

CANADA FOUNDATION FOR INNOVATION

# 2021 Report on results

An annual summary of  
project outputs and outcomes

November 2021

**INNOVATION**

Canada Foundation  
for Innovation

Fondation canadienne  
pour l'innovation



# 2021 Report on results

The purpose of the report on results is to provide a summary of the outputs and outcomes achieved through CFI-funded infrastructure as they relate to the overall objectives of the CFI, based on information provided through annual project progress reports (PPRs). The PPR is an online questionnaire which is completed by the researcher leading a CFI-funded project and submitted by the host institution after the infrastructure becomes operational. Institutions are required to submit a PPR for each funded project by June 30 each year, for four or five years depending on the award value.

The information considered in this report reflects performance reported from April 1, 2020 to March 31, 2021 only. Data is self-reported by researchers and submitted by funded universities, colleges, research hospitals and non-profit research organizations, and has not been independently verified by the CFI.

In August 2020, the CFI adopted the Canadian Research and Development Classification (CRDC) standard. In this year's report, the CRDC's fields of research and socioeconomic objectives replace the areas of application used previously.

Consult [Appendix 1 – Composition of the 2021 project progress report sample](#) for more information.

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## About the Canada Foundation for Innovation

The Canada Foundation for Innovation (CFI) makes financial contributions to Canada's universities, colleges, research hospitals and non-profit research organizations to increase their capability to carry out high-quality research.

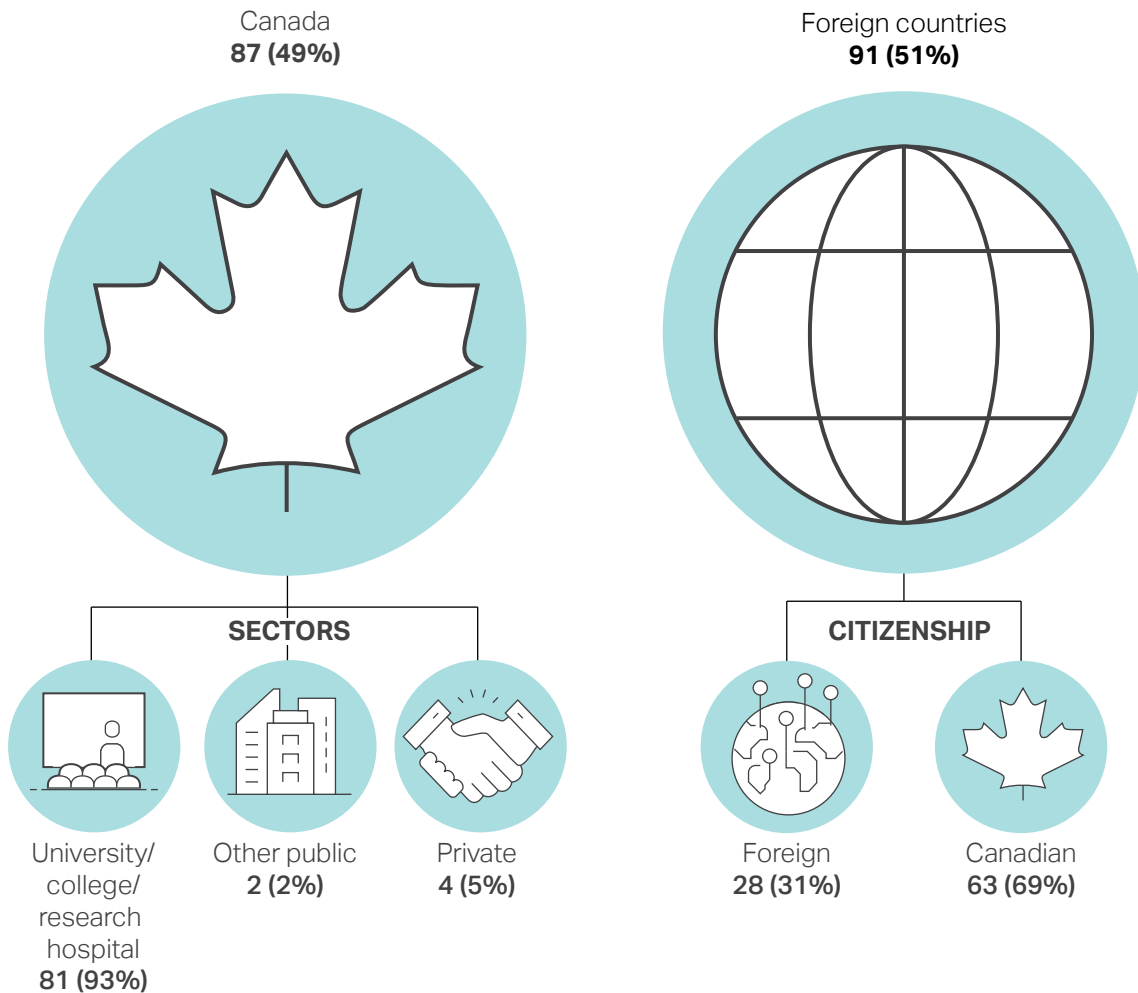
The CFI invests in infrastructure that researchers need to think big, innovate and push the boundaries of knowledge. It helps institutions to attract and retain the world's top talent, to train the next generation of researchers and to support world-class research that strengthens the economy and improves the quality of life for all Canadians.

**A promising future, now**  
25 years of investing in ideas that change our world

# Attracting and retaining world-class researchers

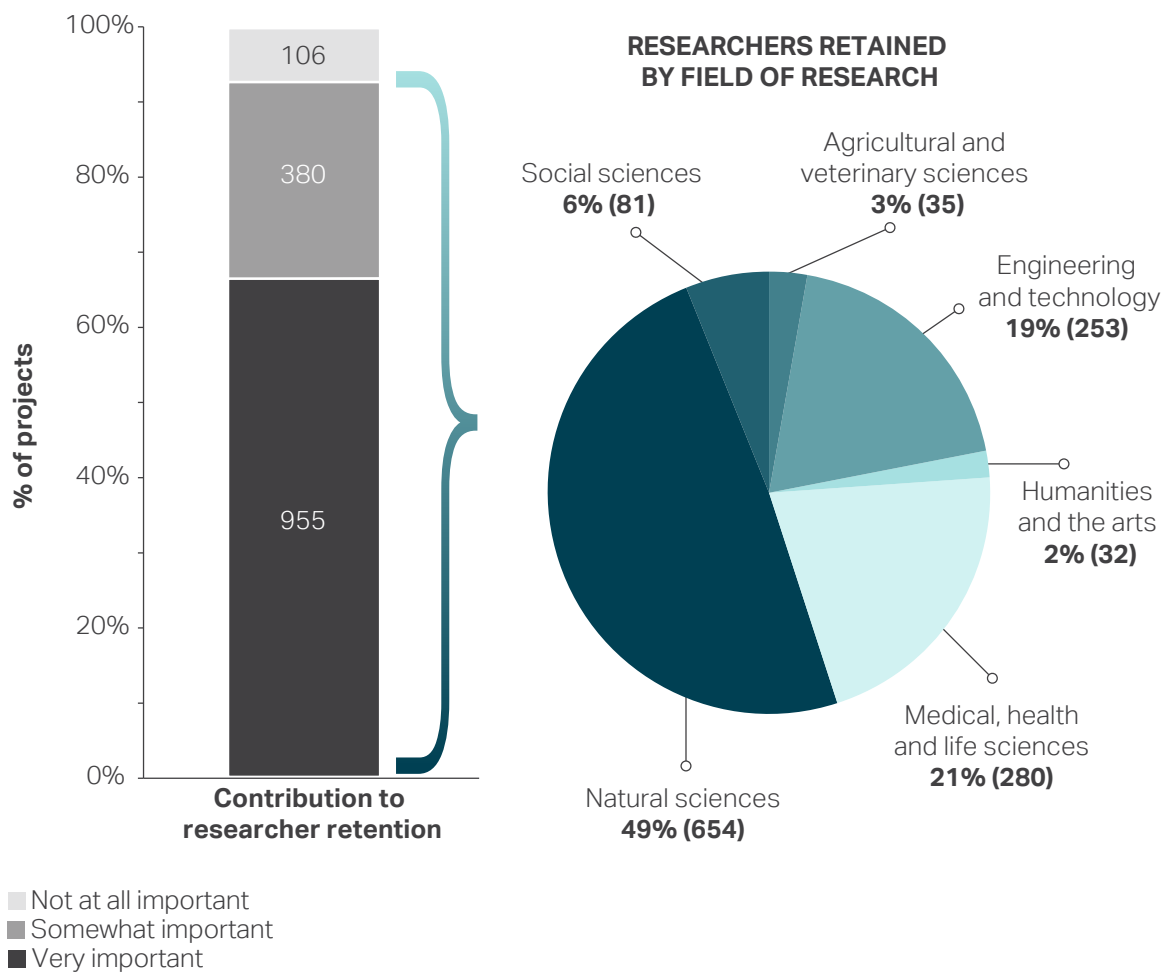
## Researcher attraction

Among the 178 newly recruited researchers leading CFI-funded projects, 97% indicated that CFI-funded infrastructure positively influenced their decision to join their institution. A little over 50% of new recruits (of Canadian or non-Canadian citizenship) were in foreign countries at the time of their hiring, suggesting that CFI-funded infrastructure **contributed to attracting international talent and internationally trained Canadian talent**. Those new recruits who were already in Canada (49%) came from different sectors but were predominantly from academia.



## Researcher retention

93% of researchers leading CFI-funded projects indicated that CFI-funded infrastructure **was important in their decision** to remain at their institution. Infrastructure funding helped retain researchers from all fields of research.

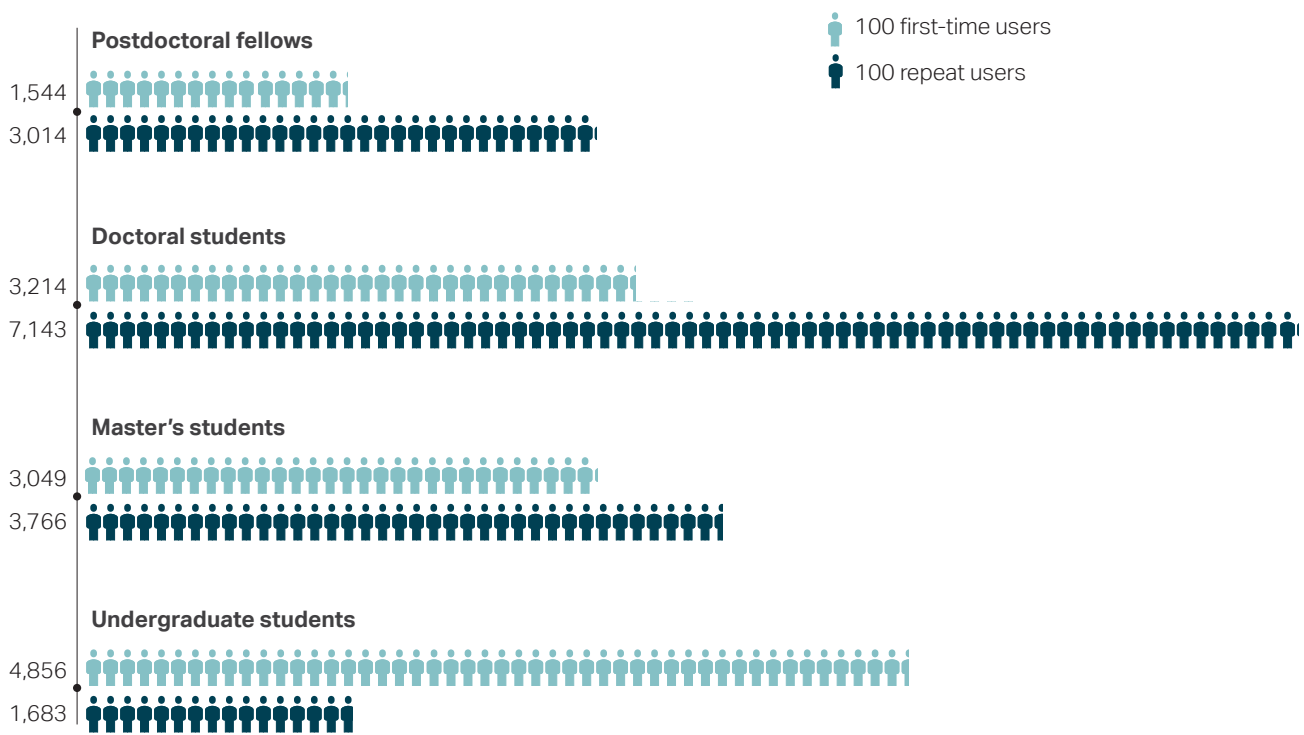


# Developing highly qualified personnel

## Trainees using infrastructure

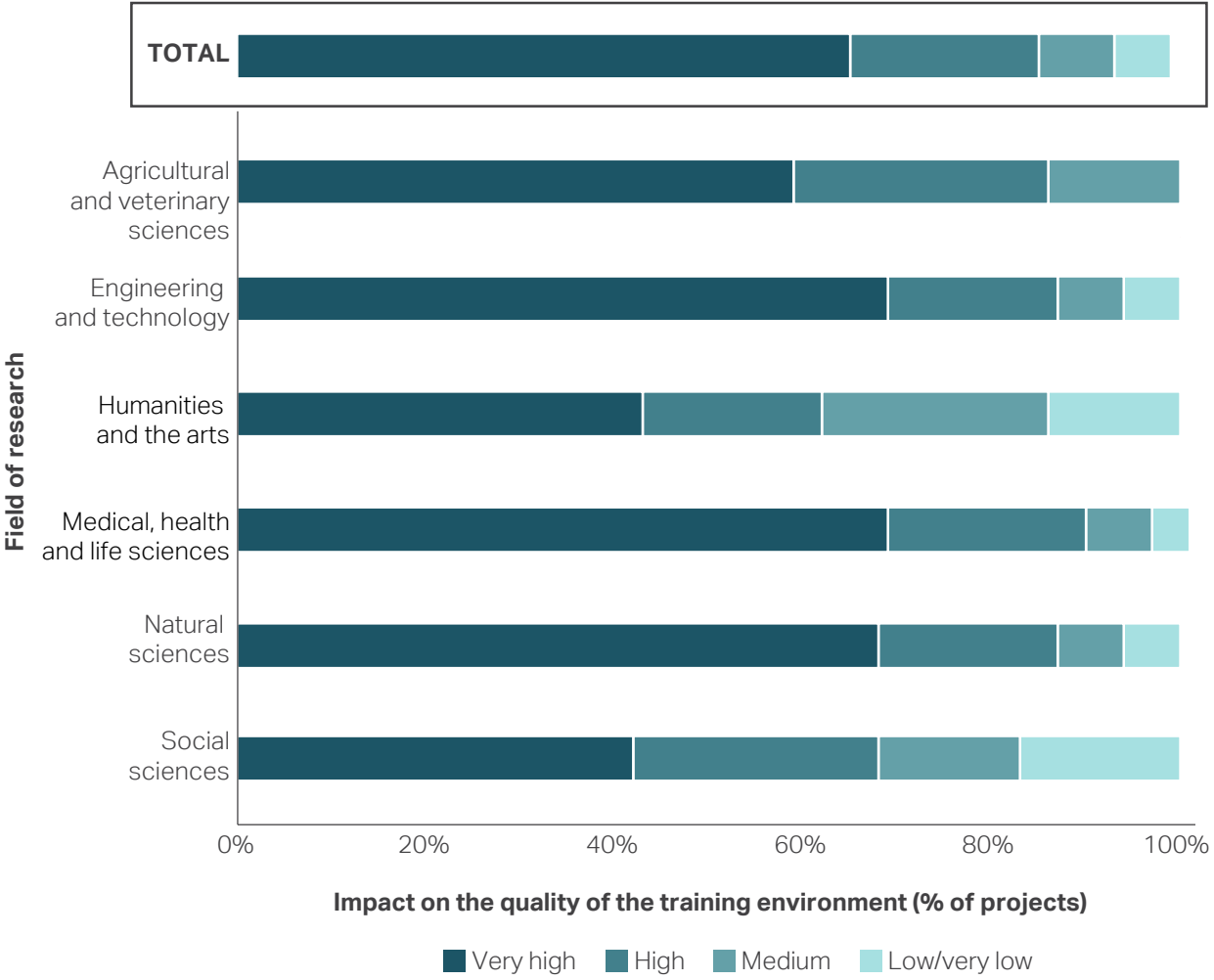
93% of researchers leading CFI-funded projects reported that CFI-funded infrastructure **was a key resource for the next generation of researchers.**

28,269 postdoctoral fellows and higher education students had the opportunity to expand their research skills using CFI-funded infrastructure. Of those, 45% used the infrastructure for the first time in 2021.



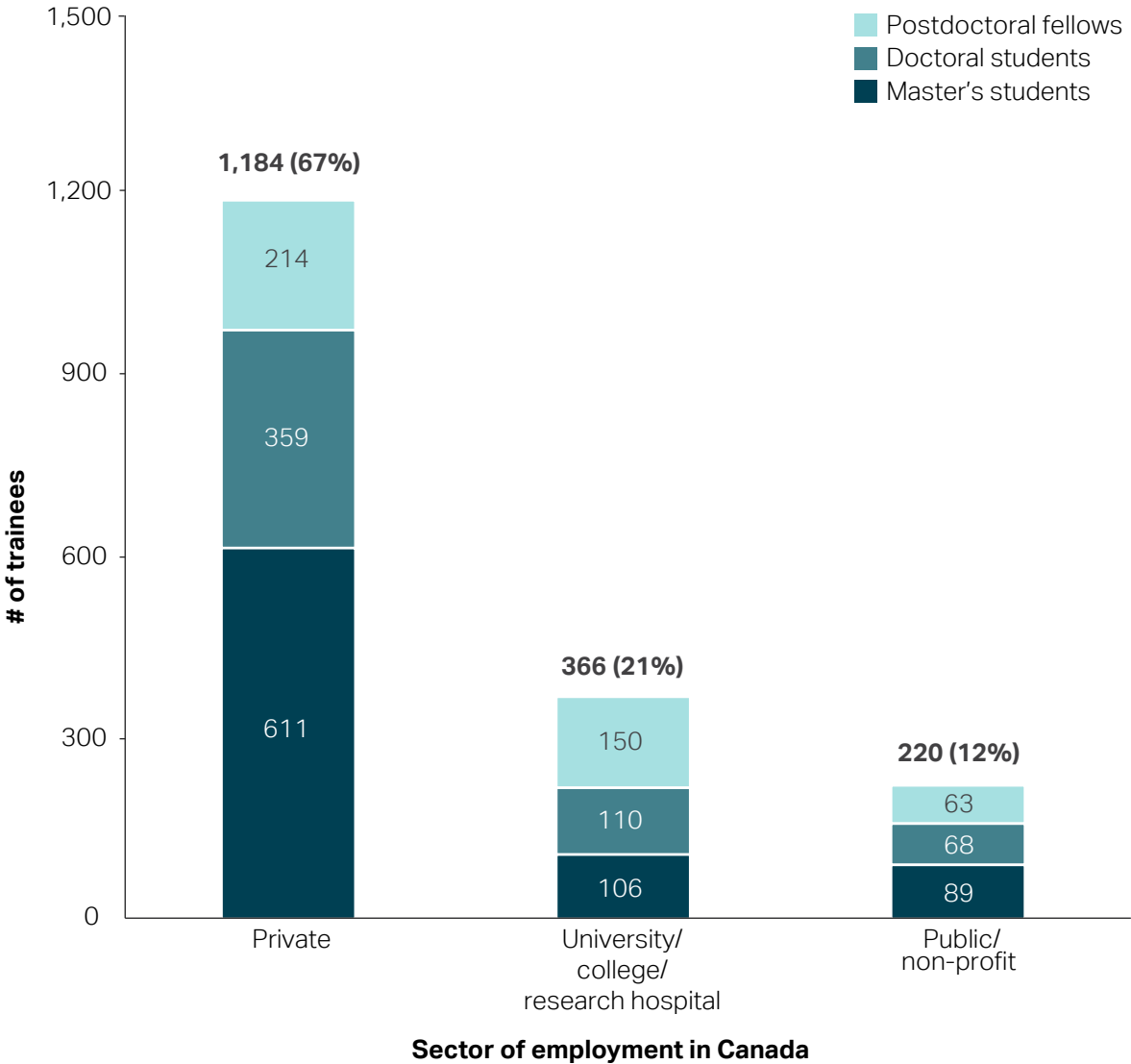
# Quality of training environment

86% of researchers leading CFI-funded projects credited their CFI-funded infrastructure with **having a high or very high impact on the quality of the training environment**. The data is relatively consistent across all fields of research except social sciences, and humanities and the arts, where ratings are lower.



# Highly qualified personnel employment

A total of 2,238 postdoctoral fellows and graduate students using the infrastructure completed their training and moved into the workforce. Among them, 79% (1,770) **secured employment in Canada**, the majority (67%) of whom joined the private sector.



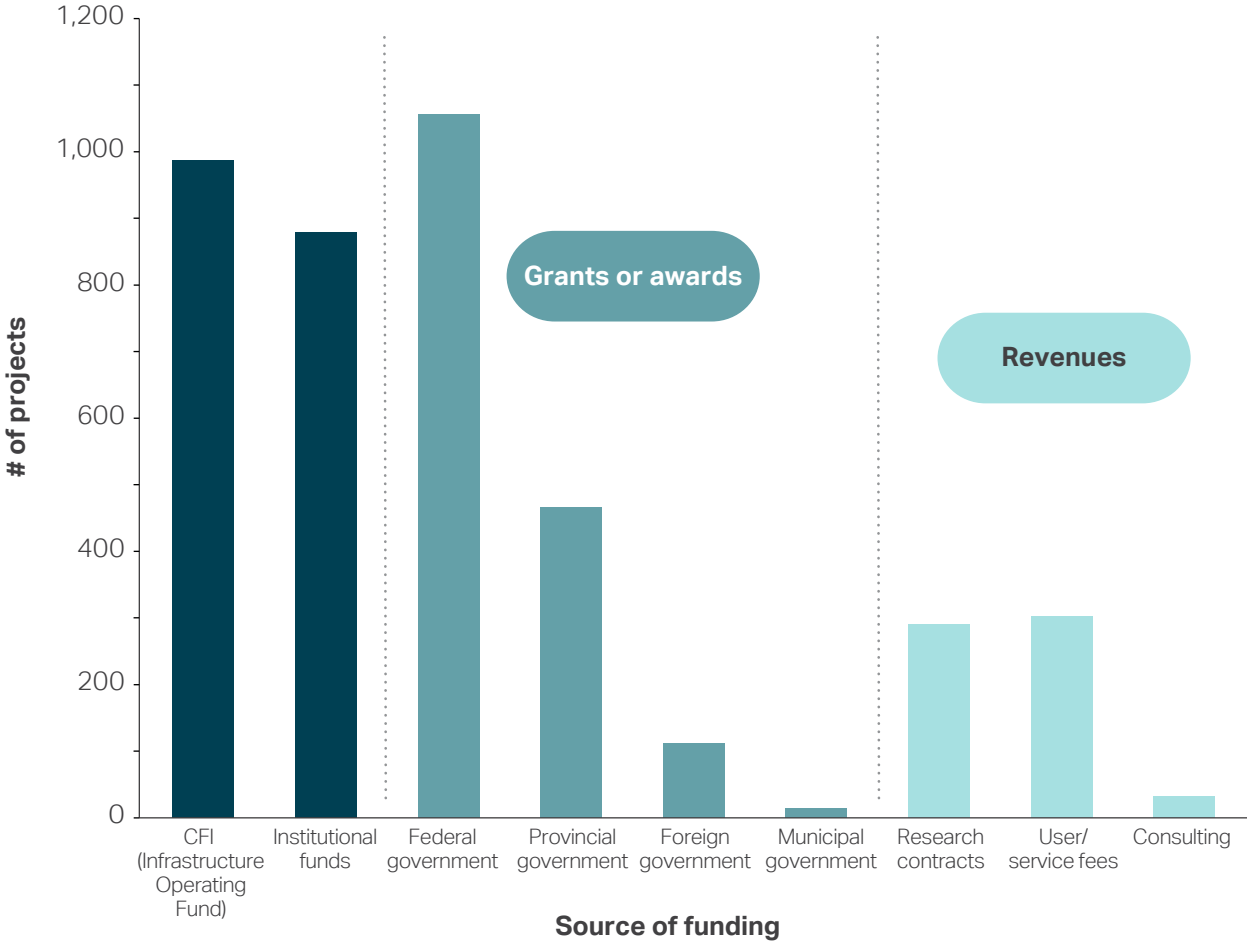


# Capacity for world-class research

## Operation and maintenance

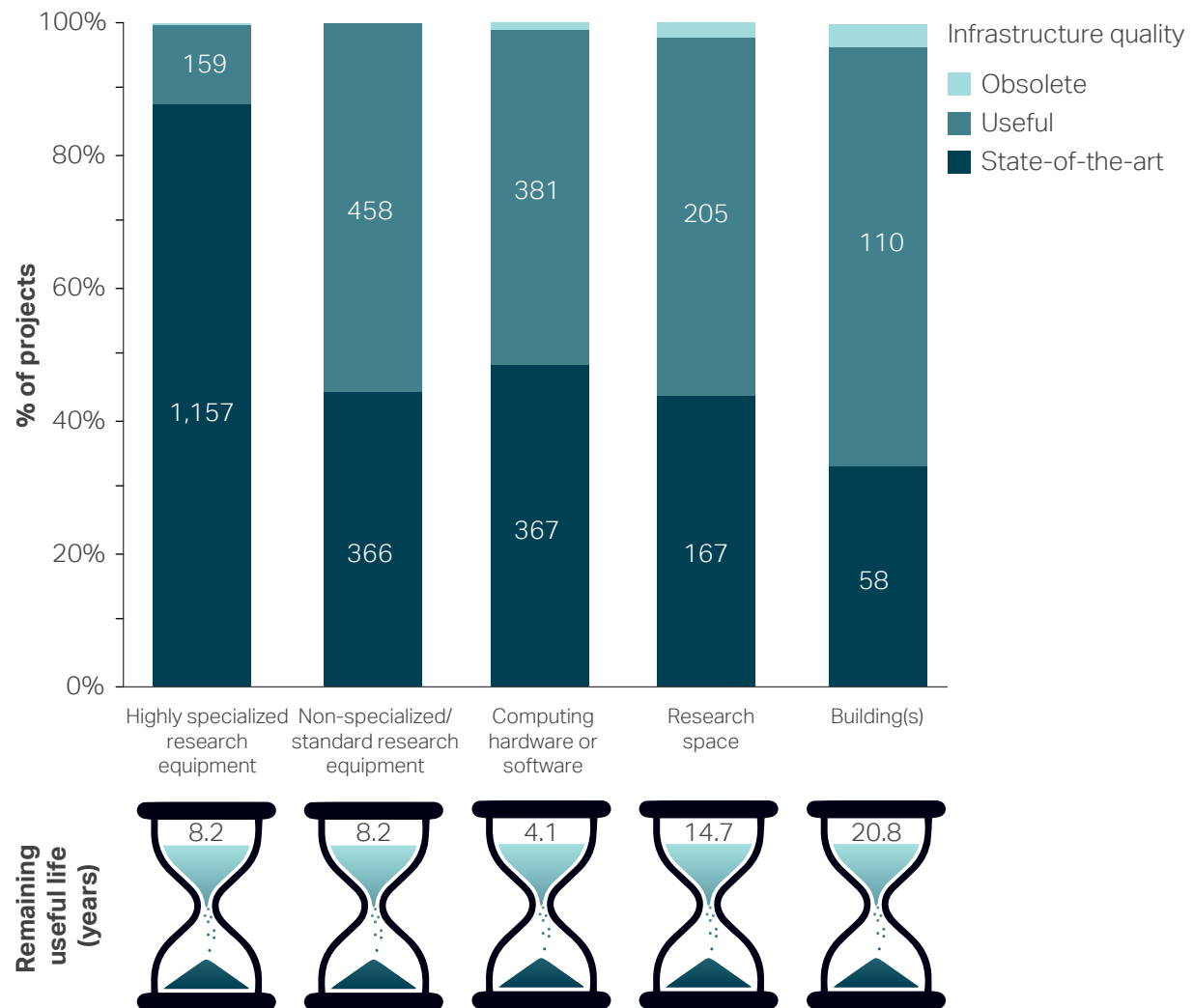
89% of researchers leading CFI-funded projects reported that they **had both adequate financial and human resources** for the operation and maintenance of their CFI-funded infrastructure.

Diverse funding sources, including research contracts and user fees, contribute to the sustainability of the infrastructure. Grants or awards from the federal government were the most common source of funding used.



## Infrastructure quality and useful life

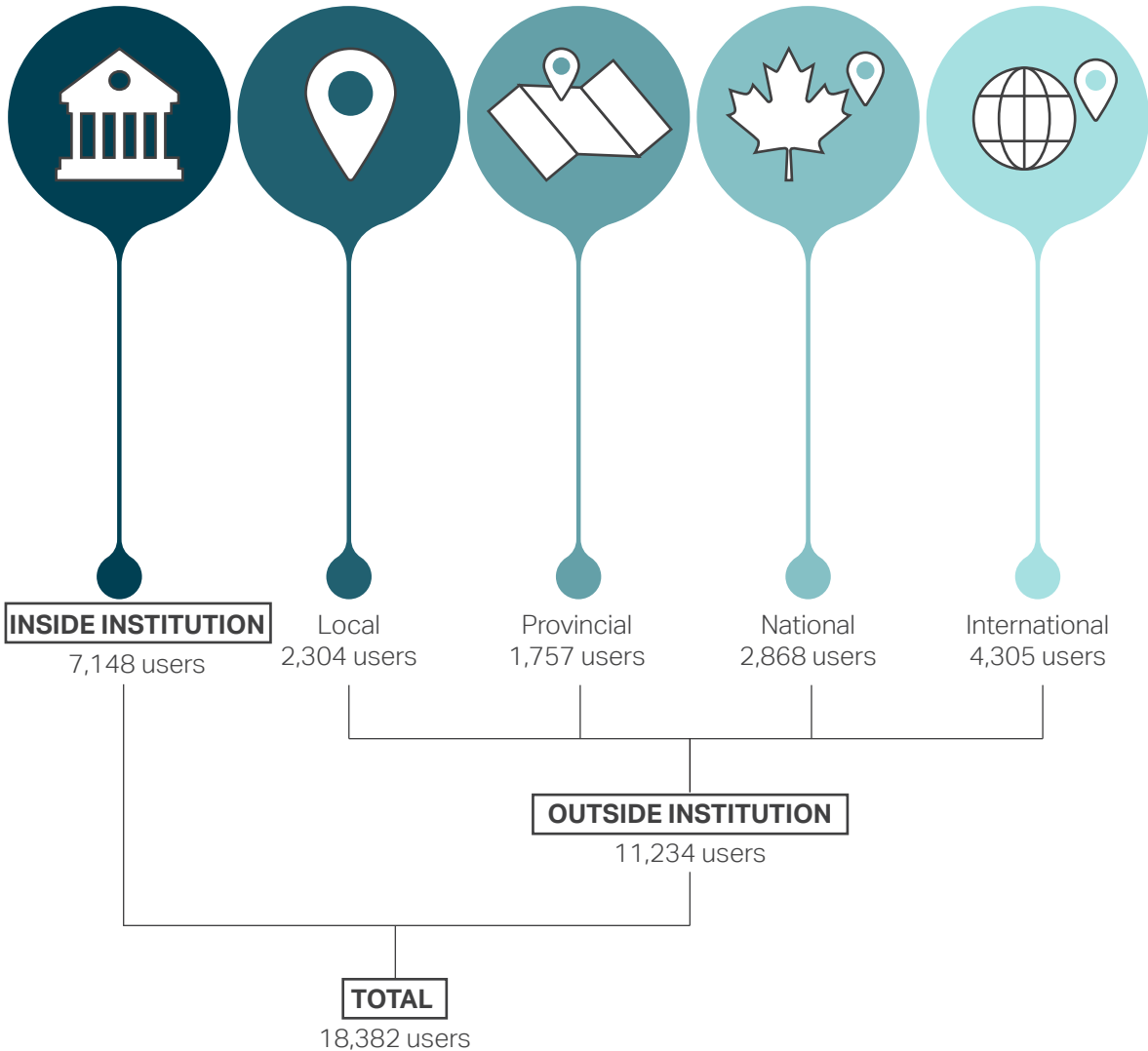
The quality of CFI-funded infrastructure was highly rated overall, with 88% of **highly specialized research equipment reported as state-of-the-art**. Highly specialized research equipment was reported by researchers leading CFI-funded projects as having the highest level of quality (still being state-of-the-art) with a remaining useful life of just over eight years, on average.



# Infrastructure use

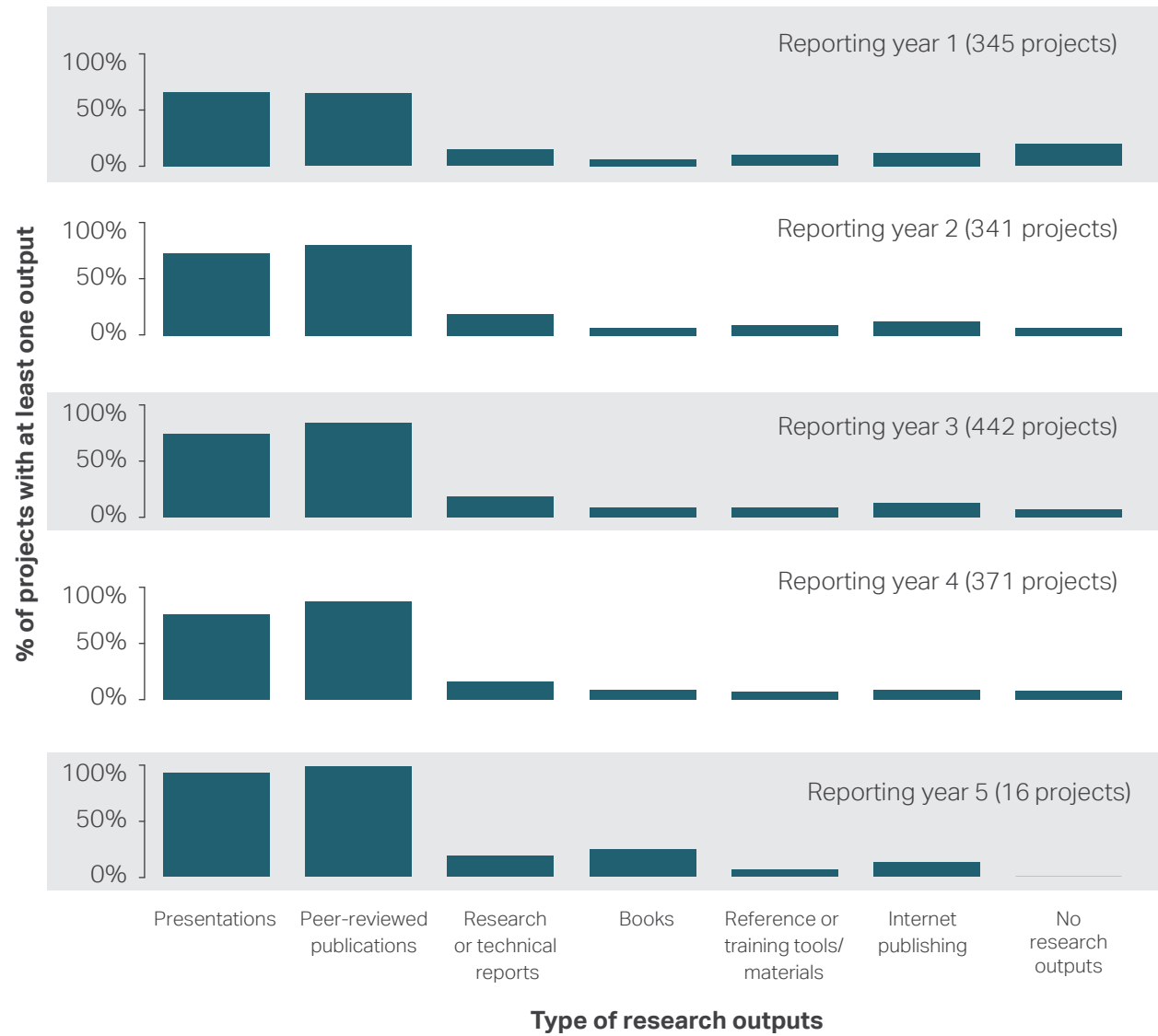
56% of researchers leading CFI-funded projects reported that their **CFI-funded infrastructure was used to maximum capacity**. Overall, 18,382 researchers (excluding students, postdoctoral fellows and technical and professional personnel) advanced their research using CFI-funded infrastructure.

The majority of international infrastructure users were from Switzerland, the United States, France, the United Kingdom and Australia.



## Sharing research results

Peer-reviewed publications are the most frequent type of research output reported, closely followed by conference, symposium and workshop presentations.

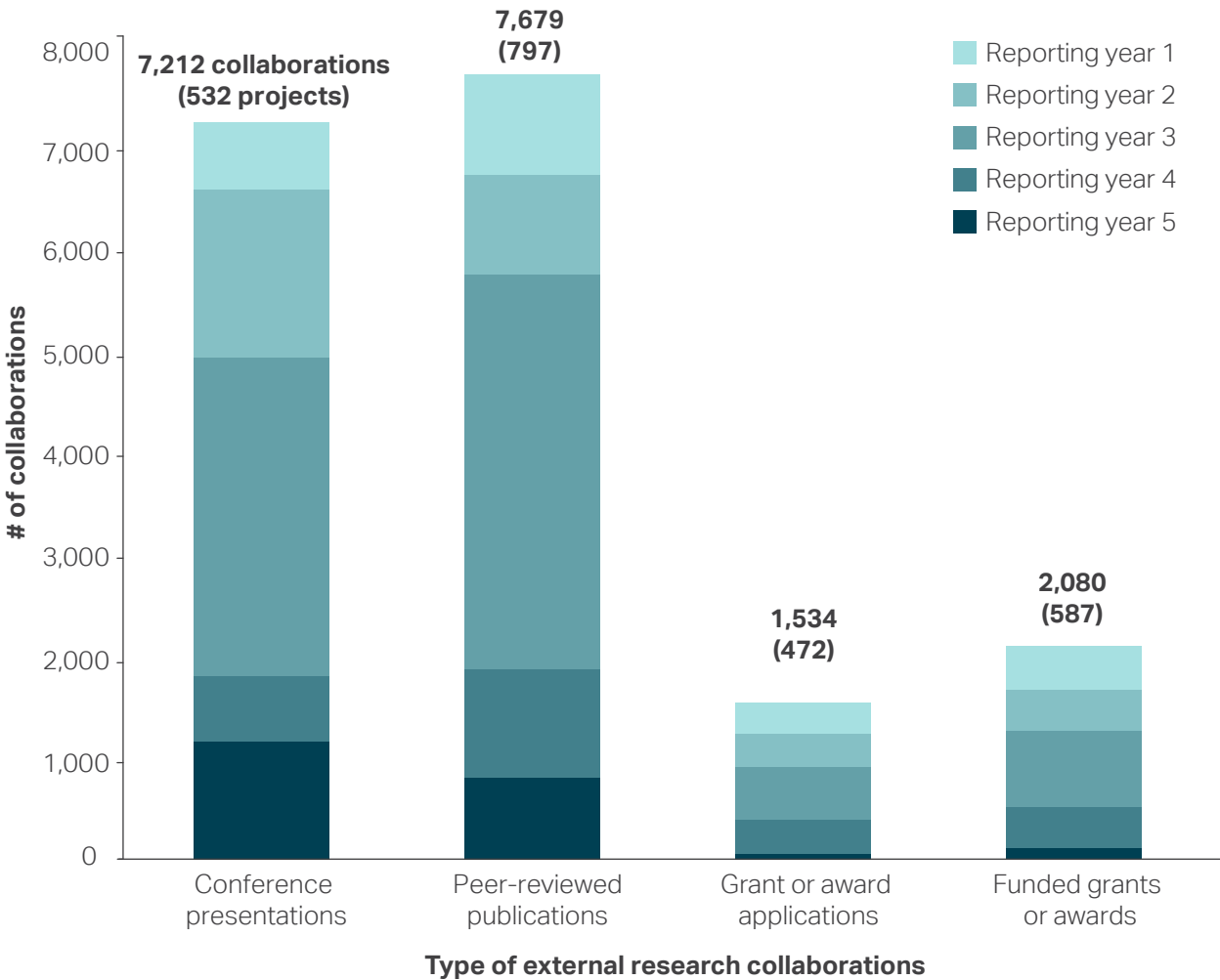


# Productive networks and collaboration

## Productive collaborations

Researchers have made use of CFI-funded infrastructure to **enable external research collaborations** that resulted in traditional academic activities and outputs. The most common is peer-reviewed co-publications, with 7,679 reported by 797 researchers leading CFI-funded projects.

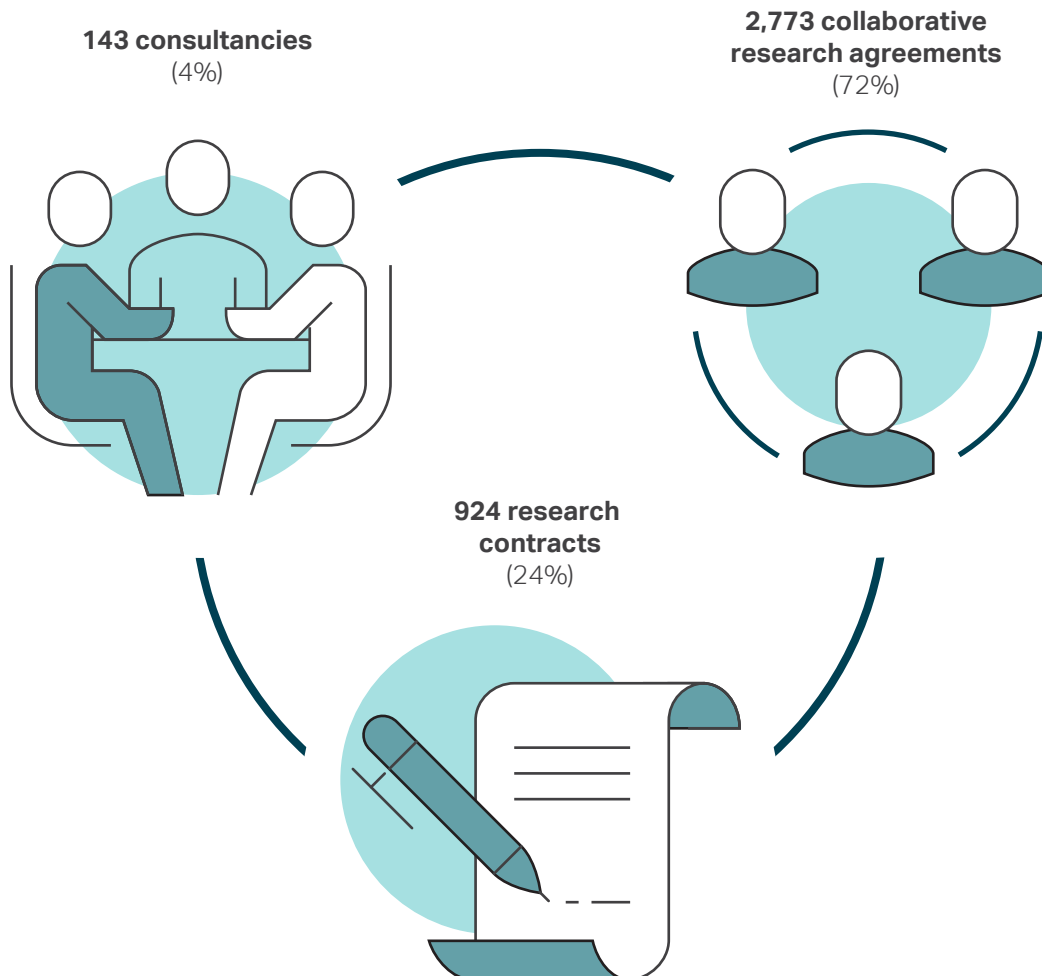
Among researchers leading CFI-funded projects that indicated external collaborations, 19% reported engaging in all four types, suggesting that CFI-funded infrastructure **enables broad and varied collaboration**.



## Research agreements

CFI-funded infrastructure **facilitated new formal collaborative research agreements** in 32% of projects, for a total of 3,840 agreements.

The private sector was the sector most often identified for both consultancies and research contracts while the academic sector was most frequently reported for collaborative research.



# Economic growth and job creation

## From research to innovation

CFI-funded infrastructure has **contributed to the development of new intellectual property and the creation of new companies.**

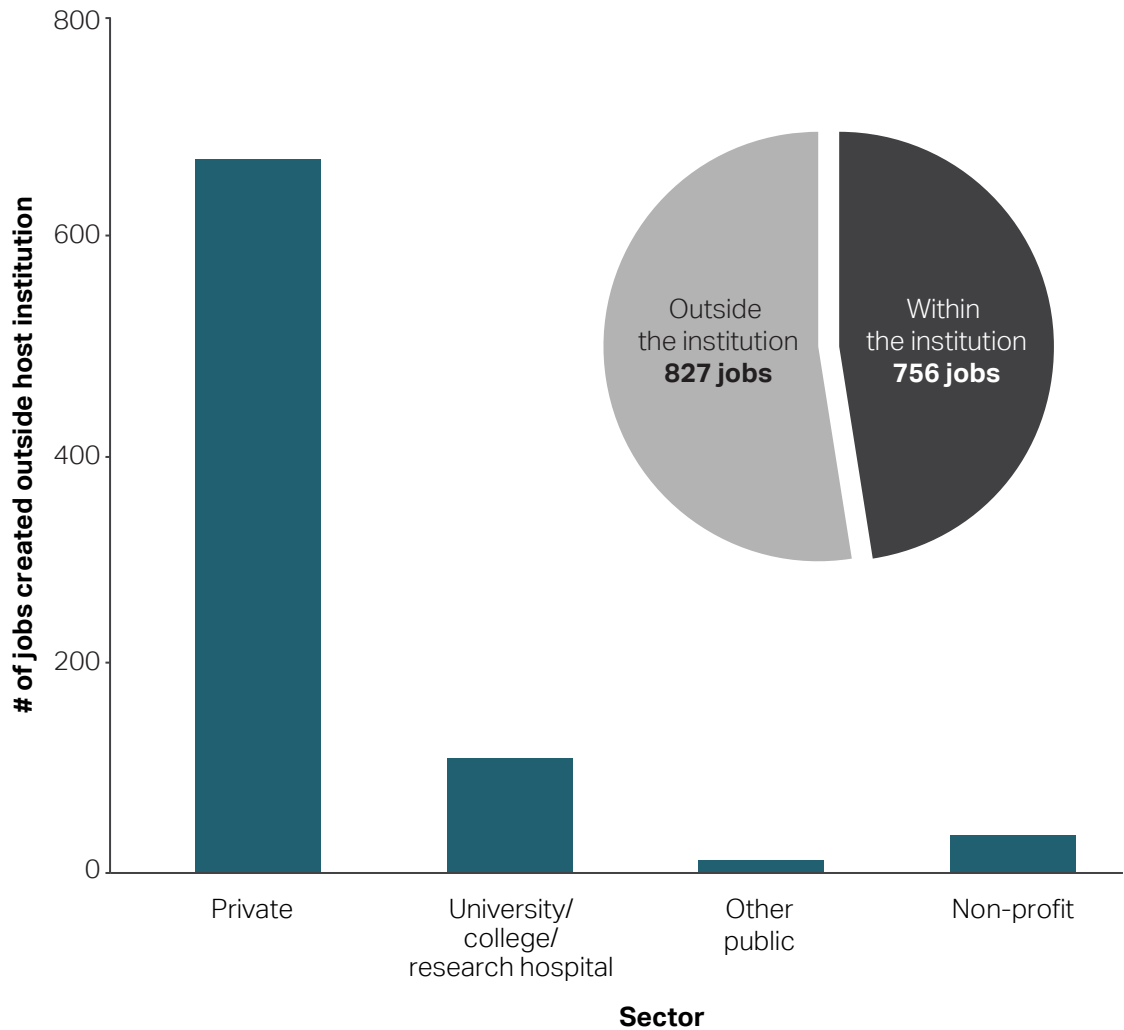
162 researchers leading CFI-funded projects reported at least one of the six types of research outcomes below.

<b>231</b> provisional patents	<b>143</b> patents	<b>43</b> projects with licensing agreements
<b>46</b> spin-off companies	<b>7</b> copyrights/ trademarks	<b>9</b> industrial designs

# New jobs

26% of researchers leading CFI-funded projects **reported one or more jobs created** due to CFI-funded infrastructure.

Just under half of all jobs created were within the host institutions. 81% of the 827 jobs created outside the institution were in the private sector.

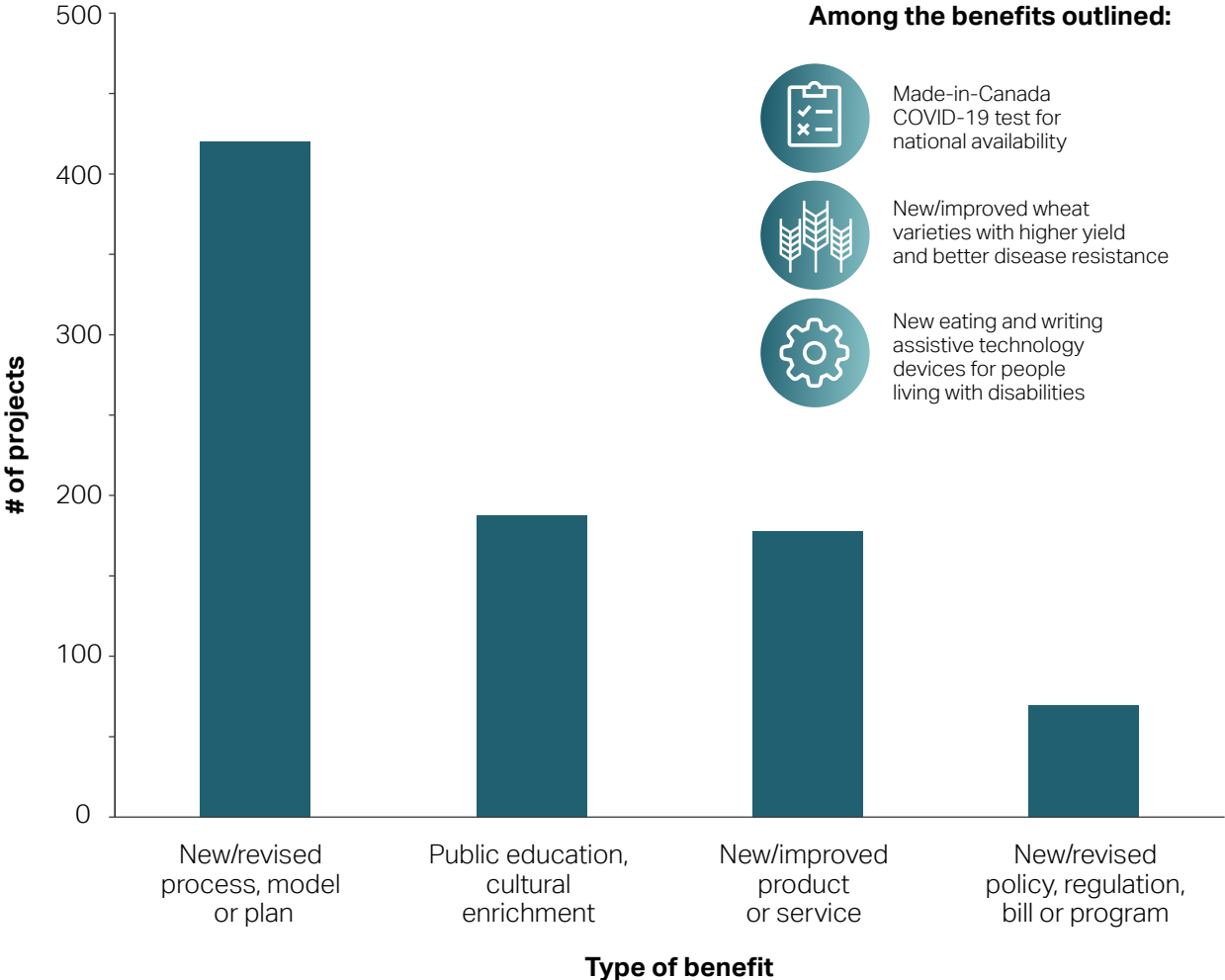




# Benefits to Canadians

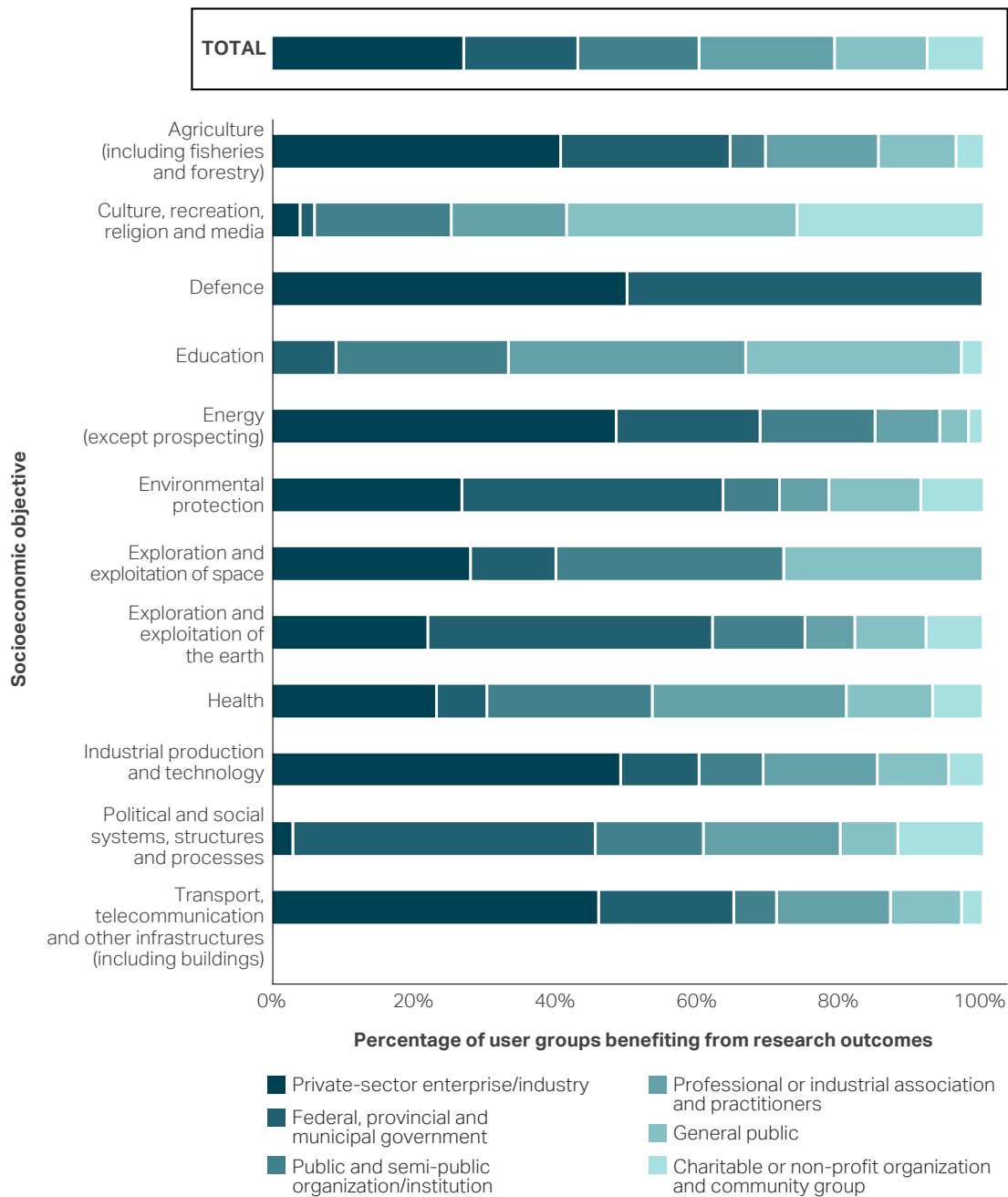
## A range of benefits

Close to half (46%) of researchers leading CFI-funded projects **reported at least one type of benefit**, highlighting the role of CFI-funded infrastructure in enabling research that produces outcomes for Canadians.



# Users of research outcomes

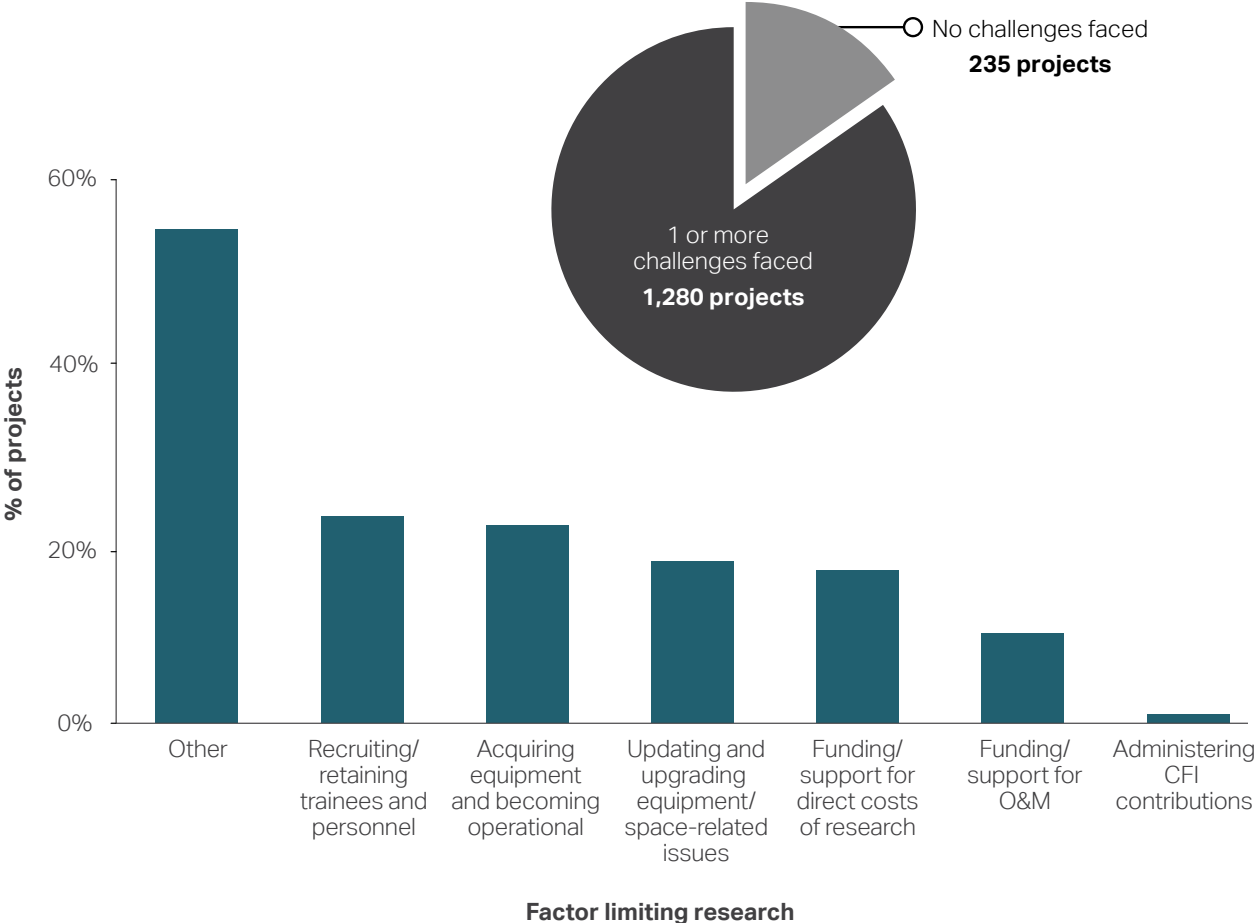
Overall, the most frequently reported user group benefiting from the research results was the private sector, followed by public and semi-public organizations and institutions. Research users varied by socioeconomic objectives of the research; for example agriculture projects tended to benefit the private sector most while research on environmental protection tended to benefit the federal, provincial and/or municipal governments.



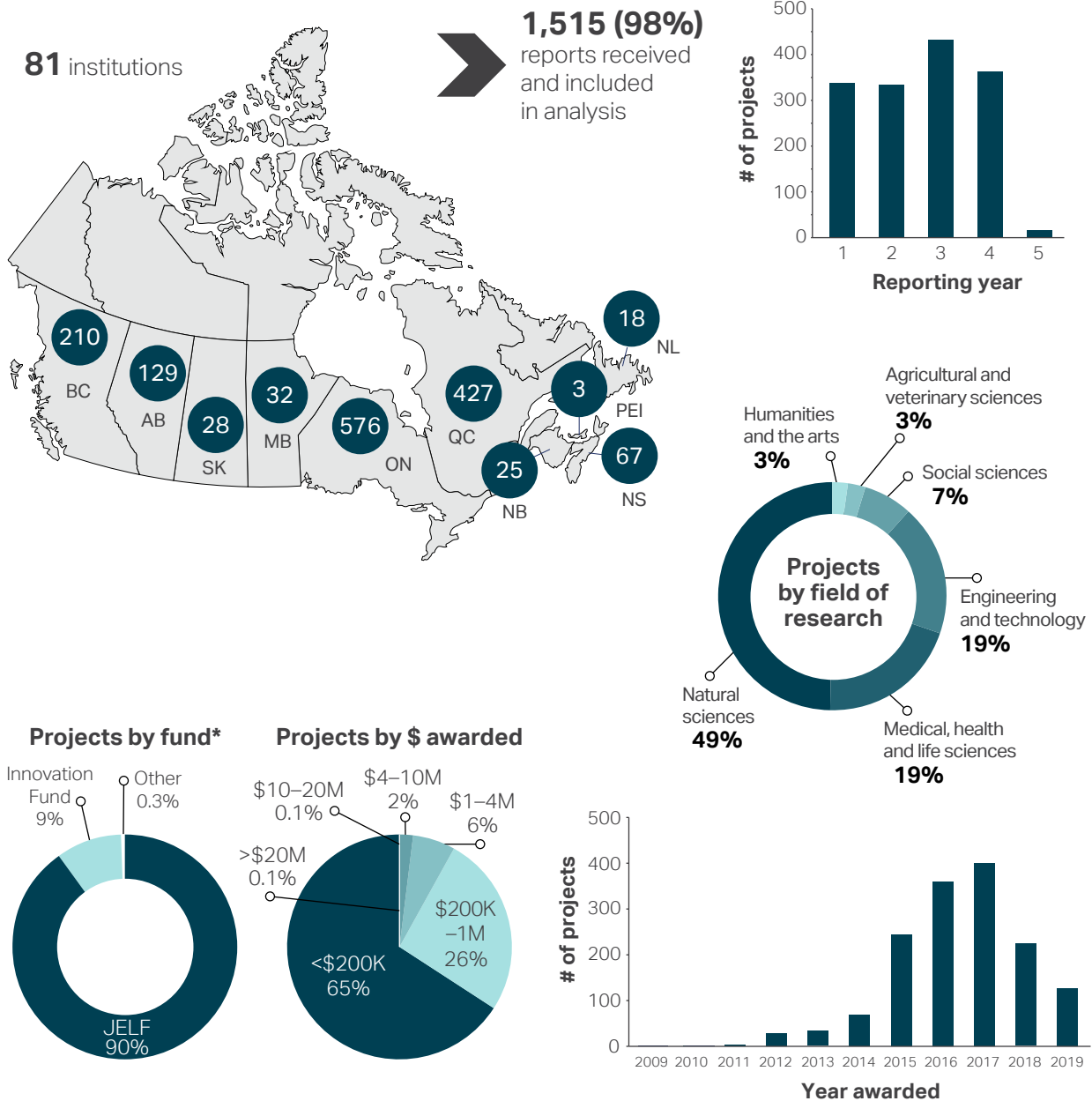
# Challenges

## Most common factors limiting research

84% of project leaders reported one or more factors limiting the quality and impact of the research enabled by the infrastructure. The most common factor reported was "other." **Almost all (96%) of the comments submitted under the "other" category related to challenges due to the COVID-19 pandemic, particularly research delays due to the inability to access their laboratory or to acquire, operationalize or maintain the infrastructure.**



# Appendix 1 – Characteristics of 2021 project progress reports



\* Innovation Fund includes projects funded through the Innovation Fund in 2015 and 2017, the New Initiatives Fund in 2012 and the Leading Edge Fund in 2009 and 2012.

John R. Evans Leaders Fund (JELF) includes projects funded through: the Leaders Opportunity Fund (\$1 to 2 million); a partnership between LOF and the Canada Research Chairs program; and, both the unaffiliated and partnership (associated with an application to a tri-agency program) streams of JELF.

"Other" includes projects funded through the Cyberinfrastructure Initiative – Challenge 1 and the Exceptional Opportunities Fund.