

## Scientific Impact

### ***[basis, accessible through internal monitoring]***

- number of publications (in different types of mediums (journals...))<sup>123</sup>
- number of publications in high impact factor journals<sup>1</sup>
- tracking of publication baskets (by impact factor) for a project
- software tools above a relevant impact threshold
- new scientific instruments/ infrastructure developed
- research results fed into shared data sets [ELIXIR type]
- applications to use data produced by RI<sup>1</sup>
- use of open data (access and download)<sup>13</sup>
- presence of RI in relevant committees that define scientific norms
- number of scientific users<sup>12</sup>
- user satisfaction<sup>1</sup>
- scientific collaborations (joint projects with other RIs)
- excellent collaborations with RIs (use of RI by world leading teams)<sup>1</sup>
- funding grants from national/ supra-national funding sources<sup>1</sup>
- organisation of scientific events (conferences, workshops...)<sup>3</sup>
- visit of scientific events<sup>3</sup>

### ***[impact, requires external analyses, surveys, estimations, ...]***

- first and second level citations for publications<sup>13</sup>
- prizes won
- Uptake of software tools outside RI (science)<sup>3</sup>
- access to RI digital resources<sup>1</sup>
- Uptake of instruments outside RI
- Uptake of accessible data sets outside RI (science)
- Share of granted projects from project applications<sup>1</sup>

<sup>1</sup>: indicator (also) proposed by OECD (in the same or similar definition)

<sup>2</sup>: indicator (also) proposed by the ACCELERATE project (in the same or similar definition)

<sup>3</sup>: indicator (also) proposed by CSIL (cost-benefit-analysis)

# Human Capital Impact

## ***[basis, accessible through internal monitoring]***

- Number of continuously employed scientists (locally)
- Number of continuously employed scientists (entire RI)
- Number and duration of stays of Post-docs/Professors
- Number and duration of stays of MSc./PhD students
- Number and duration of internships
- Number of trainees
- Grants for trainees: Grants for trainees to follow RI trainings<sup>1</sup>
- Number of technical staff
- Number of administrative/ research management staff
- Number of training measures
- Number of students (national/international, master/PhD) trained within RI<sup>1</sup>
- Training programmes for higher education students<sup>1</sup>, (short-term/ long-term), number of attendees<sup>3</sup>
- Knowledge sharing and improvement:  
Number of conferences and seminars within RI / organised by RI<sup>1</sup>

## ***[impact, requires external analyses, surveys, estimations, ...]***

- Satisfaction of people trained<sup>1</sup>
- Number of masters and PhD from local universities using the RI<sup>1</sup>
- Academic career advances after leave (promotion, takeover of new chair)
- Salary increase after leave
- Career advances through qualification in (international) science administration
- Career advances through technical qualification
- prevention of brain drain / increase qualification level of population<sup>2</sup>

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## Economic / Innovation Impact

### ***[basis, accessible through internal monitoring]***

- Persons employed by RI (FTE)<sup>12</sup>
- New tax payers: employees living in the local areas for at least 3 years<sup>1</sup>
- Direct (local) expenditure of RI, employees & visitors x multiplier<sup>1</sup>
- Number of regional and local suppliers<sup>12</sup>
- Beamlines or other facilities in operation<sup>2</sup>
- Production capacities (of drugs, etc.)<sup>2</sup>
- Number of patents filed<sup>12</sup>
- List of technologies developed
- Joint technological developments with industry<sup>1</sup>
- collaborative projects with industry / with regional industrial partner<sup>13</sup>
- Number and value of patents<sup>1</sup>
- collaborative projects with industrial partners<sup>1</sup>
- co-patenting with companies<sup>13</sup>
- Patent citations<sup>3</sup>
- Number of students working in enterprise and using RI<sup>1</sup>
- Use of a novel technique or procedure<sup>2</sup>[internal monitoring of transfer pathway]
- Number of projects funded by industry<sup>1</sup> (total, national, regional)
- List of technologies licensed, Spin-off created (if any)/ start-ups<sup>13</sup>
- Survival rate of start-ups, spin-offs<sup>3</sup>
- Spin-off/ start-up lifecycle (number of years)<sup>3</sup>
- Number, value, technological ambition of collaborations by partner type (firm size/sector)
- Number and volume of private enterprises' utilisation of RIs facilities for experiments and tests
- number of regional firms using RIs<sup>1</sup>
- Number, value, technological ambition of procurement by partner type (firm size/sector, regional/national/supra-national)<sup>13</sup>
- Use of software tools outside RI (business)<sup>3</sup>
- Usage of RI information (e.g. via browser)<sup>1</sup>
- Use of accessible data sets outside RI (business)<sup>1</sup>
- Efficiency gains through use of RI data<sup>1</sup>
- Stimulating use of new technologies<sup>2</sup>

### ***[impact, requires external analyses, surveys, estimations, ...]***

- industrial sales impact: Number of new products, services<sup>3</sup>
- technology level impact: Number of new technologies, designs and prototypes<sup>3</sup>
- market creation impact
- market expansion impact
- increased economic activity / improved job opportunities in the region<sup>2</sup>
- impact on behaviour or wellbeing,  
e.g. decrease in mortality rate due to use of drug or treatment, reduced dependence on fossil fuel due to increased use of renewable energy<sup>2</sup>

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## Societal Impact

### ***[basis, accessible through internal monitoring]***

- Tracking of visitors at RI
- Public awareness: Visitors on RI website<sup>1</sup>
- Tracking of school classes and or university courses visiting<sup>2</sup>
- RI at exhibitions, science fairs, TEDs, lectures, workshops engaging the public
- Open days or other public promotion events: number of events, number of visitors<sup>1</sup>
- Outreach activities: People engaged in outreach activities<sup>1</sup>
- Gender balance (employees, users)<sup>2</sup>

### ***[impact, requires external analyses, surveys, estimations, ...]***

- Inclusion of topics in schools and academic curricula
- Presence of RI related topics in social media and the press, number of followers<sup>13</sup>
- Presence of RI in (local, regional) online media<sup>123</sup>
- Number of visitors to RI exhibitions<sup>3</sup>
- Energy saving: Stories/ label/ evaluation<sup>1</sup>
- Waste management: Stories/ label/ evaluation<sup>1</sup>
- Gender balance: Stories/ label/ evaluation<sup>1</sup>
- Corporate social responsibility: Stories/ label/ evaluation<sup>1</sup>
- Contribution to inclusion goals: creation of jobs that enhance social inclusion
- increased trust in science<sup>2</sup>

## Policy Impact

### ***[basis, accessible through internal monitoring]***

- presence of RI in relevant thematic committees
- presence of RI in relevant standardisation committees
- participation of RI in exchanges with relevant policy makers<sup>13</sup>
- participation of RI in local/ regional networks (e.g. clusters, innovation networks)
- Contracts (number, volume) with a specific country, region, industry<sup>2</sup>
- public awareness / taxes going to RI<sup>3</sup>
- contracts with public services<sup>3</sup>
- number of reports / databases to support public policy<sup>3</sup>

### ***[impact, requires external analyses, surveys, estimations, ...]***

- take up of new topics proposed by RI as funding sections
- notable changes in regulations
- notable changes in funding
- Provision of expert advice in public policy<sup>1</sup>
- Production of resources (databases, biobanks, informatics resources) in support of public policies<sup>1</sup>
- Production of experimental/observational data in support of public policies<sup>1</sup>

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