STRATEGIC RESEARCH ROADMAP 2021-2024

CRDCN
Canadian Research Data Centre Network

RCCDR
Réseau Canadien des centres de données de recherche

The Canadian Research Data Centre Network (CRDCN) is a premier research and training platform for over 2,000 researchers in the quantitative social and health sciences in Canada.

The Network provides unique access to Statistics Canada data on 33 campuses across the country to advance knowledge and inform public policy.

It is funded by the Social Sciences and Humanities Research Council of Canada, the Canadian Institutes of Health Research, the Canada Foundation for Innovation, the Fonds de recherche du Québec, Statistics Canada and our 42 primary and affiliated partner universities. CRDCN is recognized as one of Canada's Major Science Initiatives.

Executive summary

This strategic roadmap focuses on taking a harmonized approach to the research-related objectives set out in the Canadian Research Data Centre Network (CRDCN) 2019-2024 strategic plan.[1] The roadmap reflects the valuable input received from the CRDCN Research Advisory Committee and Board of Directors. Based on its unique position in the research data ecosystem, CRDCN has a key role to play in: (i) providing leadership at the research-policy nexus; (ii) serving as a key partner in training; and (iii) demonstrating the value of research-policy collaboration and its benefits. Robust partnerships are essential to all three areas.

WHAT CRDCN AND ITS PARTNERS ARE ABLE TO DELIVER:

- Building on 20 years of partnership with universities across Canada and Statistics Canada to provide secure, direct access to microdata that can be used to identify and address priority questions for researchers and policy-makers, CRDCN is strengthening models and mechanisms for collaboration at the research-policy nexus that contribute to improved processes and increased capacity for microdata access and analysis, harnessing technological innovation with its partners, and supporting the pipeline for research.

- As a key training partner, CRDCN supports the next generation of highly qualified personnel in data analysis and evidence-based policy-making with a training plan that fills training gaps through three levels of training partnership: platform/promotion; facilitation/initiation; and programming/production.

- CRDCN advocates for the importance of research and demonstrates the value of research-policy collaboration, leveraging the ways in which research and policy colleagues that are members of the CRDCN community are aligned: the use of sound methods; robust data and ethical standards for inquiry and analysis; the aim to better understand complex challenges at the local, regional, national and global levels; and contributing to solutions to these challenges.

AN INVITATION, OUR COMMITMENTS AND TARGETS:

This document serves as a roadmap for 2021-2024, emphasizing the importance of collaboration and coordination among stakeholders in the research data ecosystem in Canada, and extending an invitation to those stakeholders – researchers and policy-makers, colleagues in government and the not-for-profit sector, social enterprises in the private sector – to work with CRDCN in order that, together, we contribute to the strengths of stakeholder groups individually and collectively, for the benefit of Canadians and to fortify Canada's place in the research data ecosystem on the world stage.

CRDCN has a unique position in the research data ecosystem and a key role to play in:

1. Providing leadership at the research-policy nexus

2. Serving as a key partner in training

3. Demonstrating the value of research-policy collaboration and its benefits

Robust *partnerships are essential* to all three areas.

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1 The CRDCN Strategic Plan 2019-2024 can be found here: https://crdcn.org/sites/default/files/strategic_plan_0.pdf.

The evolving research data ecosystem

The following external forces and trends that have an impact on CRDCN were identified in CRDCN's 2019-2024 Strategic Plan:

i. Researchers' evolving expectations of data access, use, processing, sharing and curation;

ii. The evolving digital research ecosystem and relationships within that system (e.g. with Statistics Canada and other stakeholder organizations);

iii. Evolving opportunities and challenges for data to inform and influence public policy development across all jurisdictions;

iv. Demand from all sectors for people skilled in quantitative data analysis and data science; and

v. Increasing public awareness regarding research involving personal data and the need for balancing access with protecting privacy.

While the forces and trends listed above remain central to understanding the context and to strategically navigating the evolving research data ecosystem, in the past year, COVID-19 exposed existing vulnerabilities around the globe (such as inequities related to health and economic recovery). In the research data ecosystem, vulnerabilities that have an impact on CRDCN and our stakeholders include the following needs and the challenges of meeting them:

• The need for remote and timely access to microdata;

• The need for collaboration across jurisdictions on how data is collected, accessed and shared; and

• The need to shorten the timeline between research, analysis and getting evidence to policy-makers.

While these vulnerabilities are contained within the five external forces identified in CRDCN's 2019-2024 strategic plan, attention is drawn to them here because of the emphasis placed on them in the past year and in how they will factor into the strategic direction and actions for CRDCN for 2021-2024.

The CRDCN Research Advisory Committee also noted growing awareness about Indigenous data sovereignty and data governance practices.

The Government of Canada's "Digital Research Infrastructure Strategy" represents a significant commitment to "ensure that Canadian researchers have the digital tools they need to support scientific excellence."[2] CRDCN will continue to work in collaboration with the New Digital Research Infrastructure Organization (NDRIO), formed in 2019.[3]

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2 For more information on Canada's Digital Research Infrastructure Strategy, see: http://www.ic.gc.ca/eic/site/136.nsf/eng/home.

3 For more information about NDRIO, see: https://engagedri.ca/.

CRDCN's unique role in the research data ecosystem

A SWOT (strengths, weaknesses, opportunities, threats) analysis was undertaken to examine CRDCN's role in the research data ecosystem to inform decision-making about strategic direction and actions for CRDCN. Based on its unique position in the research data ecosystem, building on 20 years of success and in order to maximize opportunities to address the needs of our stakeholders, CRDCN is taking an increasingly harmonized approach to activities involving research, training, and knowledge mobilization by:

1. Providing leadership, models and mechanisms for research-informed policy and collaboration at the research-policy nexus;

2. Serving as a key training partner for the next generation of highly qualified personnel (HQP)[4] in data analysis and evidence-based policy making; and

3. Advocating for the importance of research for the benefit of Canadians and demonstrating the value of research-policy collaboration, its outcomes and impacts, through knowledge mobilization initiatives.

Partnerships are essential to all of this work. In the words of the Chief Statistician of Canada at CRDCN's 20th anniversary conference in 2020, **"The business of data is truly a team sport."** CRDCN provides leadership and contributes models and mechanisms to enable research-informed policy, but commitment from partners is necessary for improved processes and increased capacity for microdata access and analysis, and to implement a scalable model for collaborative research projects and programs. Similarly, CRDCN is a long-established partner in providing training for the next generation of highly qualified personnel in data analysis and evidence-based policy making, but coordination with established and new training partners is needed to effectively identify and address changing training needs. Lastly, in regard to the need to advocate for the importance of research and demonstrate the value of research-policy collaboration, CRDCN identifies and leverages the aligned priorities of our research and policy colleagues and promotes their work, but effective knowledge mobilization requires researchers and policy colleagues to be engaged with each other, from the framing of research-policy questions, to data analysis, to communication of findings.

CRDCN is building on 20 years of success and lessons learned to:

1. Provide leadership, models and mechanisms for research-informed policy and collaboration at the research-policy nexus

2. Serve as a key training partner for the next generation of HQP in data analysis and evidence-based policy making

3. Advocate for the importance of research for the benefit of Canadians and demonstrating the value of research-policy collaboration, its outcomes and impacts

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4 "Definitions of HQP vary across industries and sectors. In general, HQP are workers who possess significant education and training, are subject to high performance expectations, and are performing roles that employers often find difficult to fill due to high skill or knowledge requirements" (https://www.mitacs.ca/sites/default/files/uploads/newsroom/skills_policy_paper_en_1.pdf).

What CRDCN and its partners are able to deliver

CRDCN and its partners, for more than 20 years, have provided leadership at the research-policy nexus, training for the next generation of highly qualified personnel in data analysis and evidence-based policy-making, and promoted and demonstrated the significance of research-policy collaboration for the benefit of Canadians.[5] CRDCN's strategic research roadmap builds on past success and on lessons learned, strengthening models and mechanisms for collaborative research, expanding and enhancing partnerships to better understand and address the needs of stakeholders in the research data ecosystem, and harnessing technological innovation for improved data access.

WE PROVIDE LEADERSHIP, MODELS AND MECHANISMS FOR RESEARCH-INFORMED POLICY AND COLLABORATION AT THE RESEARCH-POLICY NEXUS

CRDCN plays a unique role in the research-policy nexus in Canada. In partnership with universities across Canada and Statistics Canada, CRDCN provides secure, direct access to microdata from anonymized surveys and administrative data, as well as integrated datasets. The spectrum of data holdings includes: agriculture and food, business and consumer services, children and youth, crime and justice, digital economy and society, education and training, environment, families and households, government, health (prenatal to mortality), health care services, housing, immigration and ethnocultural diversity, income and employment, Indigenous Peoples, international trade, mental health and well-being, population and demography, seniors and aging, travel and tourism, among others.

These data are highly valuable for the advancement of research across disciplines, but also, to inform evidence-based policy and programs in government, the not-for-profit sector, and social enterprises in the private sector. **For more than 20 years, CRDCN has provided leadership** in enabling access and in bringing researchers and policy colleagues together to identify and address priority questions that these data help to answer. Building on this success, CRDCN is strengthening models and mechanisms for collaboration at the research-policy nexus by:

- Contributing to **improved processes and increased capacity in microdata access and analysis** and harnessing technological innovation in collaboration with partner universities, Statistics Canada and other stakeholders to better serve researchers and policy colleagues;

- Launching an outreach campaign for a **suite of engagement opportunities for collaborative projects and programs** that bring together researchers and

> In partnership with universities across Canada and Statistics Canada, CRDCN provides secure, direct access to a broad spectrum of microdata that are highly valuable for the advancement of research across disciplines, but also, to inform evidence-based policy and programs.

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5 At the time of writing (March 2021), CRDCN reports the following outputs on the use of RDC data by members of the CRDCN research community: 5,183 publications, 573 reports, 1,013 student theses.

prospective partners in government, the not-for-profit sector, and social enterprises in the private sector, to identify and address shared needs and priorities;

- Working in collaboration with the (FNIGC) First Nations Information Governance Centre to contribute to policies, practices and **co-learning informed by First Nations data governance standards**;[6] and

- **Supporting the pipeline for research**, from assisting emerging scholars as RDC users, to facilitating research incubation through Communities of Practice, to supporting mentorship and leadership in the CRDCN research community.

Each of these activities contributes to strengthening the research data ecosystem and expanding what is possible within it: whether through improved processes and increased capacity in data access and analysis, through outreach and engagement for co-learning and collaboration, or through supporting the research pipeline. Critical to that pipeline is training the next generation, which is the second area of focus in CRDCN's strategic research roadmap.

WE ARE A KEY TRAINING PARTNER FOR THE NEXT GENERATION OF HIGHLY QUALIFIED PERSONNEL IN DATA ANALYSIS AND EVIDENCE-BASED POLICY MAKING

Providing training and supporting the next generation of highly qualified personnel in data analysis and evidence-based policy making has remained central to CRDCN's vision and mission and in recent years, in the context of the changes to the evolving data ecosystem, has in some ways become more critical than ever. CRDCN has developed a training plan than builds on the strength of CRDCN as a key training partner to fill training gaps and complement existing training from partners such as universities and academic libraries, Statistics Canada and local RDCs, government departments, FNIGC, scholarly societies and graduate studies associations, software partners and other research data ecosystem organizations. CRDCN's new training plan offers **three levels of training partnership**:

- **Platform/promotion:** CRDCN contributes its online delivery platform or event space to host training and uses its communications channels to promote training provided by our partners. Examples include instructional sessions on software, data management and reproducibility, RDC datasets, or RDC data analysis that is valuable for members of the CRDCN research community.

- **Facilitation/initiation:** CRDCN identifies areas of training provided by training partners where we can assist in tailoring training offerings for the CRDCN research community. Examples include partnering for training in local RDCs (and across the Network) or with the Data Liberation Initiative,[7] and training tailored for projects in which CRDCN is a collaborative partner (e.g. Consortium on Analytics for Data-Driven Decision-Making[8]).

- **Programming/production:** CRDCN leads and/or closely collaborates with a training partner on programming and production for a training offering from inception to post-production. Examples include training that is provided as part

Providing training for HQP in data analysis and evidence-based policy making has always been central to CRDCN's work. In the context of the evolving data ecosystem, this training has become more critical than ever. CRDCN's training plan builds on its strengths as a key training partner to fill key training gaps.

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6 Note that CRDCN will also pursue co-learning with Inuit and Métis entities, but as a first step, we will build on our existing relationship with FNIGC.

7 For more information on DLI: https://www.statcan.gc.ca/eng/dli/dli

8 For more information on CAnD3: https://www.mcgill.ca/cand3/

of a CRDCN webinar series or annual conference, as well as training that supports emerging scholars (such as the National Policy Challenge).

CRDCN's provides a range of training offerings each year, nationally through CRDCN centrally and regionally through universities/local RDCs, which cover topics such as: software, statistical methods, data management, data reproducibility, mixed methods, Statistics Canada datasets, administrative datasets, linked datasets, the data access continuum, RDC access and project approval, knowledge mobilization and policy communications. CRDCN's training plan also includes offerings related to research data career pathways and the development of an internship program.

WE ADVOCATE FOR THE IMPORTANCE OF RESEARCH FOR THE BENEFIT OF CANADIANS AND DEMONSTRATE THE VALUE OF RESEARCH-POLICY COLLABORATION, ITS OUTCOMES AND IMPACTS, THROUGH KNOWLEDGE MOBILIZATION INITIATIVES

Knowledge mobilization, knowledge transfer, knowledge translation, and evidence-based policy have become increasingly significant in research funding programs and public policy mandates over the course of the past five decades in Canada and internationally. Although it remains challenging to reconcile some of the fundamental differences in the structures, timelines, practices, and success measures for the work that researchers and policy makers do, CRDCN has more than 20 years of experience identifying and leveraging ways in which the **research and policy colleagues that are members of our community are aligned**, as they both:

- Require sound methods, robust data and ethical standards for inquiry and analysis;

- Aim to better understand complex challenges at the local, regional, national and global levels; and

- Contribute to solutions to improve Canadian lives and communities, as well as the world that we inhabit.

CRDCN advocates for the importance of research for the benefit of Canadians not only by capturing annually the research contributions of more than 2000 researchers that are members of the CRDCN community, but also, their presentations beyond the academic community, as well as media coverage about the work CRDCN researchers are doing. CRDCN's knowledge mobilization plan provides a framework to demonstrate the value of research-policy collaboration by communicating how research using RDC data is able to inform policy, practice and program evaluation. CRDCN also supports emerging scholars and established researchers in understanding how to effectively engage in knowledge mobilization, from facilitating engagement at the research design stage to collaboration in communicating how the research can be used to benefit Canadians. The launch of **"CRDCN research-policy snapshots"** will support members of the CRDCN research community in reaching government, not-for-profit sector organizations, social enterprises in the private sector and a diversity of publics in Canada and around the world.

CRDCN has more than 20 years of experience identifying and leveraging the ways that research and policy colleagues who are members of our community are aligned. They both:

- Require sound methods, robust data and ethical standards for inquiry and analysis

- Aim to better understand complex challenges at the local, regional, national and global levels

- Contribute to solutions to improve Canadian lives and communities, as well as the world that we inhabit

The path forward –
An invitation

In this strategic research roadmap, CRDCN builds on existing strengths, lessons learned from the past 20 years and an understanding of the evolving research data ecosystem, in order to navigate and continue to provide leadership in paving the path forward through collaboration and partnerships with stakeholders. **The CRDCN roadmap therefore is also an invitation** – to researchers and policy-makers, colleagues in government and the not-for-profit sector, and social enterprises in the private sector – to work with us to the enhance and leverage the individual and collective strengths that we each have as stakeholders in the research data ecosystem, for the benefit of Canadians and to fortify Canada's place in the research data ecosystem on the world stage.

Our commitments and targets

COMMITMENT	TARGETS
Collaboration at the research-policy nexus	Set and meet targets with partner universities, Statistics Canada and other stakeholders to improve processes and increase capacity in microdata access and analysis.
	Implement into CRDCN practice one co-learning opportunity per year with the First Nations Information Governance Centre.
	Launch CRDCN outreach campaign to prospective partners in government, the not-for-profit sector, social enterprises in the private sector, tailoring outreach efforts to at least four prospective partners per year.
	Launch an outreach campaign to raise RDC awareness/use and increase participation of RDC users in CRDCN communities of practice that serve their needs.
	Launch at least one collaborative project or program per year with research and policy colleagues.
Training partnership	Provide a training *platform/promotion* for at least four training offerings per year with our training partners
	Provide training *facilitation/initiation* for at least four training offerings per year with our training partners
	Provide training *programming/production* for at least four training offerings per year with our training partners
	Explore training collaboration with at least one new prospective training partner per year.
Knowledge mobilization: Advocacy, outcomes, impacts	Promote the contributions that members of the CRDCN research community make to the advancement of research, to evidence-based policy and programs, and to public discourse.
	Provide members of the CRDCN research community with tools and training to effectively engage in knowledge mobilization.
	Launch "CRDCN research-policy snapshots" to enable researchers to reach government, not-for-profit sector organizations, social enterprises in the private sector and a diversity of publics.

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