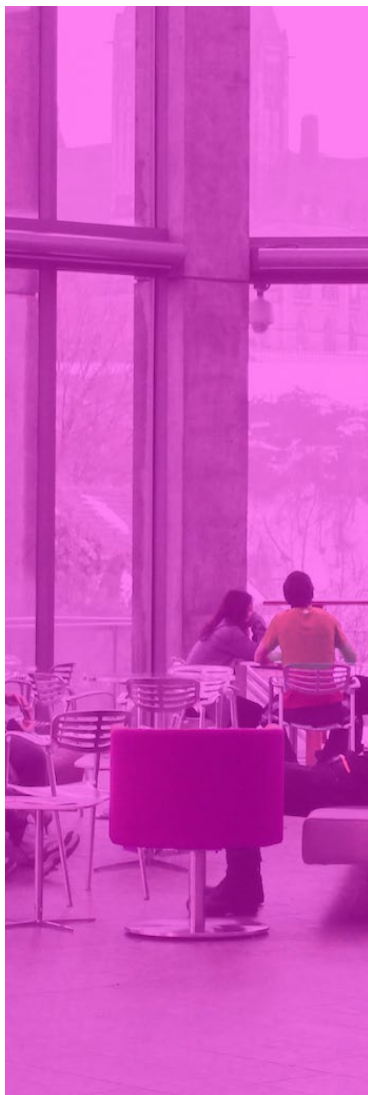# Skills Development in the North

An Ecosystem Shaped by Distinct Challenges

Future Skills Centre

The Future Skills Centre – Centre des Compétences futures (FSC-CCF) is a forward-thinking centre for research and collaboration dedicated to preparing Canadians for employment success. We believe Canadians should feel confident about the skills they have to succeed in a changing workforce. As a pan-Canadian community, we are collaborating to rigorously identify, test, measure, and share innovative approaches to assessing and developing the skills Canadians need to thrive in the days and years ahead.

The Future Skills Centre was founded by a consortium whose members are Ryerson University, Blueprint, and The Conference Board of Canada.

If you would like to learn more about this report and other skills research from FSC, visit us at fsc-ccf.ca or contact info@fsc-ccf.ca.

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Contents

Highlights

- Canadian skills development ecosystems are made up of a wide range of organizations—such as education and training providers, policy-makers, employers, and unions—that help learners get the skills they need to adapt to changing economies. Coordination among organizations and individuals in the ecosystem is essential.

- Northern skills ecosystems share key differences that set them apart from the skills ecosystems in Southern Canada.

  - Northern education and training providers face challenges with small remote secondary schools, shortages of teachers and skilled adult educators, inadequate in-service supports, few post-secondary education (PSE) institutions, and poor Internet service.

  - The skills development policy environment in Northern regions is shaped by large Indigenous populations and distinct Indigenous governance structures.

  - The demand for skilled labour in many Northern regions is influenced by a large natural resources sector, dominated by a few large private sector employers.

  - Learners from small remote communities often have to leave home to acquire the foundational skills they need to enter the labour market. Young learners studying far from their families need culturally appropriate social and learning supports.

  - Coordinating the skills ecosystem across large territories with sparse populations and small Indigenous communities requires flexible, culturally competent collaboration bodies.

- Looking beyond the skills required for current job openings may be the biggest challenge for Northern skills ecosystems.

Building skills in Northern Canada

Occupations and in-demand skills are changing. Two-thirds of workers expect their jobs to be changed by technology every five years.[1] Other forces driving labour market change in Northern Canada include commodity cycles, demographic change, climate change, modern treaties, and Indigenous self-government.

Understanding how these changes impact workforce development across Northern Canada requires looking beyond the training institutions that deliver skills for jobs. It takes a broad ecosystem of interdependent actors—from government, education and training, industry, and learners—to identify the skills needed locally, deliver those skills, and deploy them in jobs.[2]

Canadian skills development ecosystems include a wide range of organizations that help workers acquire the skills they need to adapt to changing economies. Inevitably, Northern skills development ecosystems are shaped by the Northern context. These skills ecosystems share key differences that set them apart from Southern Canada. There are also distinct challenges to ensuring the supply of Northern skilled labour meets the demand.

Leaders and policy-makers must understand how the differences in the North affect the ability of Northern skills ecosystems to respond to change. They also need to understand how distinct features of Northern skills ecosystems impact the provision of skills to Indigenous workers, a population that makes up more than half the workforce in some Northern regions.

"Future skills ecosystems need to be built on multi-stakeholder engagement, taking into account all actors ... authorities, education providers, businesses, and individuals...."[3]

A model of the skills development ecosystem

Academics have been talking for more than two decades about skills development ecosystems where a broad range of organizations and individuals interact to manage the supply and demand of skilled labour.[4] This thinking is grounded in the analysis of the network of relationships between the many actors that carry out one or more of the roles and functions essential to skills development.[5] (See Table 1.) Appendix C provides an example of how multiple actors in a skills ecosystem fulfill these different roles and functions. Overlapping government roles make Canadian skills ecosystems particularly complex.[6] (See "Jurisdictional complexity.")

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1   The Adecco Group and The Boston Consulting Group, "Future-Proofing the Workforce," 5.
2   Lansbury, "Skills in Australia."
3   EARLALL (European Association of Regional & Local Authorities for Lifelong Learning), "Building Regional Skills Ecosystems."
4   Finegold, "Creating Self-Sustaining, High-Skill Ecosystems."
5   Anderson and Warhurst, "Lost in Translation?"
6   Jungblut and Rexe, "Higher Education Policy in Canada and Germany."

Table 1

Roles and functions in skills development

Roles	Functions
Planning and coordination	• Conducting labour market research (e.g., collecting and analyzing data, forecasting occupations and skills in demand, gaps) • Coordinating communication between actors in the system
Funding	• Raising taxes and/or donations or underwriting loans • Distributing and/or administering funds • Supporting early childhood education, primary education, secondary education, post-secondary education, and/or adult education • Making capital investments • Providing operational funding • Paying tuition
Producing standards	• Defining occupations • Identifying specific skills • Assessing skills
Training	• Designing and adapting curriculum • Training instructors • Delivering training • Arranging work-integrated learning (WIL) opportunities
Certification/ accreditation	• Accrediting training programs • Accrediting training providers • Issuing certificates/diplomas/degrees
Learner supports (academic and non-academic)	• Providing career awareness and guidance • Academic upgrading • Student financial aid • Student housing • Childcare • Social services and case management • Cultural and linguistic supports • Special needs supports
Continuous improvement	• Evaluating all kinds of outcomes

Source: The Conference Board of Canada.

Jurisdictional complexity

One reason Canadian skills ecosystems are complex is that multiple jurisdictions have overlapping roles.[7] Education is a provincial or territorial responsibility. And in some jurisdictions, school divisions are managed by locally elected boards. But the federal government can also have responsibility for employment-related skills development and funding Indigenous education. At the same time, many Indigenous governments have taken control of the design and delivery of education and skills development for their members, and partner with both provincial and federal governments. In addition, in the workplace employer learning and development policies may factor in.

Sources: Jungblat and Rexe; The Conference Board of Canada.

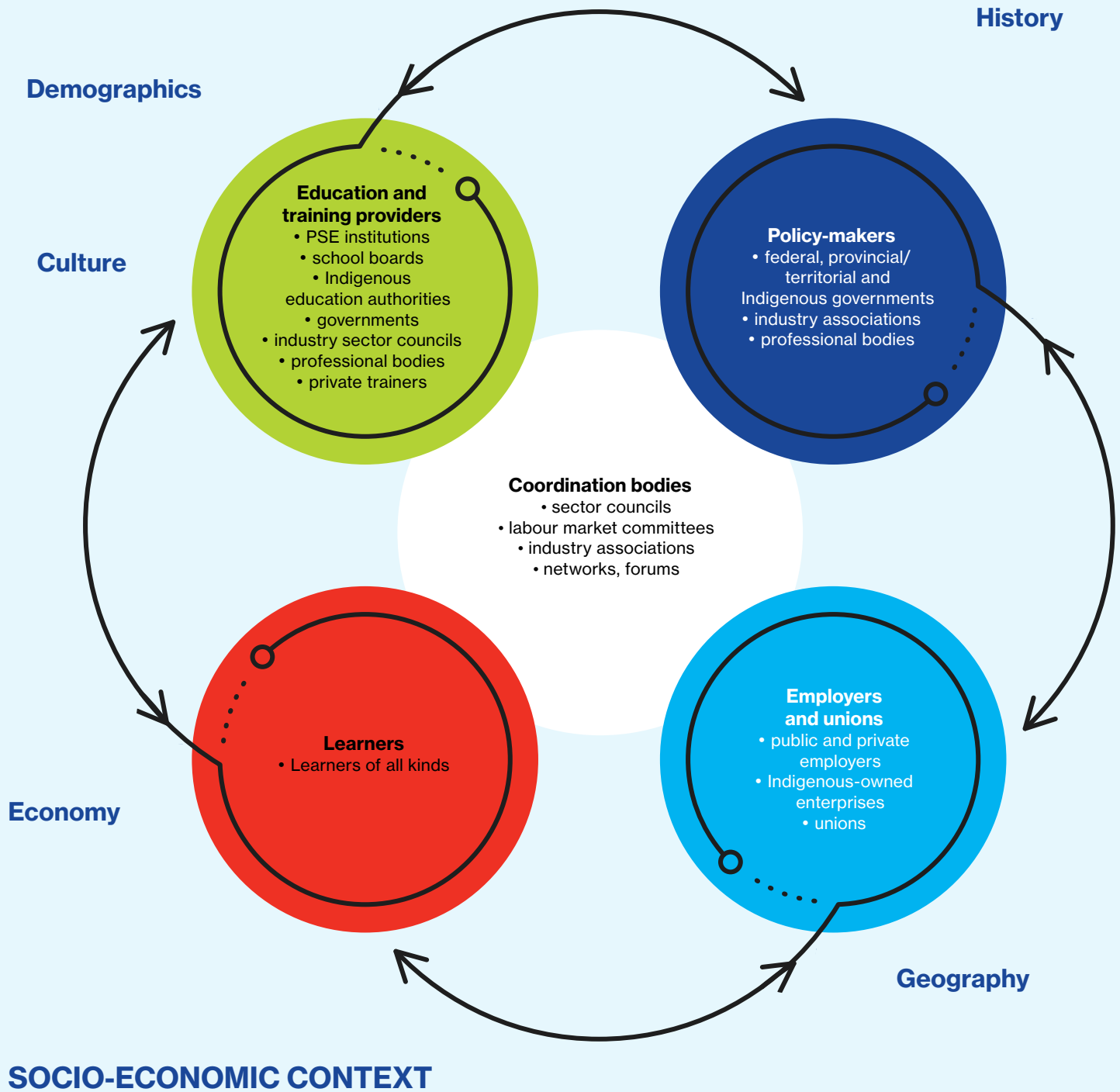7   Ibid.

Components of the ecosystem

There are four main groups of organizations and individuals within the skills development ecosystem. Some members may also participate in a fifth group of coordination or collaboration bodies that support the flow of information and activities among some organizations. (See Exhibit 1.) The whole skills ecosystem is affected by the wider socio-economic context of the region in which it operates, including the local economy, demography, geography, history, and culture.

Members may include:

1. Education and training providers
   • PSE institutions
   • school boards
   • Indigenous education authorities
     and institutions
   • provincial/territorial government
   • industry sector councils
   • professional bodies
   • private training providers
   • early childhood education

2. Policy-makers
   • federal government
   • provincial governments
   • Indigenous governments and
     regional associations
   • industry associations
   • professional bodies

3. Employers and unions
   • private employers
   • public employers
   • unions
   • Indigenous-owned enterprises

4. Learners
   • Indigenous/non-Indigenous people
   • people of all genders
   • beneficiary status
   • urban/rural residents
   • on-reserve/off-reserve residents
   • families
   • communities

5. Coordination/collaboration bodies
   • sector councils
   • labour market committees
   • industry associations
   • networks, forums
   • informal relationships

Exhibit 1
A model of the skills development ecosystem

History

Demographics

Culture

Education and training providers
• PSE institutions
• school boards
• Indigenous education authorities
• governments
• industry sector councils
• professional bodies
• private trainers

Policy-makers
• federal, provincial/ territorial and Indigenous governments
• industry associations
• professional bodies

Coordination bodies
• sector councils
• labour market committees
• industry associations
• networks, forums

Learners
• Learners of all kinds

Employers and unions
• public and private employers
• Indigenous-owned enterprises
• unions

Economy

Geography

SOCIO-ECONOMIC CONTEXT

Coordinating skills development

Given the diversity of organizations in the skills ecosystem, there is a role for bodies that support inter-agency collaboration.[8] That support can include building partnerships, collecting labour market information, identifying occupations in demand, coordinating the delivery of training, promoting career awareness, and evaluating programs—all with the goal of reducing gaps between the supply and demand for local labour.

Coordination bodies come in many forms. These include sector councils, labour market committees, workforce planning boards, training boards, labour market partners councils, and local employment planning councils. There is considerable variation among the bodies, which can affect their longevity and the impact of their work. (See "An open-membership regional initiative: Northern Labour Market Committee, Saskatchewan" and "A regional employer-led initiative: Northern Manitoba Sector Council.")

Convenors and funders

Councils or committees may be established by government, industry, the education sector, or Indigenous communities, or a combination of these. Government funding can help get things off the ground. But if industry doesn't buy in, the entity can fold with a change in political priorities.[9]

Focus

A body may have a geographic focus, at the local, provincial/territorial, or national level. Some grow out of an industry initiative. Others serve a specific population, such as Indigenous people, people with disabilities, or women. Or the focus may be quite specific, such as an industry association working at a regional level.

Structure

Structures can range from purpose-built formal organizations or committees to informal personal networks. Membership may be limited to organizations that pay fees or make other recognized contributions, or it may be open to all interested parties. Well-connected individuals can play a vital role bringing actors together or promoting key skills agendas. But what happens when they retire?[10]

Interaction

Bodies may bring people together for regularly scheduled meetings, intermittent events, such as at annual conferences, and/or one-off events, such as workshops or seminars. Informal "side bar" meetings can be as important as the formal agenda. For example, the primary goal of a career fair may be building career awareness among learners, but it may simultaneously provide an informal venue for players across the ecosystem to meet.

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8 Social Capital Partners, *Working Together*.

9 Pulp & Paper Canada, "Forest Products Sector Council Ceases Operations, but HR Work Continues"; Canadian Plastics, "Canadian Plastics Sector Council Officially Shuts Down."

10 Interview by author with PSE representative, February 8, 2021.

An open-membership regional initiative: Northern Labour Market Committee, Saskatchewan

Since the mid-1980s, the Northern Labour Market Committee (NLMC) has brought together representatives of government, industry, and community to discuss emerging labour market and economic development needs across the vast area of Northern Saskatchewan. The NLMC has three co-chairs representing government, industry, and an Indigenous organization. About 40 to 80 people attend each of the quarterly meetings, which alternate between Prince Albert, La Ronge, and other smaller communities. Participants value the face-to-face meetings for relationship-building. Most organizations fund their own participation. Over the years, the focus of the meetings has changed in response to cyclical changes in industry and/or governmental priorities. But with many senior-level people attending and important decisions often made on the spot, the NLMC has retained its influence and relevance for more than three decades.

Source: The Conference Board of Canada.

A regional employer-led initiative: Northern Manitoba Sector Council

The Northern Manitoba Sector Council (NMSC) is a regional employer-led network representing eight major employers in mining, forestry, hydro, health, and transportation. The provincial government and the local university college are ex officio members. NMSC has supported the recruitment, training, and retention of Northern and Indigenous workers in the region. Its main activities involve coordinating adult skills development initiatives between employers and education and training providers. Core funding comes from the provincial and federal governments, while training initiatives are implemented on a cost-sharing basis with employers. Recent activities include train-to-hire courses to help potential employees prepare for the workplace; workforce adjustments services to help laid off workers transition to new jobs; and career awareness for high school students. NMSC's strong reputation has led new mining exploration and development companies to approach the Council to plan local workforce development at the earliest stages of their projects.

(See our case study: *Skills Development in Northern Mining Regions: Lessons from Manitoba*.)

Source: The Conference Board of Canada.

Context shapes Northern skills ecosystems

A regional skills development ecosystem is shaped by its underlying socio-economic context. Many of the 19 economic regions that make up the North (see Exhibit 2) share a socio-economic context characterized by factors such as:

- demographics that include large and/or young Indigenous populations
- geography that includes sparse populations spread out between many small remote communities
- an environment disproportionately impacted by climate change

- an economy dominated by the natural resources sector
- a colonial history that forced residential schooling and other sources of intergenerational trauma on Indigenous learners

Professionals responsible for skills development in the Northern regions of Canada need to understand more than just the regional socio-economic context. They need to be alert to what makes Northern skills development ecosystems different from those in the South. And they must understand how those differences impact the design and delivery of skills development programs.

Exhibit 2
Map of regions of Northern Canada

Providing education and training in the North

Education and training in the North come in many forms, including traditional classroom delivery, on-the-job training, and increasingly on-line learning. Courses can be anything from a short video to a four-year in-class program. Objectives can range from specific skills for a job opening to building a broad base of knowledge for a lifetime career.

Poor secondary preparation

Northern high school graduation rates lag behind rates in Southern regions.[11] (See Appendix B, Table 1.) As a result, many Northern college applicants require skills upgrading before they can enroll in PSE studies. The secondary school sector in Northern economic regions often faces capacity and resource challenges. For example, First Nations schools have been chronically underfunded, and small remote high schools can offer only a limited range of courses.[12] Even those students who attain a diploma may struggle on entry into many PSE programs. PSE institutions play a critical role in Northern skills ecosystems by helping learners who want to access higher education bridge the gap left by the secondary sector by offering high school equivalency courses.

Small Indigenous education authorities

School boards can strengthen secondary education. In Quebec, Nova Scotia, and Newfoundland and Labrador, there are examples of larger Indigenous education authorities that operate like a regional school board or division. Others are also under development.[13] However, many of the more than 500 federally funded schools on-reserve are locally managed.[14] The development of regional educational authorities serving Indigenous communities in some Northern regions has been slow. This leaves skills development functions that might otherwise benefit from an economy of scale being performed by small local communities. This includes managing capital investments and annual operations; designing supports for all students, including special education; curriculum development; and hiring teachers and providing them with in-service training and professional support.[15]

Teacher shortages

Teacher shortages and turnover at secondary and primary levels are a challenge, particularly in remote communities. Attracting and retaining strong math and sciences teachers is a particular challenge and a root cause of science, technology, engineering, and mathematics (STEM) skills gaps among Northern Indigenous

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11   Commito, *Making the Grade?*; Statistics Canada, Census Profile, 2016 Census.

12   Assembly of First Nations, *Fact Sheet: First Nations Education Funding*.

13   Assembly of First Nations, *Education: Issue Update November 2019*.

14   Canadian School Boards Association—Indigenous Education Committee, *Indigenous Education Structure, Initiatives and Promising Practices*.

15   Wilkins and Sloat, "Why We Need First Nations Education Authorities"; O'Connor, "The Use of ICTs and E-Learning in Indigenous Education."

learners.[16] Seven out of nine Northern universities have faculties of education and some Northern colleges partner with Southern faculties of education to support teacher training. However, most Northern teacher training programs focus on K–6 training. And only six Northern universities offer both science degrees and education degrees. (See Appendix B, Table 2.)

The majority of Northern learners who want to become a science teacher must move south to obtain their degrees. Encouraging these science grads to return to the North is a major challenge. As an alternative, one First Nation in Northern Manitoba helped an engineer from its community get a Limited Teaching Permit, so he can bring his engineering education and experience directly into its high school science classrooms.[17]

Few PSE institutions

Overall, Northern regions have few formal PSE training providers. Many of those are small institutions. Only seven out of 19 Northern economic regions have the advantage of a local university with a mandate for regional development. Programs at those universities are limited. Just four Northern economic regions host engineering schools. And there is only one medical school in the North—the Northern Ontario School of Medicine (NOSM).[18] However, multiple small programs with low enrolment are

hard to sustain. This was one of the problems that led to the 2021 bankruptcy of Laurentian University in Northern Ontario.[19]

In 11 Northern regions, the only local PSE provider is a community college. (See Appendix B, Table 2.) Some of these have fewer students than a mid-sized urban high school. Such small colleges can offer only a limited number of locally designed programs. They need to look outside their regional ecosystem to partner with Southern colleges and universities to deliver much of their curriculum.

Recognizing the digital divide

With few PSE choices, online education appears to offer the potential to expand options for Northern students. However, without access to high-quality broadband, it remains an unfulfilled promise. For instance, only 35 per cent of First Nations reserves meet the Canadian Radio-Television and Telecommunications Commission's 2019 target for broadband service.[20] And nowhere in Nunavut has access to Internet over 25 Mbps.[21] Online training models that depend on broadband Internet access are not feasible in Northern communities. At the same time, many Northern families lack the resources to buy equipment, maintain it, and pay for extended data. Beta testing of SpaceX's Starlink satellite Internet systems in Pikangikum First Nation

16 Aikenhead and others, *Enhancing School Science With Indigenous Knowledge*; Landertinger, Tessaro, and Restoule, "'We Have to Get More Teachers to Help Our Kids'"; Mueller and others, "Teacher Recruitment and Retention in Select First Nations Schools."

17 Interview by author with First Nation education representative, January 28, 2021.

18 The Northern Ontario School of Medicine has campuses at Laurentian University in Sudbury and Lakehead University in Thunder Bay.

19 Rutherford, "Laurentian University Cuts 100 Professors, Dozens of Programs."

20 Canadian Radio-Television and Telecommunications Commission, *Communications Monitoring Report*. Its 2019 target was 50 Mbps (megabits per second) download and 10 Mbps upload with unlimited monthly data transfer.

21 Nunavut Tunngavik Inc., *Nunavut's Infrastructure Gap: Executive Summary*, 10.

in Northern Ontario may prove to be a game changer, although currently it is expensive.[22] In the meantime, Northern learners are not seeing the full benefits of the rush to digital delivery of skills development.

The federal government has several initiatives to finance improved Internet access in Northern communities. The Universal Broadband Fund is the latest, announced at the end of 2020. It includes up to $50 million for projects that primarily benefit Indigenous communities.[23] However, building broadband infrastructure is slow and complicated—without it, schools fall back on workarounds. For example, when the pandemic cancelled in-class learning, Frontier College in Northern Manitoba sent large data files and software to remote students on flash drives. This way they could continue their interactive digital media course without using large amounts of online data.

Setting education policy in the North

Governments set policies that determine what skills are prioritized, which providers are recognized and funded, and which delivery models are preferred.

Large Indigenous populations

In Southern regions and in the territories, provincial/territorial policy dominates education. However, in the Northern regions of provinces where there are large Indigenous populations,

federal policy on funding of Indigenous education and training also impacts the skills ecosystem. Indigenous governments can also play a major role. In some regions, all three levels of government may coordinate policy through tripartite education agreements.[24] The federal government often determines much of the post-secondary funding available to First Nations, Inuit, and Métis. But local communities set their own policies about how to distribute that funding among their members. These community-level decisions affect the numbers of funded students enrolling in local secondary and PSE institutions.

Rigid training models

When they get to PSE, Northern learners may find training delivery models developed in Southern urban contexts are less appropriate—or even create barriers—in Northern communities. An example is apprenticeship training where the ratio of apprentices to journeypersons may be difficult, if not impossible, to meet in small Northern communities.[25] Apprentices may also have to make long, expensive trips to designated Southern PSE institutions for their in-class training—where translation into Indigenous languages like Inuktitut is unlikely. The flexibility of provincial/territorial policies on apprenticeship training impacts the opportunities for Northern apprentices.

22 Walters, "Pikangikum First Nation Gets Broadband From SpaceX Starlink."
23 Innovation, Science and Economic Development Canada, "Universal Broadband Fund."
24 Indigenous Services Canada, "First Nation Education Partnerships and Agreements."
25 Beaudry and Perry, "Levelling Up."

Employers drive Northern demand

Employers determine the demand for labour and have a vested interest in the skills the workforce has. Most employers prefer to hire local labour when possible. And many are interested in working with local trainers and communities to build the skills of potential employees.

Syncing with commodity cycles

The natural resources sector plays an outsized role in Northern economies, leaving Northern regions more susceptible to commodity cycles.[26] Business cycles are typically six years long. In addition, commodity cycles in resource industries may span a decade or more.[27] Formal PSE adapts slowly and syncing program development with commodity cycles is difficult. It can take two years to design a new PSE program and another two to four years before graduating the first students. Employers may work with education and training providers to prepare for the impact of future commodity cycles on changing labour needs. Continuing education providers may be the most nimble at serving current needs, along with smaller non-profit and private trainers. (See "A nimble PSE response to sectoral change.")

A nimble PSE response to sectoral change

The Northern Manitoba Mining Academy (NMMA) is based within the University College of the North, but it is governed by its own board that brings together expert representatives of governments, industry, and Northern and Southern PSE institutions. NMMA is a small, lean operation that focuses on developing just-in-time training within a couple of months in response to current industry requests. Courses run from a few days to three months, with training focused on closing specific skills gaps. Graduates are set up for immediate employment or can bid on current contracts.

Source: The Conference Board of Canada.

26 Bernard, *From Oil to Diamonds*.
27 Buyuksahin, Mo, and Zmitrowicz, *Commodity Price Supercycles*.

Dominant private sector employers

While the public sector remains the largest employer in many Northern economic regions, public sector growth is often tied to private sector fortunes. Large natural resources employers, such as mining or forestry companies, are often the biggest contributors to regional GDP. And Impact Benefit Agreements (IBAs), Memorandums of Understanding (MOUs), and partnership agreements between large private sector employers and Indigenous groups can be major drivers of job-focused skills development in Northern regions.[28]

Indigenous economic development corporations

While many Indigenous businesses are small, in some Northern regions economic development corporations owned by Indigenous peoples have become significant investors and employers.[29] These community-based organizations want their community members to build the necessary skills to participate in their Indigenous-led economic activities, including in leadership positions.[30]

Southern recruitment

Some employers in Northern regions recruit from outside their regions, particularly when they cannot find specific skills at the local or regional level. Meanwhile, local workers are unemployed or underemployed. This suggests that the local skills

ecosystem is failing to balance the employers' demand for workers with an adequately trained local workforce.

Learners deserve support

The group most interested in the work of the skills ecosystem are the learners. The population in many Northern regions is younger than in Southern regions. This means many young people seeking a relevant education. In Nunavut, and in the North of the Northwest Territories, Saskatchewan, Manitoba, and Quebec, more than a quarter of the population is under the age of 15.[31]

However, a complex nexus of issues makes graduating high school and accessing PSE something of a "wicked problem" for Indigenous learners.[32] Intersecting challenges include remoteness, teacher shortages and turnover, inadequate funding, housing shortages, small schools, and poor Internet. All of these are compounded by the legacy of the residential school system. Therefore, the provision of learner supports is important where Northern learners face unique challenges building the foundational skills they need to enter the labour market

Integrated learner supports

Many Northern learners would benefit from targeted supports to stay in school through to graduation. (See "Incorporating social supports in trades training.") The economic regions with the highest proportion of people who had not completed high school were Northern

28 Canadian Council for Aboriginal Business, *Aboriginal Economic Development Corporation Capacity*, 13.
29 Ibid.
30 Interview with First Nations economic development representative, February 15, 2021.
31 Statistics Canada, Table 17-10-0137-01.
32 Rittel and Webber, "Dilemmas in a General Theory of Planning."

Saskatchewan (43 per cent), Nunavut (41 per cent), Northern Manitoba (37 per cent), and Nord-du-Quebec (35 per cent).[33] Learner supports may require coordination with a variety of social service providers that are outside the school system but essential to the skills ecosystem. At the same time, PSE providers need creative programs to help adult learners—both dropouts and graduates—compensate for a weak secondary education.

33 These data are from separate regional economic profiles available on the Statistics Canada website. Statistics Canada, *North [Economic Region], Manitoba and Manitoba [Province]* (table); N*ord-du-Québec [Economic region], Quebec and Quebec [Province]* (table); *Northern [Economic Region], Saskatchewan and Saskatchewan [Province]* (table); N*unavut [Economic region], Nunavut and Nunavut [Territory]* (table).

Incorporating social supports in trades training

Training programs that integrate social supports and essential skills upgrading can increase access to apprenticeships.[34] In 2014, Manitoba Hydro launched a program, in cooperation with the Northern Manitoba Sector Council (NMSC), to train Indigenous apprentices from Northern Manitoba in four trades. Most came from Northern First Nations and had not completed high school. Many were leaving their communities for the first time for training in Thompson or The Pas. To prepare them for the apprenticeship, NMSC designed a support program that included training in life skills and essential skills upgrading. Two mentors supported the trainees, along with a dedicated "problem solver coordinator" who aimed to remove barriers to learning in whatever form they took, from health to housing and furniture. NMSC also arranged work placements for these out-of-town trainees with local employers. By 2021, at least 11 Red Seal-certified journeypersons had graduated and were ready to work and continue the trades training cycle.[35]

Sources: Beaudry and Perry; The Conference Board of Canada.

34 Beaudry and Perry, "Levelling Up."
35 Province of Manitoba, "Province, Manitoba Hydro Launch Northern Trades Training Program."

Leaving home to learn

Learners in remote communities with small schools who want to graduate from high school often have to leave home. Many students first leave home for high school rather than for PSE. Safe, affordable student housing can be hard to find for these young Northern students, not to mention the broader range of social supports such as childcare. Organizations in the Northern skills ecosystems must recognize the particular vulnerability of young learners studying far from their families.

Few starter jobs for teens

PSE providers and/or employers in the North may also have to train for job readiness. Indigenous youth have fewer opportunities to acquire basic job skills while they are still in school. In 2016, only 32 per cent of First Nations youth and 36 per cent of Inuit youth aged 15 to 24 were employed, compared with 53 per cent of non-Indigenous youth.[36] This is particularly true in remote Northern communities where learners may reach adulthood without a social insurance number, a bank account, or experience with on-the-job time management and priority-setting.[37]

A driver's licence is not a given

The ability to drive is another common missing skill. Small Northern schools rarely offer driver education. Learners are on their own to find a vehicle, a skilled relative to teach them, and good roads to practise on before travelling to a distant testing centre. And without the licence it is difficult to get to training or job sites. It is even harder to enter in-demand apprenticeships like heavy equipment operators and mechanics.

Employers are gatekeepers for trades training

Access to apprenticeships is controlled by employers as they recruit trainees and assign them to learn with a journeyperson. Systemic barriers to employment, such as biased recruitment and hiring practices, become barriers to learning for Indigenous people following the apprenticeship path.

Learner culture shock

Even when they meet the prerequisites, Northern Indigenous learners can face culture shock when they enter training and work environments where non-Indigenous cultures are the norm. Many Indigenous communities place a high value on encouraging local languages and cultural practices in community schools. However, when students move on to mainstream PSE, those hard-won skills are often not valued. When training programs are designed around cohorts of Indigenous learners, there is less chance that a mix of cultures will affect learning.[38] Employers can also help by extending the cohort approach into the workplace to reduce the isolation Indigenous workers can feel on the job—an isolation that can contribute to newly skilled workers leaving the workplace.[39]

36 Canadian Institute of Child Health, "Percentage of Youth Aged 15 to 24 Years Who Are Employed and Unemployed, by Indigenous Identity, Canada, 2016."

37 Interview by author with skills development professional, January 24, 2021.

38 Beaudry and Perry, "Levelling Up," 14.

39   Interview by author with First Nation's industry representative, February 5, 2021.

Train for cultural competency

Because there is a high proportion of Indigenous learners in Northern regions, cultural competency is necessary across the skills ecosystem. The Truth and Reconciliation Commission called for all public servants and management and staff in the corporate sector to have "skills-based training in intercultural competency, conflict resolution, human rights, and anti-racism."[40] That Call to Action would apply equally to individuals throughout the ecosystem, including educators, curriculum designers, human resource professionals, and managers.

Education as a ticket out

When Northern learners obtain the prerequisites for post-secondary studies, many are drawn south to make the most of their expanded opportunities.[41] Moving to Southern areas for studies and jobs may be good for individuals. But this brain drain creates a disconnect between the plans of the education and training sector and the number of skilled workers remaining in Northern communities.

Coordinating Northern skills ecosystems

Coordination bodies in Northern regions have developed within the Northern context. Some of the factors that make these bodies work include:

Strong local input

While the participation of provincial representatives may ensure good communication between the region and the province, local bodies need to be driven by representatives of local Indigenous communities, governments, employers, and education and training providers. These are the people who have an authentic, first-hand understanding of the Northern context and, in particular, the Indigenous context. They also know where to find existing Indigenous skilled workers who may be the most appropriate trainers, mentors, and role models to support Indigenous learners.

Outreach to remote communities

Shifting venues and holding some meetings in smaller communities can allow local organizations to showcase their activities to outsiders to expand their understanding of the remote context.

Cooperation

Local people will be the first to recognize that in sparsely populated Northern regions, none of the actors can close the gaps in skilled labour alone. Budgets and capacities of all organizations are smaller, if only because of the smaller population base.

40 Truth and Reconciliation Commission of Canada, *Truth and Reconciliation Commission of Canada: Calls to Action*, 7.
41 Hillier and others, "Will They Stay or Will They Go?," 185.

Barebones administration

Given that smaller scale, Northern coordination committees and councils work with limited resources. However, a small administrative hub is usually necessary. Where there is no formal coordination organization, administration might be hosted by a member, such as a local college.

Cultural competency

Regardless of who runs the hub, cultural difference needs to be recognized and appreciated. Where there is a mix of Indigenous and non-Indigenous participants, cooperation has to be grounded in an atmosphere of mutual respect and a commitment to reconciliation.

Flexibility

Ultimately, formal bodies must be able to respond to sectoral change and commodity cycles. One Northern committee maintains terms of reference for subcommittees for each sector. But not all operate all the time. The value of subcommittees is regularly evaluated. Some may sit dormant until the next upswing in that sector.

Shared leadership

Whether a coordination body has broad participation or is more narrowly targeted, strong personal relationships are often at the core of tight-knit ecosystems. But they can be both a strength and a vulnerability. When key individuals in critical positions retire or move on, the network can be weakened. And if communications are dominated by informal networks, there is no structure to refer to when individuals are gone. Succession-planning for leaders is important.

The Northern Saskatchewan Labour Market Committee has three co-chairs with three-year terms. One co-chair changes each year, to balance continuity and change among the leadership.

Equitable representation

A challenge often remains in ensuring that bodies represent the full range of interests. For example, the large private sector employers can have a disproportionate influence in skills ecosystems because they can afford to participate directly in bodies. In comparison, the skills development needs of small businesses in the North may be under-represented. Likewise, Indigenous distinctions may be overlooked, with groups like the Métis left out of coordination bodies. To ensure broader participation, the Northern Saskatchewan Labour Market Committee has subsidized travel for representatives of smaller groups, so they too can have their say at meetings. Of course, during the pandemic, meetings have been virtual but a bonus has been wider participation as there is no cost to attend.

Lessons to share

Narrowing the gap between the supply and demand for skilled labour will be essential to broad-based prosperity as economies change in Canada's North. Skills ecosystems in the Northern regions of the provinces and territories have distinct features and face distinct challenges. As Northern regions grapple with change—whether that is new technologies, commodity cycles, demographic change, climate change, or new Indigenous governance models—replicating skills development strategies designed for densely

populated, industrialized, and urbanized regions in the South will not be the answer. Northern workforces, including Indigenous workers, deserve skills development approaches that are built for the challenges of the Northern context and provide genuine opportunities. Some lessons for actors supporting Northern skills ecosystems to consider include:

Upgrading for adults

Many adult learners in the North need a chance to catch up on high school subjects they were not taught or were poorly taught. That can start with upgrading in essential skills. But upgrading should also extend to academic and technical subjects, such as senior maths and sciences.

Travelling students

Learners studying far from their families are particularly vulnerable. Social and learning supports need to be integrated and coordinated within all educational pathways.

Job readiness

Where there are few starter jobs for youth, adult learners may need job-readiness training to replace the on-the-job learning that Southern learners get in their first jobs.

Attract teachers

Some professionals may be willing to adapt to work as Northern classroom teachers in the short run. But policy-makers need to find better ways to make teaching in the North attractive to more education graduates, including ensuring high-quality in-service supports, to keep these professionals in the North. This applies equally to Indigenous and non-Indigenous teachers.

Digital limitations

Be realistic about online learning in communities with poor Internet service. Broadband investments are essential but slow. And digital literacy should be taught as an essential skill for people who have limited opportunity to build online skills in their communities.

Cohort training

Training cohorts of Indigenous learners together can reduce the risk that cultural difference will be a barrier to learning. Continuing that support model into the workplace may increase employee retention.

Continuity of leadership

For strong coordination bodies, shared leadership with regularly scheduled turnover can help balance program continuity with new ideas. Senior leaders should work alongside emerging leaders to share experience across the ecosystem.

Looking forward

In practice, the people active in Northern skills ecosystems have strong experience working together to provide training in the skills needed for current job openings. But Northern actors can be cautious—or even reluctant—to risk speculative training for skills that are just emerging and occupations that are still over the horizon. However, if Northern skills ecosystems are going to prepare for future skills beyond the next year or two, looking further into the future will be necessary. This may be the biggest challenge facing skills development in the North.

Appendix A
Methodology

The findings presented in this primer come from several sources.

- A review was conducted of more than 250 academic and grey literature sources on sectoral change and skills development systems across Canada and in the North.
- During the fall of 2020 and winter 2021, 37 interviews were conducted with people directly involved in Northern skills development ecosystems, including 13 in Manitoba, 21 in Saskatchewan, and three at the national level. A total of 30 hours of interviews were recorded, transcribed, and coded using NVivo qualitative data analysis software.
- Interview participants were associated with:
  - post-secondary education (5)
  - provincial and federal government (5)
  - Indigenous communities and businesses (5)
  - industry bodies (3)
  - mining companies (3)
  - skills development coordinating bodies (2)
  - secondary education (1)

Appendix B
Data tables

Table 1

Educational base of the potential workforce in 2016, 19 economic regions

(highest certificate, diploma, or degree for the population aged 25 to 64 years in private households; per cent)

Economic region	Total (n)	None	High school	College or CEGEP	Trades	Univsity certificate / diploma	Bachelor's degree	Post-graduate diploma	Medical degree	Masters	Doctorate
Northern, SK	16,400	43	21	14	10	2	8	0	0.2	1	0.1
Nunavut, NU	16,485	41	15	19	10	1	9	0	0.2	4	0.3
North, MB	40,870	37	24	15	9	3	8	1	0.2	1	0.1
Nord-du-Québec, QC	21,235	35	14	15	23	3	7	1	0.2	2	0.2
Parklands, MB	19,475	21	31	23	10	3	9	1	0.4	1	0.1
Northwest Territories, NT	23,610	21	19	22	11	3	17	1	0.5	6	0.4
Côte-Nord, QC	50,310	21	18	19	26	3	9	1	0.4	2	0.2
Athabasca–Grande Prairie–Peace River, AB	140,160	21	29	21	14	3	9	1	0.4	2	0.2
North Coast, BC	30,130	20	28	21	13	3	10	1	0.4	3	0.3
West Coast–Northern Peninsula–Labrador, NL	57,580	19	22	29	14	2	9	1	0.4	3	0.2
Nechako, BC	20,595	18	31	20	14	3	10	1	0.5	3	0.1
Northeast, BC	37,290	18	32	20	16	3	9	1	0.4	2	0.3
Prince Albert, SK	100,845	17	31	53	13	3	8	11	0.5	2	0.1
Northwest, ON	119,995	17	25	27	10	2	14	1	0.5	3	0.5
Cariboo, BC	84,485	16	32	21	13	3	10	1	0.6	3	0.4
Saguenay–Lac-Saint-Jean, QC	146,385	13	16	21	31	3	12	1	0.5	2	0.4
Northeast, ON	288,370	13	26	32	10	2	12	1	0.5	2	0.4
Yukon, YT	21,030	11	21	24	11	3	20	2	0.8	7	0.5
Wood Buffalo–Cold Lake, AB	83,845	11	27	25	16	3	13	1	0.4	3	0.3
Total	**1,319,095**	**18**	**25**	**27**	**15**	**2**	**11**	**2**	**0.5**	**2**	**0.3**

Source: The Conference Board of Canada.

Table 2

Post-secondary institutions in Northern economic regions

Economic region	Regional university	Engineering schools	Medical schools	Education faculties	Science degrees	Regional college(s)
Yukon, YT	Yukon University			Y	Y	
North, MB	University College of the North			Y		
Cariboo, BC	University of Northern BC	Y		Y	Y	
Saguenay–Lac-Saint-Jean, QC	Université du Québec à Chicoutimi	Y		Y	Y	
						• Cégep de Chicoutimi • Collège d'Alma • Cégep de Jonquière • Cégep de Saint-Félicien
Northeast, ON	University Algoma				Y	
	University of Sudbury					
	Laurentian University	Y	Y	Y	Y	
						• Cambrian College • Sault College • College Boreal
Northwest, ON	Lakehead University	Y	Y	Y	Y	
						• Northern College
Prince Albert, SK	University of Saskatchewan, Prince Albert Campus			Y	Y	
	First Nations University of Canada, Prince Albert Campus			Y		
						• Gabriel Dumont Institute, Northern campuses • North West College • Saskatchewan Indian Institute of Technologies, Northern campuses • Saskatchewan Polytechnic
Athabasca–Grande Prairie–Peace River, AB	Athabasca University (online only)				Y	
						• Grande Prairie Regional College • Northern Lakes College
Nord-du-Québec, QC						• Centre de formation professionnelle de la Baie-James
Wood Buffalo–Cold Lake, AB						• Keyano College • Portage College
Northwest Territories						• Aurora College • Collège nordique
West Coast–Northern Peninsula–Labrador, NL						• College of the North Atlantic

Table 2 (cont'd)

Post-secondary institutions in Northern economic regions

Economic region	Regional university	Engineering schools	Medical schools	Education faculties	Science degrees	Regional college(s)
Parklands, MB						• Assiniboine Community College
Côte-Nord, QC						• Cégep de Baie-Comeau • Cégep de Sept-Îles
North Coast, BC						• Coast Mountain College
Nunavut						• Nunavut Arctic College
Nechako, BC						• Northern Lights College
Northern, SK						• Northlands College • Saskatchewan Indian Institute of Technologies, Northern campuses • Gabriel Dumont Institutes, Northern campuses
Northeast, BC						• Northern Lights College

Source: The Conference Board of Canada.

Appendix C

A sample Northern skills development ecosystem

Trades' apprentices combine on-the-job learning under the supervision of a journeyperson with regular short courses usually delivered by a college. After completing a three- to four-year program and passing a provincial exam, an apprentice will be awarded a Certificate of Qualifications in his or her trade. A wide range of organizations are involved with some aspect of apprenticeship training in Northern Manitoba.

Table 1

The skills ecosystem for trades apprentices in Northern Manitoba

Roles	Functions	Responsible actors
Planning and coordination	Conducting labour market research for the trades	• Province of Manitoba's **Look North** initiative collected Northern labour market information (LMI) • **Thompson Economic Diversification Working Group** (TEDWG) has collected regional LMI • **Northern Manitoba Sector Council** coordinates between employers and training providers for the delivery of trades training • **Northern Manitoba Mining Academy** coordinates some trades training
Producing standards	Defining occupations and skills	• Federal government through **Employment and Skills Development Canada** (ESDC) develops National Occupational Classifications • **Canadian Council of Directors of Apprenticeship** sets occupational standards for Red Seal trades • **Provincial Apprenticeship and Certification Board** manages the designation of new trades in the province • **Provincial Trade Advisory Committees** advise the Board on skill and training standards for respective trades
Training	Designing curriculum	• Province of Manitoba, **Apprenticeship Manitoba** sets curriculum for trades training • Province of Manitoba, **Workplace Safety and Health** defines required safety training • Safety associations and committees (e.g., **Construction Safety Association of Manitoba**) also set standards for industry-specific safety training
	Delivering training	• Designated community colleges (e.g., **University College of the North**) delivers levels 1, 2, 3, and 4 courses for some trades • **Northern Manitoba Mining Academy** supports some trades training • Industry associations deliver introductory training (e.g., **Manitoba Heavy Construction Association, Manitoba Construction Sector Council)** • **Frontier Collegiate Institute** offers high school apprenticeship training
	Arranging on-the-job training	• Employers hire apprentices and assign them to learn from journeypersons • Provincial regulations determine the ratio of apprentices to journeypersons and define the kind of supervision provided by the journeyperson
Certification and accreditation	Accrediting training programs	• Province of Manitoba, **Apprenticeship Manitoba**
	Accrediting training providers	• Province of Manitoba, **Apprenticeship Manitoba**
	Issuing certificates/diplomas/ degrees	• Province of Manitoba, **Apprenticeship Manitoba** • **Canadian Council of Directors of Apprenticeship**, Interprovincial Standards (Red Seal) Program
Funding	Raising taxes	• Federal tax credits subsidize apprentices' tools purchases • Provincial taxes subsidize apprentice course tuition
	Supporting post-secondary education and adult education	• Employers pay apprentices during their on-the-job learning, at a graduated rate, depending on what level they are at
	Making capital investments	• Colleges are funded by the province
	Providing operational funding	• Colleges are funded by the province. • Indigenous Services Canada funds some trades training on-reserve
	Paying tuition	• Apprentices pays 11 to 17 per cent of the fees for courses, with the balance paid by the province
Learner supports	Providing career awareness and guidance	• **Provincial Apprenticeship and Certification Board** • **Northern Manitoba Sector Council** • **Workplace Education Manitoba** • Industry associations
	Financial aid	• Apprentices may be covered by Employment Insurance (EI) during in-class courses • Employers may cover some costs for their apprentices • First Nations may fund trades training through the Indigenous Skills and Employment Training (ISET) program, administered in Northern Manitoba by **Manitoba Keewatinowi Okimakanak (MKO)**
	Student housing	• Responsibility of the apprentice
	Social services and cultural supports	• Not a standard part of apprenticeship training, but some programs arranged by the **Northern Manitoba Sector Council** have included additional supports for Indigenous apprentices
	Special needs supports	• **Workplace Education Manitoba** provides essential skills training for prospective apprentices in four Northern communities

Sources: Apprenticeship Manitoba; The Conference Board of Canada.

Appendix D
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Acknowledgements

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Jane Cooper

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