



Revisiting RI impact assessment after the Covid-19 crisis

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Background

OECD publishing

STRENGTHENING THE EFFECTIVENESS AND SUSTAINABILITY OF INTERNATIONAL RESEARCH INFRASTRUCTURES

OECD SCIENCE, TECHNOLOGY
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POLICY PAPERS
December 2017 No. 48

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REFERENCE FRAMEWORK FOR ASSESSING THE SCIENTIFIC AND SOCIO-ECONOMIC IMPACT OF RESEARCH INFRASTRUCTURES

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Research Infrastructures mobilisation in response to COVID-19: lessons learned

Virtual workshop hosted by the OECD and Science Europe

11 May 2021, via Zoom, 11:30-15:30 CET (Paris time)

<http://oe.cd/SCIENCEEUworkshop>





Why assessing impact ?

Interested stakeholders	Main interest
National authorities	<ul style="list-style-type: none"> Justify large investment to finance ministry and to other political authorities (parliament...). Demonstrate, maintain or develop leadership and attractiveness at national/international level. National authorities are usually interested in a limited number of generic indicators which provide an overall picture of the impact, in particular the “scientific and economic return on public investment”.
Regional/local authorities	<ul style="list-style-type: none"> Justify investment; increased attractiveness of the area; benefit to local businesses and the development of local/regional innovation ecosystems; raise attractiveness and quality of local higher education institutions.
RI funders	<ul style="list-style-type: none"> Value for money; maximise return on investment. Top priority is usually the scientific and technological impact but funders often require RIs to demonstrate additional benefits.
RI initiators (individuals and institutions at the origin of the RI)	<ul style="list-style-type: none"> Ex ante assessment to demonstrate potential impact for funders, national authorities and local authorities and help raise funding.
RI management	<ul style="list-style-type: none"> Monitor impact on a regular basis to improve performance and gather information to make the case to funders when upgrades are required.
RI hosts	<ul style="list-style-type: none"> Demonstrate the value of the RI in terms of scientific attractiveness, training and education.
Scientific community	<ul style="list-style-type: none"> Advocate for new (ex ante assessment) or updated RIs to foster new scientific knowledge and developments.
Civil society/general public	<ul style="list-style-type: none"> Value for money, new scientific knowledge, general benefit to society (e.g. health, energy, environmental topics). On case by case basis, impact on the environment and/or on local populations.



What are stakeholders interested in ?

Policy makers <ul style="list-style-type: none">- Science- Specific technological objectives- Science policy: internationalisation capacity building- (Support to) Public policies: Environment / Sustainable development- Data policies: data collection data provision and open access	Funders <ul style="list-style-type: none">- Science- Innovation potential- Skills Training- Science outreach- Science policy: maximising scientific and socio-economic impact long-term sustainability
Local authorities <ul style="list-style-type: none">- Science- Specific technological objectives- Skills Training- Science outreach- Regional development Impact of “made in”	Hosts (e-Infras) <ul style="list-style-type: none">- Data policies: quality data collection data provision and access- Fostering open science and research- Training (data)- Support to public policies: social sciences health Host (major regional partner) <ul style="list-style-type: none">• Enabling facility to support S&T advances (incl. provision of access and expertise)



What changed with COVID-19 ?

- RIs had to mobilise quickly for dealing with many issues, often beyond their traditional scientific field, and in a degraded environment
- RIs had to develop new fast-tracked and remote operating procedures
- RIs had to share/distribute data fast to various scientific communities, including non-experts, and to policy-makers
- RIs had to validate data before release and protect sensitive data



Important lessons learned from the COVID-19 crisis

- Preparedness and flexibility are essential
- Collaborative RI networks established prior to crisis greatly facilitate cooperative work and data sharing during crisis
- Digital processes were an important contributor to the resilience of RIs during the crisis
- The system needs to be pro-active to facilitate response in emergency: networking, training a workforce that can be mobilised quickly, cutting down administrative and legal requirements during crises, setting up initial development phase treatments/solutions
- RIs are now seen as a national asset for crisis management, this requires sustained/adequate support to maintain a state of readiness



Matching indicators to strategic objectives

Strategic objectives reformulated

- *be a national or world scientific leading RI and an enabling facility to support science*
- *be an enabling facility to support innovation*
- *become integrated in a regional cluster/in regional strategies/Be a hub to facilitate regional collaborations*
- *promote education outreach and knowledge transfer*
- *provide scientific support to public policies*
- *data policy, production and use*
- *assume social responsibility towards society.*



Framework content

Indicators are organized in line with seven common strategic objectives identified throughout the study.

i.e. do not use indicators that are not relevant to your strategic objectives...

Core Impact Indicators	Data
Be a national or world scientific leading RI and an enabling facility to support science	
S2- Number of citations	Total number of citations received by publications are include authors from RI or using the RI
S3- Number of publications in High Impact factor journals	Number of publications from RI users published within Q1 journals
S6- Number of scientific users	Number of users, Discipline distribution, Top scientific users, Nationality distribution
S11- Structuring effects* of the RI on the scientific community	Number of projects developed with other RIs, universities, etc. New collaborations...
S10 - Collaboration excellence (scientific)	Total number of applications for using the RI Total number of applications from world leading teams
S4- Number of projects granted	Number of projects funded by external grants (may be divided into user or discipline categories)



Adapting indicators post Covid crisis

Obj. 1: Be a national or world scientific leading RI and an enabling facility to support science	
S1	Number of publications
S2	Number of citations
S3	Number of publications in High Impact factor journals
S4	Number of projects granted
S5	RI attractiveness
S6	Number of scientific users
S7	User satisfaction
H8	Trained students satisfaction
S9	User project excellence
S10	Collaboration excellence (scientific)
S11	Structuring effects of the RI on the scientific community

Networking capacity between RIs has become a necessity to provided an added value to new reseach communities including non expert and beyond the original domain of the RI



Adapting indicators post Covid crisis

Obj. 5: Provide scientific support to public policies	
O45	Production of expert advices in support of public policies
O46	Production of resources in support of public policies
O47	Contribution of the RI researchers to Public Policies

A crucial contribution of RIs during crises; production of **trustworthy** data, resources and advice for public policies



Adapting indicators post Covid crisis

Obj. 6: Provide high quality scientific data and associated services	
O48	Production of experimental, observational data in support of public policies
T49	Data sharing
T50	Data commercial use and data services
T51	Data usage
H52	Use of the data for training
S53	Data openness
S54	Digital resource openness

During crisis, data resource openness becomes even more important, and should include openness to new/non expert users



Adapting indicators post Covid crisis

Obj. 7: Social responsibility	
O55	Energy consumption
O56	Waste management
O57	Gender balance and diversity
O58	Corporate social responsibility

This strategic objectives needs to be completed to include indicators related to societal challenges, including contribution to crisis management



Conclusions

- This framework is a tool, not a model !
- The link between strategic objectives and indicators is one of the major contributions of this work: The aim is to show how an RI achieves its goal through its whole set of activities. **The role of an RI for crisis management could be included as a strategic objective, in agreement with its governing board and funders**
- Performance evaluation and impact assessment are not identical; CII are not KPI; **the Covid crisis will certainly also affect (add new) KPIs for RIs**, related to their resilience during crisis, to their preparedness/responsiveness, to data access, to training, to making resources available during crisis, to fast track processes, to reduced administrative constraints etc.
- None of the indicators is mandatory. Each indicator should be carefully selected and adapted, as necessary, to the RI objectives and context, and the framework itself can be adapted and expanded as required.
- **This framework is not designed for direct comparative assessment of different RIs.**