

- Scoreboards commissioned by EC
  - European Innovation Scoreboard (ex-Innovation Union Scoreboard)
  - Regional Innovation Scoreboard
  - European Service Innovation Scoreboard

- Financial data on firms potentially using the RI
  - Private data providers, e.g. Bureau van Dijk, Amadeus
  - National Business Register, Structural Business Statistics (NSO)

Ways to Present Data

- By geographical entity: NUTS2/3
- By source of funding / sector of performance: Business enterprise, HEI, government, private non-profit
- By sector of economic activity: NACE Rev. 2
- Historical time series indicating changes over time
  - Breaks in series due to changes in underlying definitions and data collection - Metadata always useful
- Predictions
- Single data points / single points in time
- Single indicators / Composite indicators
- Benchmarking - Identification of comparable facilities, regions, sectors
- Levels, changes, averages, variation, per capita / intensity
- Tables, charts, figures– sometimes more reader-friendly formats

Relevance Accuracy Reliability Comparability Clarity of presentation

THANK YOU FOR YOUR ATTENTION.

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JASPERS Web Site
www.jaspers-europa-info.org

JASPERS Networking Platform
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