

Indigenous Hunter and Guardian Programs

An Analysis of Economic and Social Benefits

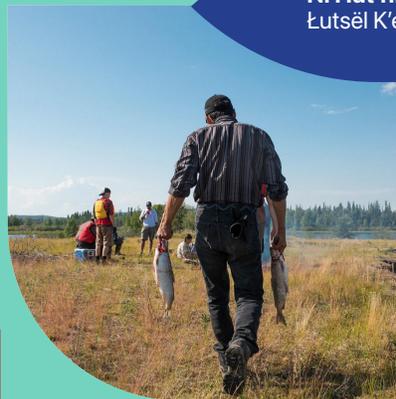


Imaryuk Monitors
Tuktoyaktuk
and Inuvik, NT



Dechinta
Yellowknife, NT

Ni Hat'ni Dene
Lutsël K'é, NT



Angunasuktiit
Clyde River, NU



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Prepared for MakeWay by CoEvaluation Lab (Christina Hackett, christina@coevaluationlab.com) and Shari Fox, Ph.D.

MakeWay is a national charity and public foundation with a goal to enable nature and communities to thrive together.

We do this by building partnerships, providing solutions, grants, and services for the charitable sector across the country.



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Manual Art Direction/Production: Beverly Hancock (bevdidthat.design)

Cover Illustrations: Nooks Lindell

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Executive SummaryTM

Investing in Northern Indigenous Hunter and Guardians programs yields measurable economic and social returns that benefit Northern communities as well as all Canadians.

While communities have long known the value of these programs, their benefits are often overlooked or misunderstood by those making funding and policy decisions. This report translates those benefits into economic terms – demonstrating how these programs reduce public spending, strengthen communities, and generate value far beyond their cost.

Hunter and Guardians programs are Indigenous-designed, locally-led responses to impacts of colonization. They address urgent priorities such as food security, health, and cultural continuity. This report draws on a multi-year, collaborative study of four such programs, applying a social cost-benefit analysis (SCBA) to calculate their net value.

Return on Investment (ROI) is clear:

When considering only food security and employment outcomes alone, programs return

\$1.43 to \$2.25 for every \$1 invested

When including improved life satisfaction and wellbeing, the return increases to

\$3.70 to \$5.37 for every \$1 invested



Without healthy funding for these programs, there are significant costs across publicly funded systems. Investing in long-term, sustainable funding for Hunter and Guardians programs reduces those costs and builds positive health, mental health, environmental, and economic outcomes that last across generations.¹

Hunter and Guardians Programs:

- Strengthen food systems

and reduce dependency on overburdened health care services in both Northern and Southern regions;

- Improve community health & wellbeing

through culturally rooted education and time on the land, reducing avoidable GDP losses;

- Create full-time, year-round employment

especially for Indigenous youth – while expanding training and educational pathways;

- Generate tax revenue

In short: these are not only cultural or land-based programs – they are smart, strategic public investments.

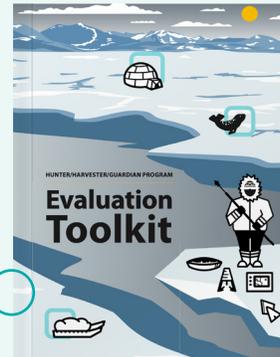


Hunter and Guardians programs nurture many other community values and priorities including strengthening language, sense of identity, sense of purpose and belonging, and providing and caring for community.



Background ^M

In 2021, MakeWay published the "Hunter/Harvester/Guardians Program Evaluation Toolkit".



The purpose of the toolkit is to provide a resource that organizations and communities can use to plan, design, and do evaluation of Hunter and Guardians programs. Four interrelated outcome areas for Hunter and Guardians programs were identified in the process of developing the toolkit:²

-  **Food Security & Food Sovereignty**
-  **Health & Wellbeing**
-  **Ecological Conservation**
-  **Indigenous-Centred Economic Development**

Four Hunter and Guardians programs who contributed to the toolkit continued this work to explore how their programs influence outcomes for:

-  **Staff, including Elder Staff**
-  **Students/Participants**
-  **Northern Indigenous Communities**
-  **Society**



Through four years of collaboration, these programs developed tools and collected data and information so that they could calculate the economic costs and benefits of investing meaningfully, and sustainably, in Hunter and Guardians programs like theirs from two economic perspectives:

-  **For Northern Indigenous communities**
-  **For payers, and ultimately tax payers in Canada**

Who do we mean – Hunters and Guardians?

We refer to Hunters and Guardians as those whose primary livelihood is hunting, harvesting, and taking care of their surrounding environment. Hunters and Guardians play essential roles in sustaining Northern communities, contributing to health and wellness, culture, and the environment. These roles vary by community but all support mixed economies and subsistence livelihoods.



Indigenous leaders have long called for sustained investment in these roles—including compensation, equipment, and infrastructure—on par with other essential services.

These programs also address impacts of colonization like food insecurity and disruption to knowledge and language transfer. They also support research and monitoring, responses to impacts from climate change, and emergency/Search and Rescue operations.

“Outside governments and organizations have tried to improve food security in Northern communities by introducing various programs. Evidence shows they are failing. Inuit already have a food system. And it works. Investing in our food system is what will improve our food security. And accomplish much more” (from the Angunasuktiit Exchange Project, Clyde River, Nunavut and Makkovik, Nunatsiavut). *Reference:* https://www.youtube.com/watch?v=x7UIO5_4ams

Rationale[®]

Northern Indigenous communities experience and deeply understand the benefits of investing in Indigenous Hunter and Guardians programs. However, these benefits are often unseen and/or unfamiliar to those making resource allocation and policy decisions, often from places quite remote, both geographically and culturally, from the Northern Indigenous communities where Hunter and Guardians programs operate. The rationale for this work is to:

- **Strengthen the evidence base**

through collaborative work that demonstrates links between Indigenous Hunter and Guardians programs and their diverse activities, and outcomes for individuals and communities; and

- **Demonstrate the net economic benefits**

of program outcomes for **Northern Indigenous communities** (i.e. community economic perspectives), and for **Canadian tax payers more broadly** (i.e. payer economic perspectives).

The Programs

 **Dechinta**
Yellowknife, NT

 **Imaryuk Monitors**
Tuktoyaktuk and Inuvik, NT

 **Ni Hat'ni Dene**
Łutsël K'é, NT

 **Angunasuktiit**
Clyde River, NU



Locations of the four programs that contributed to this report.



Dechinta Yellowknife, NT



The Dechinta Centre for Research and Learning (Dechinta) is an Indigenous land-based initiative delivering accredited post-secondary education and research experiences in the North. Led by Northern experts, Dechinta aims to engage students, researchers and community members in transformative academic programs based on the unique needs of Dene and Inuvialuit communities.

For this report, Dechinta focused on building tools, collecting data, calculating the economic benefits of hunted foods, and conducting a cost benefit analysis of land-based academic programming.



■ Imaryuk Monitors Tuktoyaktuk & Inuvik, NT



Imaryuk Monitors promote and monitor compliance to the restrictions on fishing activity established by the Community Fishing Plan created by Inuvik and Tuktoyaktuk. They monitor the Inuvik to Tuktoyaktuk Highway (ITH) and also assist with other programs to assess and monitor fish stocks and fish habitat in the area.

The Imaryuk Monitors and Tuktoyaktuk and Inuvik Hunters and Trappers Committees focused on building integrated, digital daily monitoring tools and a dashboard, to produce data in real-time about key observations on the ITH. These data will be used to build future economic analyses.



■ Ni Hat'ni Dene Łutsël K'é, NT



Ni Hat'ni Dene means 'watchers of the land' in Dēnesųliné yatié. Ni Hat'ni Dene are the stewards of Thaidene Nënë, an Indigenous Protected Area designated by the Łutsël K'é Dene First Nation, Parks Canada, and the Government of the Northwest Territories. Ni Hat'ni Dene staff harvest food for the community, maintain the integrity of cultural sites, conduct environmental monitoring, and welcome visitors to Thaidene Nënë.

Ni Hat'ni Dene have been caring for Thaidene Nënë since the program was formally established in 2008. In the beginning, the Ni Hat'ni Dene Guardians were posted at important sites within Thaidene Nënë during the summer months, including Kaché (Fort Reliance), the heart of Thaidene Nënë, and the gateways to Thaidene Nënë: Kaldēle (Talthelai Narrows) and Pekanatui Point. Eventually, Ni Hat'ni Dene were tasked with monitoring caribou and harvesting in the winter months. As of January 2020, Ni Hat'ni Dene is a full-time, year-round program.

In this collaboration, the Ni Hat'ni Dene focused on building evaluation tools and calculating the economic benefit to communities of hunted food.

Angunasuktiit Clyde River, NU



Angunasuktiit ("hunters") is a full-time, year-round land program operated by the Ittaq Heritage and Research Centre (Ittaq) in Clyde River, Nunavut. Ittaq is a division of Ilisaqsivik Society, an Inuit-led registered charity in the community. Angunasuktiit has a team of Inuit hunter-instructors who teach youth and other participants all aspects of hunting, harvesting, and being on the land. The program distributes the healthy foods they harvest to the community free of charge, increasing local access to country foods and training future hunters. The program also contributes to environmental research and monitoring, strengthens culture, language, and knowledge, and supports local Search and Rescue.

The Angunasuktiit focused on building tools and a dashboard to monitor hunting and student activities, calculating the economic benefit of hunted food, and conducting a cost-benefit analysis of hunting and student activities.



With consistent funding, programs like the Angunasuktiit evolve and strengthen over time, continually building and responding to the changing needs of their land and people.



Methods⁸

To capture outcomes and calculate economic benefits of investing in Indigenous Hunter and Guardians programs, we identified (Table 1):³

- the needs and issues Hunter and Guardians programs address in their communities;
- each program's core activities;
- outcomes related to these activities; and
- based on observed outcomes, planned and/or calculated the economic costs and benefits of investing in Hunter and Guardians programs

Table 1: Needs, activities, and outcomes considered in this analysis

Need/Issue	Program Activities	Outcome(s)
Disrupted food systems	<ul style="list-style-type: none"> • Time on the land hunting, harvesting • Teaching and learning hunting and harvesting skills, including food processing and food sharing 	<ul style="list-style-type: none"> • Increased food sovereignty • Increased food security
Disconnection from the land, and land-based and cultural knowledge, skills, language and related wellbeing	<ul style="list-style-type: none"> • Time on the land • Teaching, learning and practice on the land • Intergenerational connectedness on the land • Land-based career pathways 	<ul style="list-style-type: none"> • Increased health • Increased mental health • Increased wellbeing
Dispossession of land	<ul style="list-style-type: none"> • Monitoring and land stewardship by Guardians 	<ul style="list-style-type: none"> • Increased ecological conservation
Disruption of Indigenous-centred economies	<ul style="list-style-type: none"> • Land-based career pathways • Mentorship, training, skills development • Stable, meaningful employment 	<ul style="list-style-type: none"> • Increased Indigenous labour market and economic prosperity

From observed program outcomes, we were able to calculate*:

- For the three programs with hunting activities (Ni Hat'ni Dene, Dechinta, Angunasuktiit), the store-bought equivalent of food hunted/harvested, which is the amount it would cost to purchase the equivalent amount of meat (by weight) at the local grocery store. These analyses are from the **community economic perspective**; and
- For the two programs capturing data related to health and Indigenous-centred economic development outcomes (Dechinta and Angunasuktiit), we used a social cost-benefit approach (SCBA) to calculate the net-present-value (NPV) of investing in Indigenous Hunter and Guardians programs. These analyses are from the **payer economic perspective** and include societal benefits to investments.

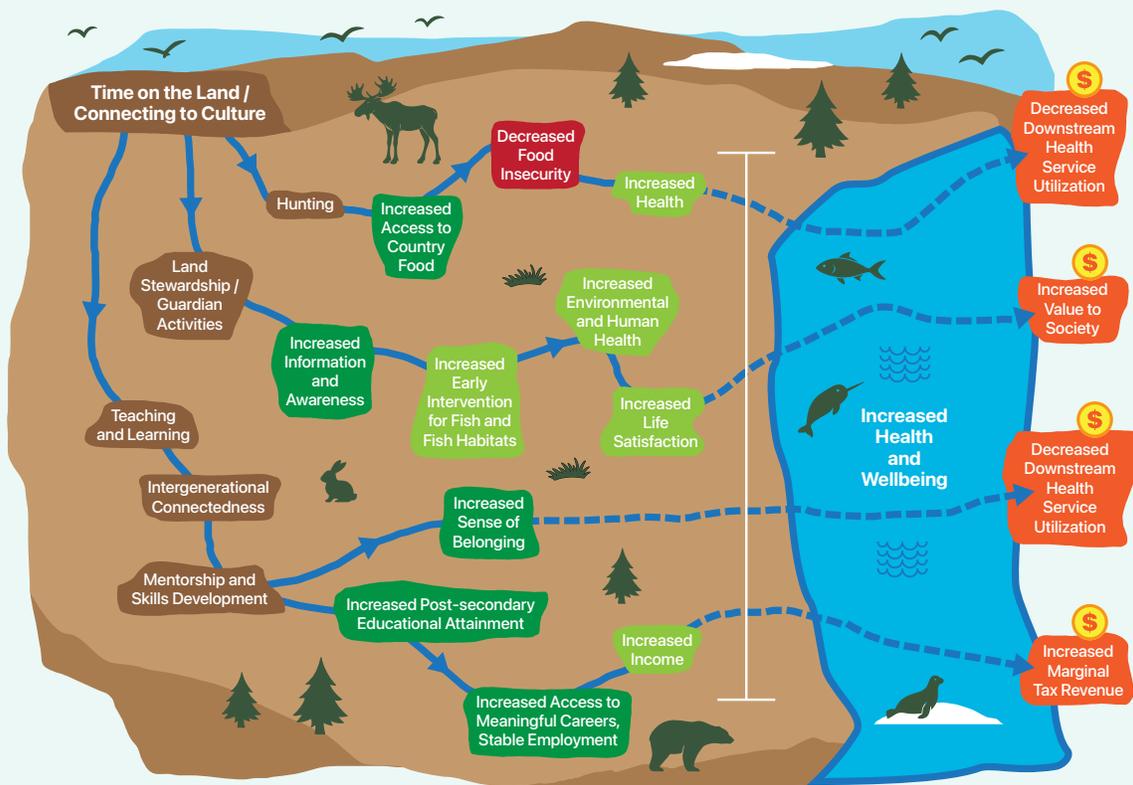
For the NPV calculations, we used outcomes experienced by staff, students/participants, and communities, and converted these into a dollar value by connecting program outcomes with broader, long-term population outcomes found in the peer-reviewed literature³. Table 1 (on previous page) provides an overview of the outcomes experienced/observed by programs, and their pathways to economic calculation of related costs and benefits.⁴

Social Cost-Benefit Analysis (SCBA):

An evaluation method that compares the total expected social, economic, and environmental benefits of a program or project against its total costs to assess overall net value to society.

Net-Present-Value (NPV):

A financial measure that calculates the current value of future benefits and costs by discounting them over time, showing whether the overall investment yields a net gain or loss.



* We do not provide an in-depth description of methods here. Please contact Christina Hackett for further information about each stage of the process: christina@coevaluationlab.com

Findings

Program Return on Investment (ROIs)

Each program generated their own data and findings. These findings represent a fraction of the activities and related benefits of each program. Table 2 presents the outcomes this report focuses on. These are outcomes as experienced by staff, participants, communities, and as observed and shared by the four programs.

Again, these findings highlight only a small portion of what each program actually does:

Outcomes Table 2: Outcomes from Hunter and Guardians programs included in this analysis

Program	Food Security/ Sovereignty 	Health and Wellbeing 	Ecological Conservation 	Indigenous-Centred Economic Development 
Dechinta	Increased access to country foods (community)	Increased life satisfaction (staff, students, Elders) Increased self-rated health (students, Elders)		Increased access to land-based education (students) Increased access to post-secondary education (students) Increased access to relevant training and skills (students)
Imaryuk		Increased life satisfaction (staff), having jobs on the land	Increased incidents tracked Increased incidents reported to key partners Early detection of disruption to fish/fish habitats Earlier appropriate intervention – decreased disruption to fish/fish habitat Increased longitudinal database Increased road safety information to public	Increased access to training and certifications (staff)
Ni Hat’Ni Dene	Increased access to country foods (community)	Increased life satisfaction (staff), having jobs on the land		
Angunasuktiit	Increased access to country foods (community)	Increased life satisfaction (staff), having jobs on the land Increased self-rated health (staff) Increased self-rated mental health (staff)		Increased access to land-based education (students) Increased access to relevant training and skills (students) Increased access to meaningful careers, land-based employment (staff)

Economic Analyses[®]

1. From the Community Perspective:



Food Security and Food Sovereignty

The Ni Hat'Ni Dene, Dechinta staff, and Angunasuktiit all tracked harvested foods and materials and have calculated the store-bought equivalents of harvested and hunted foods:

- **Ni Hat'Ni Dene: \$321,000** from January to October, 2023
- **Dechinta: \$199,000** from Spring 2021 to Fall 2023
- **Angunasuktiit: \$419,000** over three years, with an average of **\$139,667** per year (2022-23, 2023-24, 2024-25).

In one year, the protein hunted and provided by the Angunasuktiit program could fully feed six households of 5 people in Clyde River, Nunavut.

These programs increase access to the land and increase access to healthy country foods. They increase food sovereignty by providing the choice of country foods to families and people of all ages. These programs also ensure food security in other ways, for example, in Łutsël K'é, when the Ni Hat'Ni Dene's harvesting provided food when the supply chain was severely disrupted by the impact of wildfires in 2023. Angunasuktiit, a hunting instruction program, strengthens food security for the future through knowledge, skills, and language transfer and developing the next generations of hunters.

Overall, these three programs provided a yearly average of **\$614,000** worth of store-bought-equivalent meat.



2. From the Payer Perspective:



Food Security and Food Sovereignty

Angunasuktiit increases access to country foods in the community. This has real benefits for children, youth, adults, and Elders in terms of health and related health services utilization. Based on the number of households for whom the Angunasuktiit's harvested food influences threshold changes in food insecurity (for example, from severely to moderately food insecure, or from moderately to marginally food insecure), we estimate the resulting annual economic benefits to be:

- **\$122,000** in avoided child and youth mental health-related hospitalization/downstream service utilization; and
- **\$351,000** in avoided hospitalization/emergent health care use for adults in Clyde River.

This is likely an underestimation of the value as we do not include Medevac or emergency medical travel costs in these analyses.





Health and Wellbeing

Benefits that relate to improved health (all programs)

The Ni Hat'Ni Dene, Dechinta, and Angunasuktiit programs all explicitly provide culturally responsive, land-based learning opportunities for children, youth, and adults. Based on longitudinal data collected from Dechinta staff and students, as well as Angunasuktiit participants, the following economic benefits of learning on the land, and in Indigenous-led, culturally-centred environments are realized for each year of programming:

For Students and Participants (Dechinta)

- **\$78,000 in avoided health service utilization, including lifetime acute mental health care, and mental health-related hospitalization.**

For Elders (Dechinta)

- **Being on the land influences a reduction in social isolation, which results in a benefit of \$161,000 generated in avoided health system utilization through avoided hospitalizations and emergency department visits.**





Changes in wellbeing: Life satisfaction (all programs)

In addition to tangible changes in health system utilization and labour market outcomes, we explored how these programs address multiple levels of effects of colonization. These programs create space for Indigenous Peoples to be unapologetically Indigenous and contribute to personal, family, and community wellbeing in ways that are impossible to fully capture. Increasingly, countries are recognizing the importance of wellbeing (References 8-10) as a key input to shaping effective public policy⁵⁻⁷. Drawing on this movement and related literature, we worked with each program to explore changes in life satisfaction, as a proxy for wellbeing:

- For the Angunasuktiit, changes in life satisfaction resulting from working as a full-time hunter are valued at

\$4.8M over the hunters' lifetimes

- Changes in life satisfaction for students and Elders at Dechinta pre/post being at Dechinta are valued at

\$5.6M over the students' and Elders' lifetimes

- Across staff from all programs – Dechinta, Angunasuktiit, Ni Hat'Ni Dene, and Imaryuk Monitors – there were significant reported increases in life satisfaction compared to the period prior to working in an Indigenous-led program/context and currently working as Hunters, Guardians, and on-the-land educators (2.9 point increase).

The related increase in monetary value each year to society is \$676,000 across 18 staff/four programs².



Ecological Conservation (*Imaryuk*)

- The Imaryuk Monitors have gathered information that can be used in future economic analyses.
- The economic benefits identified as potential pathways to valuing the contributions of their work in monetary terms include:
 - Avoided downstream costs of interventions on road repair/infrastructure, such as sinkholes, washouts, and erosion
 - Avoided downstream costs of beaver and other invasive species' mitigation/control
 - Avoided downstream health costs resulting from pollutants/disruption of fish and fish habitats in Imaryuk
 - Avoided downstream costs of road safety incidents via information distribution/incident prevention
 - Value of data provided for free – used by governments and researchers
 - Cost of producing data/conducting research. Imaryuk provides training/knowledge to researchers and act as wildlife monitors which are typically required for researchers to hire (\$350/day)
 - Monitors are trained by research teams to collect data and samples for researchers, without researchers onsite (saves \$10-15k per trip, per person). Monitors inform researchers when they need to send someone to collect data (act as ongoing monitoring, reduce routine trips)
 - Prior work has estimated the economic return on investment for Guardians programs



The environmental knowledge, research, and monitoring that is inherently part of Hunters' and Guardians' roles have tremendous value (in myriad ways) and often goes unrecognized.





Indigenous-Centred Economic Development (Dechinta and Angunasuktiit)

Labour market outcome benefits for individuals (Dechinta and Angunasuktiit)

- For individual students who attended Dechinta, we estimate **\$3.5M** in generated lifetime marginal tax revenue; and
- For Angunasuktiit participants, we estimate **\$574,000** in generated lifetime marginal tax revenue resulting in having greater access to labour market opportunities within the community.
- For Angunasuktiit hunter-instructors, for each year of employment, we estimate **\$173,000** in generated lifetime marginal tax revenue compared with former employment and the median full-time-full-year salary in the community.

Labour market outcome benefits for communities and society (Dechinta)

- Not having access to post-secondary education has a negative effect on a country/province/territory's total economic output. For Dechinta, for each cohort of students, there is **\$4.4M** in avoided lost productivity (this lost productivity resulting in a lack of ability to access post-secondary education).

Programs' Return on Investment[®] (ROI)s

Focusing on two programs' holistic social cost-benefit analyses, we calculated net-present-value for Dechinta and Angunasuktiit, and found each program has a positive return-on-investment:

Net-Present-Value of Dechinta



After calculating benefits and costs, we found that for

every \$1 invested in Dechinta, there is a \$2.25 return

to Canadian society. When including life satisfaction effects, this

return increases to \$3.70

for \$1 invested.

Net-Present-Value of Angunasuktiit



After calculating benefits and costs, we found that for

every \$1 invested in Angunasuktiit, there is a \$1.43 return

to Canadian society. When including life satisfaction effects, this

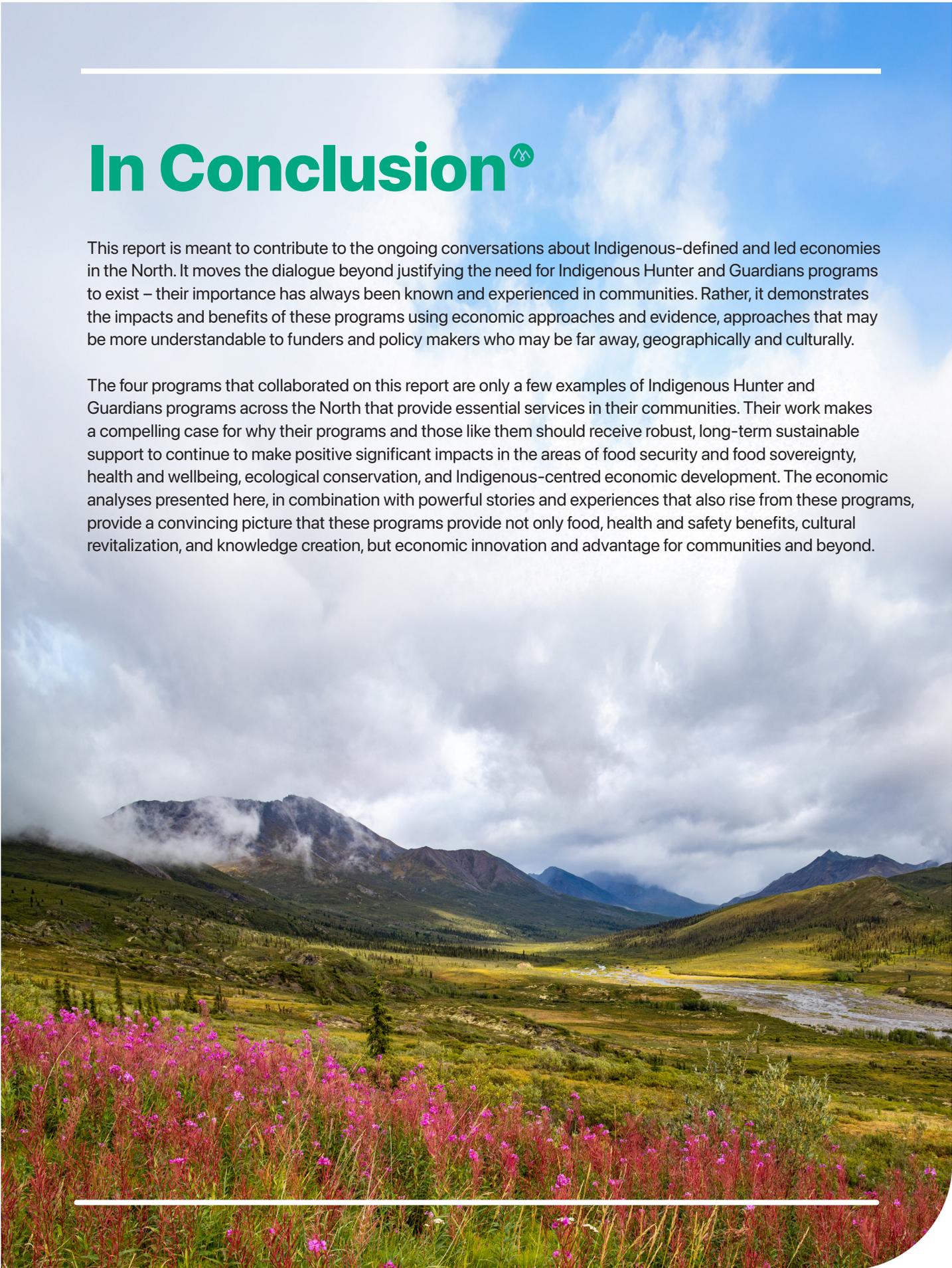
return increases to \$5.37

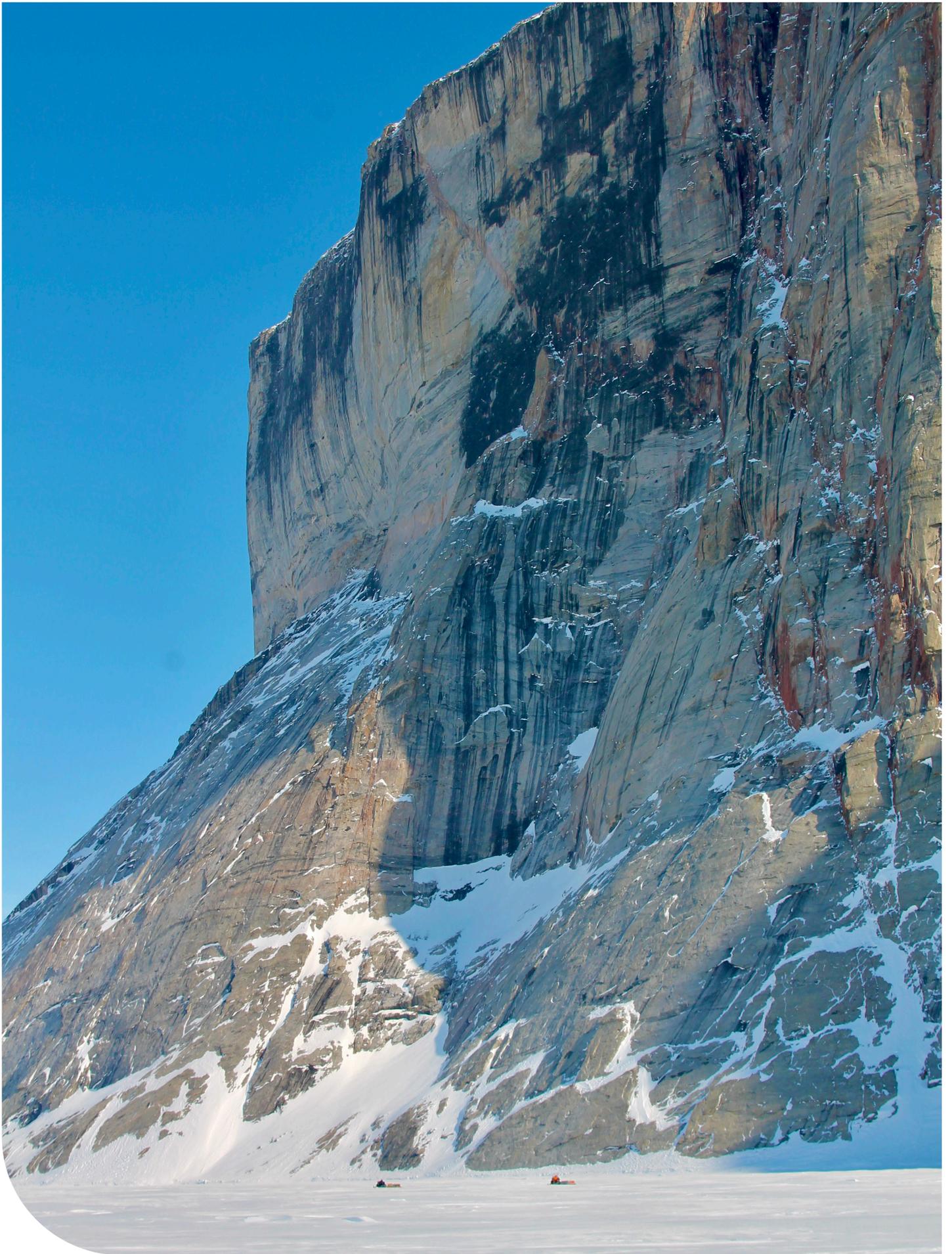
for \$1 invested.

In Conclusion[®]

This report is meant to contribute to the ongoing conversations about Indigenous-defined and led economies in the North. It moves the dialogue beyond justifying the need for Indigenous Hunter and Guardians programs to exist – their importance has always been known and experienced in communities. Rather, it demonstrates the impacts and benefits of these programs using economic approaches and evidence, approaches that may be more understandable to funders and policy makers who may be far away, geographically and culturally.

The four programs that collaborated on this report are only a few examples of Indigenous Hunter and Guardians programs across the North that provide essential services in their communities. Their work makes a compelling case for why their programs and those like them should receive robust, long-term sustainable support to continue to make positive significant impacts in the areas of food security and food sovereignty, health and wellbeing, ecological conservation, and Indigenous-centred economic development. The economic analyses presented here, in combination with powerful stories and experiences that also rise from these programs, provide a convincing picture that these programs provide not only food, health and safety benefits, cultural revitalization, and knowledge creation, but economic innovation and advantage for communities and beyond.





References

¹ See also <https://www.ilinationhood.ca/publications/report-sva-analysis-of-current-amp-future-value-of-indigenous-guardians-work-in-the-nwt> and <https://ipcaknowledgebasket.ca/social-return-on-investment-consolidated-report-on-indigenous-protected-areas/>

² SRDC et al. (2021), page 6: <https://makeway.org/wp-content/uploads/2021/08/Hunter-Harvester-Guardian-Evaluation-Toolkit.pdf>

³ We systematically searched and synthesized literature across several bodies of scholarship related to the current state (BAU) of Northern Indigenous Peoples' health and wellbeing, food security and food sovereignty (where available), Indigenous-centred economic development, and climate-related outcomes; as well as documented pathways to, and outcomes related to, responses to the impacts of colonization on these four outcome domains.

Please contact Christina Hackett for further information: christina@coevaluationlab.com

⁴ We pulled on publicly available data to explore current/recent population-level characteristics of each program's context. We sourced this from Territorial (e.g. Government of Nunavut, Government of the Northwest Territories) government websites; Statistics Canada (publicly available data tables, public-use microfiles); and systems' data for healthcare (e.g. Canadian Institute for Health Information), and education/employment (e.g. Labour Market Information Council, Statistics Canada).

Please contact Christina Hackett for further information: christina@coevaluationlab.com

⁵ Adler, A. & Seligman, M. E. P. (2016). Using wellbeing for public policy: Theory, measurement, and recommendations. *International Journal of Wellbeing*, 6(1), 1-35. <https://www.internationaljournalofwellbeing.org/index.php/ijow/article/view/429/533>

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¹⁰ Frijters, P., Krekel, C., Sanchis, R., & Santini, Z. I. (2024). The WELLBY: a new measure of social value and progress *Humanities and Social Science Communications*, 11(1), 736. <https://www.nature.com/articles/s41599-024-03229-5>

