Assessment of the Mary River Project:

Impacts and Benefits

By

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Assessment of the Mary River Project Inuit Impact and Benefit Agreement

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Executive Summary

This report examines the benefit regime at the Mary River Project in the context of an application to dramatically increase production and shipping in a region that has seen little previous industrial development. This assessment is a preliminary effort to quantify the relative merits of such an expansion. We conclude that Inuit, represented by Nunavut Tunngavik Inc. (NTI) and the regional Inuit association Qikiqtani Inuit Association (QIA), are not presently in a position to maximize benefits under Baffinland's Phase 2 expansion scheme. Inuit occupy a very small share of the jobs at this mine; rapid expansion of the workforce will in all likelihood further reduce the Inuit share. Alternative development options are proposed.

The Mary River Project is a large, open-pit mine situated mostly on Inuit-owned land and producing high-grade iron ore. The mine is operated by the Baffinland Iron Mines Corporation and has been in commercial production since 2015. As with all major developments in Nunavut, an Inuit Impact and Benefit Agreement (IIBA) was reached between the company and QIA. This process is prescribed under Article 26 of the Nunavut Agreement and is intended to provide Inuit an element of control over development activities in order to mitigate potential environmental damage and ensure that Inuit benefit from these projects. The original IIBA was reached in 2013; it has since been superseded by an Amended Agreement in 2018. The Mary River Project IIBA contains a range of provisions intended to support Inuit interests in terms of financial transfers (advance and royalty payments), employment, contracting/subcontracting, and training opportunities, as well as social and environmental initiatives. Two of the guiding Principles and Objectives of the IIBA itself are the *maximization of Inuit benefits* (see 2.2.3) and the *maximization of Inuit participation over time* (see 2.3). Baffinland is also required to make royalty payments to NTI (based on a grandfathered mineral claim that precedes the Nunavut Agreement). These royalties, at a maximum rate of 13% of net profit, have not yet accrued.

Baffinland's plans have changed several times since its initial feasibility study. Most recently, a production increase from 4.2 million tonnes per annum (MT/a) to 6 MT/a was approved by the ministers responsible for the project, overruling the Nunavut Impact Review Board (NIRB) recommendation to refuse such an expansion because of concerns related to negative eco-systemic and socio-economic effects. The review process for Phase 2 is now under way. This expansion would involve a production plan of 12 MT/a to be shipped out of Milne Inlet. The original project proposed the construction of a railway to Steensby Inlet on the west side of Baffin Island to accommodate transportation south via Hudson Strait for a production level of 18 MT/a. In theory, these outputs could be combined for a total of 30 MT/a.

This report provides an overview of the development and operations of the Mary River mine, including background with regards to planning and permitting processes, environmental concerns, and financial viability forecasts. The requirements of the IIBA are discussed at length, and company performance on individual measures are explored. Social context surrounding the importance of the potential financial benefits of Mary River Project to Inuit families is provided in a discussion of Northern poverty and development. Agreements between project owners and Indigenous groups at four other mines are examined. Some of the agreements pertaining to these projects impose strict consequences on operators who fail to meet specific commitments (e.g.

Indigenous employment targets). These examples may speak to the efficacy of mechanisms incentivizing compliance with targets. Baffinland is underperforming in several key respects. Notably, Baffinland has Indigenous employment numbers well below those of comparator mines (notably, Voisey's Bay at 50% and Angico Eagle's Nunavut mines at 29% of total hours worked), and has the lowest Indigenous employment targets of any of the Canadian operators. Baffinland has failed to meet its commitments surrounding Inuit employment targets by almost half, and is only performing marginally better with contracting targets. Furthermore, for several years these had been trending downwards. Inuit employees have a turnover rate of 45%.

In a review, QIA concluded that "the IIBA has not been implemented in a manner that maximizes benefits to Inuit, Inuit Firms, and affected communities" (QIA, 2017, p. 1). An IIBA renegotiation resulted in an Amended Agreement signed in October 2018. Changes include the establishment of an overall Inuit employment target of 50%. However, Baffinland's own Labour Market Analysis acknowledges the limited Inuit labour force available to meet project needs. This is reflected in Baffinland's inability to hire and retain enough Inuit employees to meet the 25% Minimum Inuit Employment Goal (MIEG) of previous years. Presently, meeting even the 25% MIEG appears unachievable in the context of rapidly rising total employment. The 50% employment goal is at present an impossibility.

This demonstrates the weakness of relying on MIEGs in conditions of rapid output growth and the need to set targets realistically. It might also suggest that financial compensation mechanisms should accompany MIEGs.

If one assumes the ore prices going forward are as estimated and that wages remain at 2.0% of revenue in 2019 and (consistent with the logic of economies of scale) fall as a percentage as output expands, then even if the total Inuit wage bill were to double between 2017 and 2022, Inuit wages per tonne of output would fall from $2.60/tonne to only $1.40/tonne. Thus, as output expands, benefits per tonne fall. The real question, though, is whether there is scope to more or less double Inuit employment over the next five years. If not, the gap between the MIEG and actual Inuit employment will simply grow. If Inuit employment cannot grow that quickly, then Inuit leadership would be well served to advocate for slower increases in output and/or to resort to additional compensation approaches to account for the lost benefits associated with long-term underemployment in a non-renewable industry connected to an Inuit-owned resource.

Rapid mine expansion will mean that Inuit will forego even more benefits with regard to training, employment, and contracting opportunities over the lifespan of the project. These cumulative losses could be substantial. Assuming average Inuit wages remain around $60,000 per annum, if Inuit employment post-expansion reaches only 10% (a reasonable possibility given greater overall project labour requirements and an Inuit employment rate around 12.5% at the time of IIBA renegotiation), the lost wages associated with a 50% Inuit employment target would amount to over $1 billion. This does not account for lost indirect benefits of employment.

The present arrangement has not worked and will continue to not work in the optimal interests of Inuit, and driving change in this arena will require a new approach. One possibility is introducing a legal requirement for financial transfers as an alternative to employment growth.

Compensation could be calculated as the difference between the financial benefits received by Inuit had targets been met and the financial benefits actually received. Another option is to force labour target compliance by regulating expansion of output. Such an approach would see the approval of production increases only in the event that IIBA targets are met. As increasing output increases the overall project profitability for Baffinland, this restriction is likely to be taken seriously. To pursue this, QIA would need both the support of NIRB and the backing of the federal government.

The proposed expansion plans will cause increased environmental damage and disruption to traditional economic activities. With an appropriate balance of benefits to compensate Inuit for their losses, there may be circumstances under which this could be considered a reasonable trade-off. However, at present it is apparent Inuit are positioned to benefit neither to the extent they have been promised nor proportionately to the harm they may incur. While the financial compensation approach could theoretically account for the lost employment and contracting opportunities, this particular solution does nothing to indemnify the Inuit for the environmental costs of increased mining activity. Already at present volumes of production there is great uncertainty relating to environmental impacts. With more time may come greater understanding of the environmental trade-offs Inuit may be facing.

Phase 2 as proposed will not result in a proportionate increase in benefits to Inuit and will lead to the mine closure in 2035, too soon for Inuit to fully benefit from their ownership of this resource. Baffinland can be expected to continue to push for the rapid expansion of its operations. It falls to the resource owners and regulators to strike a reasonable balance between the profit expectations of industry and the need to maximize socio-economic benefits and minimize socio-economic and environmental harm for the impacted region.

A. Looking Backwards

1. Background to the Mary River Project

The Mary River Project is a large open-pit iron mine on Baffin Island, Nunavut, 500 kilometres north of the Arctic Circle. It is operated by the Baffinland Iron Mines Corporation, which is owned by ArcelorMittal and Iron Ore Holdings.[2] It has been in operation since 2015 and mines high-grade ore that requires no processing.[3] The company has 11 deposits and is currently working on Deposit No. 1 (ArcelorMittal, 2017, p. 277). Baffinland's mineral tenures extend over 233,000 hectares (577,000 acres) and its reserves are estimated at 399 million tonnes (MT) (ArcelorMittal, 2017, p. 287). Baffinland is required to lease surface rights from the Qikiqtani Inuit Association (QIA), an Inuit organization established under the Nunavut Land Claims Agreement (NLCA), since it operates on lands which are predominantly owned by Inuit (ArcelorMittal, 2017, p. 277). Furthermore, Baffinland is required to gain access to subsurface rights. Subsurface rights for the project include a mix of Inuit-owned land and Crown land. Agreements for Inuit-owned lands are obtained through negotiation with Nunavut Tunngavik Incorporated (NTI). Deposit No. 1 is located on a parcel of Inuit-owned land, and therefore royalties paid from the development of this deposit will accrue to NTI.

The original development plan for Baffinland envisaged production of 18 million tonnes per annum (MT/a) and the construction of a 150-kilometre railroad to convey the ore to Steensby Inlet, a new port on the south shore of the island (Baffinland, 2018a). The initial 2008 feasibility study pegged the total cost of the project at C$4.1 billion, with the mine costing C$23 million, the railway C$1.2b, the Steensby port C$0.7b and indirect costs and contingencies C$1.5b (Buckley, 2015, p. 22). The 2008–09 financial crisis made raising the funds very difficult.

In 2013 plans were changed and the Nunavut Impact Review Board (NIRB, 2014, p. 21) was asked to approve an Early Revenue Phase Proposal, for a phased-in approach with output being initially 3.5 (later 4.2) MT/a, shipped by trucks on a tote road to Milne Port. This plan was approved in 2014. Output is stockpiled and shipped out during the open water season, which is a window of only 70–90 days. The total investment would be scaled back to C$740m (Buckley, 2015, p. 23).

In 2015 the company put forward a new plan for Phase 2, raising annual output from 4.2 to 12 MT/a. Initially, the proposal was to transport the ore by road, increasing the number of trucks from 22 to 75, but in February 2016, this was changed to a proposal to build a 110-kilometre rail

[2] In 2010 ArcelorMittal acquired a 70% holding of Baffinland while Nunavut Iron Ore Inc. (NIO) held 30%. ArcelorMittal then sold a 20% interest to NIO at the end of 2012 to deal with high debt and low world iron prices. This resulted in a 50–50% joint venture in which the companies shared development costs but with ArcelorMittal retaining marketing rights and being the principal operator (See Buckley, 2015, p. 18). In 2017, however, ArcelorMittal "lost joint control but maintained significant influence over Baffinland" when its share of ownership fell to 31.07% after capital calls were "exclusively fulfilled by NIO" and when NIO preference shares were converted to equity (ArcelorMittal, 2017, p. 107).

[3] The benchmark for Fe content of iron ore is 62%; Baffinland's content is an unusually high 65.6% (Buckley, 2015, p. 19).

line alongside the road to Milne Port, with five or six trains running each day at speeds of 60–75 kilometres an hour (Skura, 2016a; Bell, 2018). Ore would also now be shipped over 10 months of the year by breaking up sea ice between November and March, but by December 2016, this proposal had been dropped, replaced by one to operate much larger ships during the open season (Gregoire, 2016). As well, by early 2018, the plan to build the railroad to Milne Port was called into question after protests from Inuit (Bell, 2018; LeTourneau, 2018). Phase 2, in any form, has not yet been approved.

As the Phase 2 Development Proposal was being considered, on November 8, 2017, Baffinland submitted a "Tote Road, Camp, and Fuel Upgrade" proposal to the NIRB for approval (NIRB, 2018b). The Production Increase Proposal requested three main modifications to the approved Mary River Iron Mine Project:

- The building of a new 380-person accommodations camp at Milne Port, designed to reduce labour turnover;
- The addition of a 15-million litre diesel fuel tank at Milne Port to enable project expansion; and
- An increase in production from the limit of 4.2 MT/a to 6 MT/a to be transported by truck on the Milne Inlet Tote Road from the Mary River mine site to Milne Port and subsequently shipped out of Milne Port during the open water season.

On November 17, 2017, the NIRB directed Baffinland to modify and resubmit its proposal to demonstrate that the proposed activities were independent of and not integrally linked to the Phase 2 Development Proposal.

The proposal was then subjected to thorough review by the NIRB, which included community consultations. A number of concerns were raised about the eco-systemic and socio-economic effects of the expansion of output and about the mitigation measures Baffinland is both currently implementing and proposing. The NIRB concluded that its monitoring of the approved project revealed several significant gaps that had not yet been addressed by Baffinland, leading to uncertainty in understanding how the project is currently affecting the environment (NIRB, 2018a, p. 26). The proposed expansion raised further questions about the environmental impacts of road and marine transport beyond those considered in the original proposal and the associated Early Revenue Phase Proposal (NIRB, 2018a, p. 27). The NIRB felt Baffinland had not adequately addressed these questions. With respect to socio-economic considerations, Pond Inlet argued that while it sustained most of the environmental damage and upheaval of its traditional economic activities, it saw little of the promised increases in employment and income from the Mary River Project (NIRB, 2018a, p. 25).

While agreeing to allow the expansion of the camp and the increased diesel oil storage, the NIRB refused to allow Baffinland to proceed with the expansion of output "on the basis that this aspect of the Proposal poses the potential for significant adverse eco-systemic and socio-economic effects that cannot be adequately mitigated" (NIRB, 2018a, p. 31). At the same time, it concluded that Baffinland "has not established that the existing hauling and shipping limits are

affecting the economic viability of the Mary River Project" and "the Proponent has not met the onus of establishing the socio-economic need for the proposed increase to hauling and shipping as presented in the Production Increase Proposal" (NIRB, 2018a, p. 31). However, the NIRB was at pains to point out that this conclusion "in no way predetermines or otherwise limits the outcome of the Board's future assessment and decision-making associated with the Phase 2 Development Project Proposal, which will be considered subsequently" (NIRB, 2018a, p. 31).

In September 2018, the federal ministers responsible for the project overruled the NIRB. They approved a time-limited increase in production and shipping of ore through Milne Inlet of up to 6 MT/a to December 31, 2019. This decision was made under pressure from QIA, which had achieved concessions from Baffinland through a Project Stabilization Approach (dealt with in section 10) in return for allowing the increase to proceed. QIA was concerned that restricting output to 4.2 MT/a would not allow the mine to operate year-round, ultimately destabilizing output, employment and income flows. The premier of Nunavut also supported the production increase for the same reasons (LeBlanc and Bennett, 2018).

The result is that Baffinland will now increase production to 6 MT/a for 2019–2020 Increasing mine production beyond this scale will require approval for construction and operation of Phase 2. Under Phase 2, production would increase to 12 MT/a with a rail line to Milne Port at a capital cost of $1b (Baffinland, 2018b, p. 34). This output level would be maintained in 2021–2023, and seems to be the company's preferred strategy, at least in 2018. With the construction and operation of the original project proposal's railway to Steensby, production would increase by a further 18 MT/a. In theory, these total outputs could be combined to allow Baffinland to produce and ship 30 MT/a of ore in the years 2025–2035 (Impact Economics, 2018, p. 1).

2. The Price of Iron Ore and Changing Output Goals

In 2010 the world price of iron ore reached over US$180/tonne for 63.5% grade ore (Chart 1). The price for Baffinland ore would likely have been higher, perhaps by 8–12.5%.[4]

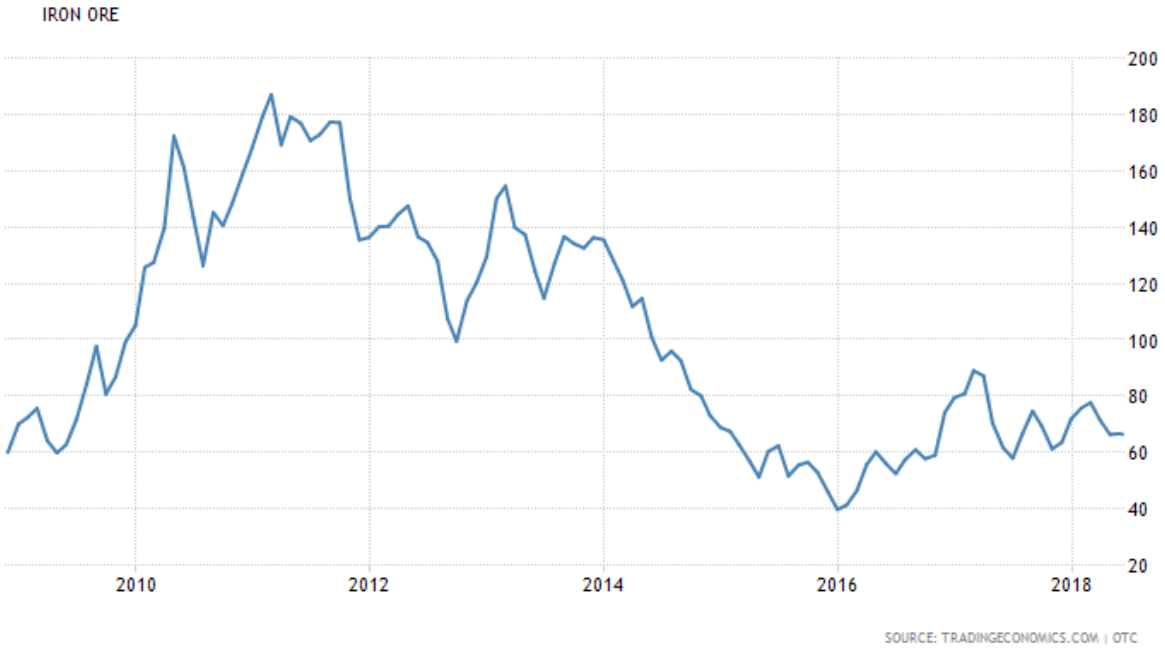
From 2011 to 2016, the world price declined by around 70% to about US$40/tonne, which had a profound impact on the profitability of the Baffinland mine and the ability of the company to raise capital. This explains the reduced targets for output in 2013–2014.

From 2016, however, prices have recovered somewhat to US$67/tonne – hence the renewed interest in Baffinland expansion. It is to be noted that the initial feasibility study in 2008 assumed a world price of C$67/tonne (Buckley, 2015, p. 22). The current world price in Canadian dollars is well above that, at around C$87/tonne . In the case of Baffinland ore, the quality premium could let it command prices of C$94–98/tonne . It is these rising prices that have put output expansion back on the agenda.

[4] Buckley argues that Baffinland iron ore would likely sell at a 10–15% premium against ore with a 62% Fe content (Buckley, 2015, p. 13). Since prices in Chart 1 assume an Fe content of 63.5%, the premium would be less and is calculated proportionate to the percentage increase in Baffinland ore over the world price.

Chart 1. Iron Ore World Prices, 2010–2018

$US/tonne 63.5% grade



Source: https://tradingeconomics.com/commodity/iron-ore

3. Forecasts of the Financial Viability of the Mary River Project

Information on the financial viability of the Mary River Project is not readily available, but what little information we have and have been able to project suggests it is an extremely profitable project.

Our first source of information is the Definitive Feasibility Study (DFS) of February 2008, a summary of which can be found online (Fednav, 2008). This assumed an annual output of ore of 18 MT over a mine lifetime of 20 years. Capital costs were estimated at C$4.1b, and iron ore prices were forecast to be US$67/tonne for lump ore and US$55/tonne for fines, with production being 75% of the former and 25% of the latter. The exchange rate was forecast at US$0.85 to C$1.00 after the construction phase.

Operating costs were estimated at C$14.62/tonne. This excludes ocean freight costs estimated at US$26.32/tonne. These are assumed to be fully reimbursed by Baffinland's customers, being recovered through long-term off-take agreements through delivered ex ship (DES) sales contracts. The DFS assumed that "operational input costs do not escalate from this present time through to the end of the production period," an objectively bold and unrealistic assumption (Fednav, 2008). It also assumed that "any payments required under the terms of the future Inuit Impact and Benefits Agreement do not exceed the allowance for such currently included in the operating costs" (Fednav, 2008). However, since details of the DFS evaluation are not available it is not known what that allowance is. In the absence of the background calculations it is also impossible to see what forecasts of employment or wage bills were incorporated.

The pre-tax internal rate of return (IRR) was projected to be very large, at 20.5%, with a very short payback period of only 3.7 years. The after-tax IRR was forecast to be 15.9% and the payback period only 4.3 years. It was forecast that the project would yield pre-tax cash flow over the life of the mine of $18.1b, with the after-tax cash flow being $11.2b. These are very large returns on relatively conservative price estimates, as the average iron ore price rose to over US$180/tonne in 2011 and, despite a subsequent fall in prices, averaged US$111/tonne between 2013 and 2018.

The DFS also made reference to Aker Kvaerner, who managed the evaluation, "completing a strategic, or 'blue sky' study describing an expansion to 30 million tonnes per annum, incorporating Deposits No. 2 and No. 3 in the Q2 2008" (Fednav, 2008). We do not have access to this document, if it was ever completed.

Our second source of information on the financial viability of the Mary River Project is the 2011 evaluation of the tote road for trucking iron ore (Baffinland, 2011). This report does include the details of the analysis. It assumes a much lower level of production than the DFS, 3 MT/a. versus 18 MT/a, again over 20 years. Capital costs are, accordingly, much lower at $750m. Iron ore prices were forecast to be US$120/tonne for lump ore and US$94/tonne for fines, with an average price of US$113.5/tonne. These are much higher than the ones forecast in the DFS given the rapid increase in world prices between 2008 and 2011. The exchange rate was forecast at US$0.93 to C$1.00.

Average operating costs were forecast at C$28.93/tonne, almost double the forecast in the DFS due, no doubt, to the higher expense of road transport over rail, the loss of economies of scale, and three years of cost escalation.

On balance, the higher prices offset the higher operating expenses, relative to the DFS forecast. As a result, as Table A shows, the profitability rose considerably, with a pre-tax IRR of over 34%, a post-tax IRR of over 30%, and a very low payback period of 2.6 years.

Table A. Summary of Cash Flow

Cumulative Net Cash Flow	After Tax	Pre-Tax
Undiscounted (from 2010 to 2025) C$ '000	3,070,181	4,141,268
Net Present Value (excluding 2010)		
Discounted at 4%	1,748,613	2,366,663
Discounted at 6%	1,337,661	1,817,102
Discounted at 8%	1,029,815	1,406,533
Discounted at 10%	795,951	1,095,512
Discounted at 12%	615,950	856,814
Discounted at 20%	206,774	317,473
Internal Rate of Return	30.6%	34.4%
Payback Period (years)	2.6	2.6

Source: Baffinland, 2011.

This forecast shows that the Mary River Project was expected to be hugely profitable, even at an output of 3.0 MT/a.

With the benefit of hindsight, however, some of the assumptions used in the tote road financial analysis have proven incorrect. The main one is, as we have seen, that iron ore prices fell sharply after 2012, so that from 2016 onwards, the average price is expected to be in the US$60–70 range rather than around the US$113 forecast. On the other hand, the Canadian dollar has significantly weakened since 2011, initially by around 40% and currently by about 20% relative to the 2011 forecast. This helps offset some of the iron ore price fall in US dollars.

The third forecast is one we have made based on the 2011 tote road evaluation but amended for the changes in iron ore prices and the Canadian dollar. The changed assumptions are found in Table B, which determines the revised average price of iron ore in Canadian dollars.

Table B. Iron Ore Price Forecast to 2031

	2013	2014	2015	2016	2017	2018	2019	2020–2031
Iron Ore at 62% Fe	136.58	97.34	55.82	58.61	71.77	67	60	60
Add 12% for 63.5% Fe	154	110	63	66	81	75	68	68
Canada–US Exchange Rate	1.071	1.149	1.329	1.379	1.35	1.22	1.20	1.19
Iron Ore at 63.5% Fe in C$	165	126	83	91	109	92	81	80

Applying these revised prices to the 2011 analysis yields the results in Table C.

Table C. Cash Flow Estimate Based on Price Forecast

Recalculated Cumulative Net Cash Flow	Summary of Cash Flow	
	After Tax	Pre-Tax
Undiscounted (from 2010 to 2025) C$ '000	854,834	1,091,503
Net Present Value (excluding 2010)		
Discounted at 4%	483,384	632,662
Discounted at 6%	356,581	476,336
Discounted at 8%	257,073	353,749
Discounted at 10%	178,800	257,319
Discounted at 12%	98,147	156,184
Discounted at 20%	−26,690	3,395
Internal Rate of Return	<20%	c20%
Payback period (years)	14	10

These figures demonstrate that making the adjustments reduces the profitability of the Mary River Project, although the IRR still remains around 20% both pre- and post-tax. This is fairly close to what the DFS projected pre-tax, and better than that projected post-tax. The cash flow for the whole project is also very positive in the long term, but is quite negative in the early

years, so that the payback period subsequently rises to between 10 and 14 years. The revised forecast shows that positive pre-tax cash flows start only in 2017.

There are, however, two problems with this forecast. First, there appears to be no provision for increases in operating costs due to inflation, which was a weakness in the 2011 numbers on which it is based. Second, unlike the 2011 study, there is no provision for any payments to QIA under any Inuit benefit agreements. Taken together, these might significantly reduce both returns and cash flow from the project.

Adjusting operating costs for inflation reduces the lifetime undiscounted pre-tax earnings of the project over 20 years by C$487b, and those between 2010 and 2025 by C$170b (compare Table C with Table D).[5] The IRR is reduced but still approximates 19%, very close to that of the DFS, but the payback period is extended to 13 years.

We do not have details of any likely royalty payments to rights holders over the life of this particular project, but these would have to be deducted from the above cash flow.

Table D. Summary of Cash Flow

	Pre-Tax
Cumulative Net Cash Flow	
Undiscounted (from 2010 to 2025) C$ ’000	920,995
Net Present Value (excluding 2010)	
Discounted at 12%	156,184
Discounted at 15%	61,767
Discounted at 18%	12,885
Discounted at 20%	−17,184
Internal Rate of Return	c19%
Payback Period (years)	13

The company aims ultimately to produce 30 MT/a, taking the position that this level of output is needed to be internationally competitive (Baffinland, 2018b). To reach that goal, its preferred strategy is to implement Phase 2, building a northern rail line to Milne Port and raising output to 12 MT/a. Building the rail line south to Steensby is considered too expensive at this time but is slated to commence in 2021 (Baffinland, 2018b). We can assume that financial returns to Phase 2 levels of output will be much higher than those for the tote road calculations above.

[5] We have not attempted to estimate post-tax earnings in this scenario.

4. Inuit, the Environment and the Mary River Project

The environmental impact of the Mary River Project has always been a sensitive issue to regional Inuit and their representatives but ultimately, the final decision-making power on environmental impact assessment is vested in Ottawa (Dylan, 2017, p. 223).

The original 18 MT/a proposal with its controversial 150-km railroad and year-round shipping from a new port at Steensby Inlet, using 10 ice-breaking cargo vessels (Buckley, 2015, p. 21), was heavily criticized by a technical review undertaken for Fisheries and Oceans Canada (2011). The environmental impact statement by Baffinland was found inadequate to support its conclusions with regard to the impact on the marine environment, marine mammals, and other marine organisms. While "the proposed year-round shipping through Foxe Basin and Hudson Strait is unprecedented . . . Vessel traffic and icebreaking, oil spills, ballast water, wave action, sediment redistribution, shipping and aircraft noise are not adequately assessed in the report" (Fisheries and Oceans Canada, 2011, p. 2). Nonetheless, the proposal did eventually receive environment approval in 2012. It was, however, abandoned shortly thereafter (Buckley, 2015, p. 23), and amendments to the initial approval were sought.

These proposed amendments were substantial, including the export of iron ore seasonally from Milne Port instead of year-round from Steensby. This was approved. A second, major, proposed amendment to the project was year-round shipping from Milne Inlet using ice-breakers in Baffin Bay and Davis Strait during the winter. The Nunavut Planning Commission (NPC; see Appendix 1) issued a negative conformity determination on the grounds that year-round shipping would be harmful to wildlife (Dylan, 2017, p. 216). Baffinland then applied for a ministerial exemption from the North Baffin Regional Land Use Plan (NBRLUP; see Appendix 1). This was opposed by both the QIA and the NTI but was supported by the premier of Nunavut, Peter Taptuna, who argued, "I gotta ensure the best interests of Nunavummiut . . . I am the Premier, indicating that our mandate is economic development and employment" (Dylan, 2017, p. 222). It is to be noted that there is no provision in the environmental assessment regime for such an intervention by a premier.

The Minister of Indian Affairs granted the land use plan exemption to Baffinland in 2015, requiring the company to submit a revised impact assessment statement to NIRB in September 2016. In community surveys conducted in September 2016, concerns were raised about the potential effects of the mine upon terrestrial and marine wildlife and wildlife habitat, and on harvesting activities (Baffinland, 2016, p. 6). In November of that year, Baffinland informed the NIRB that it would not be pursuing its year-round shipping proposal (Dylan, 2017, p. 224). However, in December 2016, "the NIRB nevertheless sent the remainder of the proposal to NPC for a new conformity screening, thus beginning the whole impacts assessment process anew. In other words, the Baffinland proposal is back at square-one, seeking a conformity determination from NPC" (Dylan, 2017, p. 224).

Phase 2 of the Mary River Project continues to face environment concerns and still requires an amendment to the NBRLUP. Earlier this year, the Nunavut Planning Commission (NPC) released a report on proposed amendments alongside a number of recommendations to the Government of Canada, the Government of Nunavut, and NTI, which would need to approve any

amendments (QIA, 2018a). This report recommended that references to ice-breaking be taken out of the NBRLUP and that the existing single transportation corridor be used "only for roads, railroads and open water shipping"; no consideration was given to alternative routes (QIA, 2018a). Building the railroad to Milne Port would require further approval from the NPC and, given the possible impact on hunters, the NIRB would also need to give its approval.

The NPC noted the existing agreement between QIA, the Government of Canada, and Baffinland on caribou protection, which prohibits construction and operations in sensitive caribou calving grounds during calving season, and stated that any further protection measures would require a separate application to amend the NBRLUP. QIA is studying this issue. The QIA stresses that an environmental assessment by the NIRB is required prior to the Phase 2 Project being approved, and that process has yet to start (QIA, 2018a).

5. The Inuit Impact and Benefit Agreement

Under Article 26 of the 1993 Nunavut Land Claims Agreement (NLCA, 1993), all major development projects must be accompanied by an Inuit Impact and Benefit Agreement (IIBA) to assess likely benefits and possible negative effects on Inuit communities.[6] IIBAs are intended to allow Inuit an additional measure of control over development upon land for which they hold surface title. In essence, IIBAs allow Inuit to direct a component of the development, thus serving to "mitigate potential damages to the land while also ensuring economic benefits" (Coppes, 2018). Furthermore, the premise of an IIBA is to advance the interests of both parties whereby if Inuit receive a suite of benefits then companies will also mutually benefit "by being able to rely on efficient, high quality Inuit firms, a well-trained local work force, project support and stability" (QIA, 2013, 2.1.1). After being negotiated and agreed upon between Inuit and the developer, the IIBA must be approved by the minister of Aboriginal Affairs and Northern Development. The IIBA for the Mary River Project was signed between Baffinland and the QIA on September 6, 2013. The IIBA covers Inuit of Arctic Bay, Clyde River, Hall Beach, Igloolik, and Pond Inlet (collectively referred to as North Baffin) and all other Baffin Inuit that are represented by the QIA and other NLCA beneficiaries (Baffinland, 2018c).

The IIBA is designed to maximize Inuit benefits from financial participation, ownership, subcontracting, management, employment, education, and training (QIA, 2013, 2.3) and lays out detailed provisions for accomplishing this. It is overseen by a senior executive committee and a management committee, both of which contain representatives of the Inuit and the company (QIA, 2013, 2.5). It also provides for the hiring of an IIBA coordinator and an Inuit employment and training coordinator by each of the company and the QIA (QIA, 2013, 4.10.5f). The IIBA

[6] Article 26.1.1 of the Agreement states that "'Major Development Project' means any Crown corporation or private sector project that (a) is a water power generation or water exploitation project in the Nunavut Settlement Area, or (b) is a project involving development or exploitation, but not exploration, of resources wholly or partly under Inuit Owned Lands, and either entails, within the Nunavut Settlement Area during any five-year period, more than 200 person years of employment, or entails capital costs in excess of thirty-five million dollars ($35,000,000), in constant 1986 dollars."

contains a dispute resolution process which would involve mediation and ultimately, binding arbitration if disputes cannot be settled internally (QIA, 2013, 2.7).

In terms of financial participation, the IIBA provides for a combination of advance payments by the company to QIA and ongoing royalties. The advance payments consist of an initial payment of $5m, a further $5m on receipt of a water license, another $10m after the date of the construction decision and $1.25m each quarter, adjusted annually for inflation, one year after the construction decision until commercial production begins, to a maximum of $75m (QIA, 2013, 5.2, 5.4). Commercial production is defined quite specifically as when "the phase of normalized operations . . . has continued continuously for 90 days at not less than 60% of the Project's intended capacity" (QIA, 2013, 5.16.d). Thereafter, royalties would be paid at a rate of 1.19% of net sales revenue or sales revenue minus production taxes and shipping and related costs (QIA, 2013, 5.16.n). Advance payments would be gradually deducted from these royalties.

The IIBA seeks also to maximize the benefits Inuit receive from contracting and subcontracting opportunities, subject to the company receiving services in "a timely, efficient and competitive manner" (QI, 2013, 6.1). The company would encourage Inuit businesses in a variety of ways, including breaking down large contracts into ones manageable by small Inuit businesses, and helping to establish a Business Capacity and Start-Up Fund by providing $0.25m annually until commercial production commences. The company would also fund 50% of the cost of a position to administer the fund for the first three years of its existence. Further contributions to both the fund and the administrator's position would be determined in the annual budget. A registry of Inuit businesses would be maintained and actively drawn upon to encourage Inuit participation in contracts. Participation could be through negotiated contracts, requests for proposals or invitational tenders. In each case, an Inuit Content Plan would need to be submitted and firms would be required to meet a Minimum Inuit Employment Goal (MIEG) and any other Inuit content targets set by the management committee. Under competitive tenders in excess of $500,000, each company bidding would have to outline the details of its Inuit content: ownership, employment, wage bill, and purchases from Inuit firms; participation by Inuit firms directly or as subcontractors; the training of Inuit and Inuit firms and the location of the firm's head office in the Baffin Region (QIA, 2013, 6.11). Points would be awarded for the performance of bidding firms in each of these areas of Inuit content and discounts would be given on bids accordingly, thereby rewarding companies with the highest Inuit content (QIA, 2013, Schedule 6.1).

In Article 7, the IIBA seeks to maximize Inuit employment through targeted recruitment, the use of experience equivalents to formal education and training, prior learning assessments, the development of job descriptions and the maintenance of active job listings. Jobs will be advertised in both English and Inuktitut. An Inuit Human Resources Strategy will be developed outlining workforce requirements and skills and qualifications required to meet them. This would examine barriers to Inuit entry, promotion and retention, including those faced by women, and the training and other requirements needed to overcome those barriers. A database of Inuit who are already trained and of those pursuing education and training would be maintained to facilitate recruitment. Orientation and cross-cultural training, counselling and employee assistance

programs will assist recruitment, retention and promotion of Inuit employees and help reduce absenteeism and labour turnover while advancing education and career development. Special attention will be paid in the Inuit Human Resources Strategy to increasing female employment, including the building of a welcoming workplace environment. Summer employment opportunities would be made available for Inuit students, both directly by the company and through its contractors.

Article 8 focuses on increasing Inuit education and training. An Education and Training Fund would be set up, funded by the company to the tune of $1m in each of the first two years, with contributions thereafter being built into the annual budget. Training would be provided by the company to meet future skilled and supervisory needs, but it is recognized that success would require the co-operation of governments, existing educational and training institutions, and local communities. As far as possible education and training would be linked to employment and advancement. Contractors and subcontractors would need to be aware of company policy as well as the requirement to develop their own training and education policies consistent with those of the company. As far as possible, instruction for the training for certain positions would be in Inuktitut.

Training in the Inuit Human Resources Strategy would cover pre-employment preparation, adult education initiatives and specific training for construction, operations, contract and subcontract activities, management and advanced skills. In addition, the company would support a range of education initiatives such as career fairs, counselling, and stay-in-school programs.

Other provisions of the IIBA provide for social supports to address issues that might arise from the mine, with a fund – IIagiiktunut Nunalinnulu Pivalliajutisait Kiinaujat – being set up for this purpose. This is financed jointly by QIA and the company and administered by QIA (Article 12). Provision is made also for environmental monitoring and stewardship (Articles 14 and 15) and for wildlife conservation and compensation (Article 17).

The IIBA contains, therefore, a range of concrete proposals to advance the well-being of Inuit and their communities in terms of financial payments, participation in contracting and subcontracting, employment and training. It also covers a wide range of other topics, including social and environmental issues. The IIBA assumed that most efforts would need to be made in the first two to three years of the project, with some initiatives being specifically limited to this time period.

6. The Benefits Received by Inuit from Baffinland

The legal rights of Inuit as described in the Nunavut Agreement create requirements for developers to satisfy a broad set of obligations, many of which confer economic benefits to Inuit. In the case of Mary River, the rights of Inuit which must be respected by Baffinland include the following: Inuit water rights (Article 20), entry and access to Inuit-owned lands (Article 21), and impact and benefit agreements (Article 26). These Inuit rights are managed by both NTI and QIA.

Through negotiations between QIA and Baffinland the parties have negotiated the following agreements: Water Compensation Agreement (2013), Commercial Production Lease (2013), and an Inuit Impact and Benefits Agreement (IIBA). In addition, NTI has negotiated a Mineral Exploration Agreement (2008) with Baffinland.[7] The IIBA is public and therefore lends itself to more detailed analysis, whereas the Water Compensation Agreement, Commercial Production Lease and Mineral Exploration Agreement are held by the parties.

The IIBA confers direct financial benefits upon Inuit in the following forms:

1. Monies to implement the IIBA (Article 4)
2. Monies for specific funds established under the IIBA:
    a. Education and Training Fund
    b. IIagiiktunut Nunalinnulu Pivalliajutisait Kiinaujat
    c. Business Capacity Fund
    d. Wildlife Compensation Fund
3. Royalties

Additionally, the IIBA provides the basis for improving the ability of Inuit to capture additional economic benefits in the form of employment, training and contracting. These additional benefit areas are achieved through direct participation in the project construction and operations. In other words, employment, training and contracting represent opportunities to increase the net benefits to Inuit from the Mary River Project.

Taking a general view of the other agreements that exist between Inuit and Baffinland, it is assumed that additional financial benefits include payments for rent, water use, and the use of sand and gravel.

The royalty structure for Deposit No. 1 relies upon a grandfathered mineral claim (i.e. in existence prior to the signing of the Nunavut Agreement). While the mineral rights for Deposit No. 1 are Inuit owned, the rate and structure of the agreement is based upon a historical agreement with the Crown. Under the Nunavut Agreement the Crown is required to flow royalties received from Deposit No. 1 to NTI. The royalty rate for Deposit No. 1 is therefore defined according to Canadian mining regulations which set a maximum royalty rate of 13% of all net profits.[8] In the absence of net profits being earned, these royalties have not accrued to the NTI. The expectation is, however, that total payments to Inuit organizations will amount to $1.9b over the life of Phase 2, with $1.4b taking the form of federal mineral royalties (FMR), and $0.4b in mineral royalties to QIA under the IIBA (Baffinland, 2018d, pp. 143–144). The problem with the federal mineral royalties is that they are back-end loaded and not expected to accrue until 2030. Fully 86% of the anticipated $1.4b would flow between 2030 and 2037! And even then there is great uncertainty surrounding this forecast (Baffinland, 2018d, pp. 24–25).

[7] http://www.tunngavik.com/blog/news/nti-and-baffinland-sign-exploration-agreement/

[8] See page iii, http://mining.ca/sites/default/files/documents/ComparativeReviewoftheRateofRoyalty.pdf

7. The Minimum Inuit Employment Goals (MIEGs)

Under the IIBA, Inuit employment is managed through an approach called the "Minimum Inuit Employment Goals." This approach seeking to advance Inuit employment is found in other benefit agreements in Canada. The underlying premise is that the Indigenous group and the company will determine the appropriate level of Indigenous employment. This decision is based upon the configuration of the project and its labour demand together with information regarding the local labour supply.

Specific to Mary River, the IIBA calls for a Project MIEG, meaning all potential labour on the project for a given year shall be assessed. The Mary River IIBA also requires that all contracts entered into by the company meet a specific MIEG. An MIEG is expressed as a percentage of total employment, arrived at "by dividing the total number of Inuit projected to be employed, in total work-hours, by the total number of persons employed, in employee work-hours" (QIA, 2013, 7.14.2). An annual MIEG for the whole project is to be drawn up at the start of each year on the basis of all contracts, arrived at in the same way. A plan for achieving the MIEG, "the MIEG Plan," will be developed annually and quarterly reports will be made on progress.

For 2016, the MIEG was set at 25% both for Baffinland staff and for all new contracts awarded in that year (Skura, 2016b). This target was notably modest in comparison to the development goals established by the Government of Nunavut and NTI shortly after Nunavut was created. For example, the 2003 Nunavut Economic Development Strategy established a target of 50% of all expenditures on employment in the mining industry to accrue to Nunavut residents (of whom over 80% are Inuit) by 2013 (Sivummut Economic Development Strategy Group, 2003).

8. Failure to Meet MIEGs and Other Goals

Articles 7 and 20 provide for periodic reporting on progress made in implementing the IIBA, while Article 22 provides for a three-year review of all the major goals other than the financial ones. In its first three-year review in 2016, the QIA concluded that "the IIBA has not been implemented in a manner that maximizes benefits to Inuit, Inuit Firms and affected communities" (QIA, 2017, p. 1), with the result being that Inuit have lost significant benefits in terms of wages, firms' revenues and positive social outcomes foregone. Inuit employment by Baffinland had fallen steadily from 20.3% in 2014 to 16.7% by June 2016 (QIA, 2017, p. 4). Throughout 2016 Inuit employment fell to only 15.6% (Jason Prno Consulting Services Ltd, 2017, p. 19). By the end of April 2017, Inuit employment at Mary River had fallen to only 100 individuals, or to only 12.5% of the workforce (Bell, 2017). Although Inuit employment by contractors was higher, at 18.8% in 2016, 63 of 65 contracts entered into by the company between June 2015 and June 2016 had absolutely no Inuit employees (QIA, 2017, p. 4). The turnover of Inuit employees was high, at 45% (Jason Prno Consulting Services Ltd, 2017, p. iv) and was also higher than that of non-Inuit (31%).

While no targets were set for female Inuit employment, their number increased rapidly in 2013–14 by 125%, to 112,400 hours, or 6% of total hours of employment. By 2016, however, while total hours of employment at Mary River were virtually unchanged, both the number and proportion of women employed fell significantly, to 68,860 hours or only 3.7% of total employment (Jason Prno Consulting Services Ltd, 2017, p. 38). While barriers to female employment in mining are common across the world, access to and the cost of child care appear to be major contributory factors in the Baffinland situation (Jason Prno Consulting Services Ltd, 2017, p. 36).

The annual evaluations of the project provide no information on the levels and types of positions occupied by Inuit, nor on the breakdown between permanent and precarious employment. As will be shown later, the experience from the Meadowbank gold mine in Nunavut shows Inuit occupying mainly low- or unskilled and more precarious jobs. There is no reason to believe the situation at Baffinland will be any different, but QIA may want to insist that this type of data be produced in the annual evaluations.

Table E shows how the company viewed its training and employment record for 2017 while Table F shows QIA's views of that record. There is a clear difference of opinion on Inuit training, employment, and advancement in the mine. Crucial information is not available in Baffinland's 2016 and 2017 socio-economic reports, such as the use of the special training fund and details of Inuit promotion.

Table E. Outcomes in Inuit Employment According to Baffinland's 2017 Socio-Economic Report

Area	Outcomes	Post-Development Trend	Trend Since Previous Year
Education and Training	Inuit received 4,024 hours of training in 2017 and a total of 15,867 training hours since project development.	Increase	Increase
	Inuit continue to receive various forms of project-related training.	Increase	No change
	One Inuit apprentice worked at the project in 2017.	Increase	No change
	Among 2018 Inuit Employee Survey respondents, 54% had no certificate, diploma or degree, 32% had a high school diploma or equivalent, and 14% had higher than a high school diploma or equivalent. 3.1% suspended or discontinued their education because they were hired to work at the project.	–	–
Employment	An average of 1,572 individuals worked at the project in 2017, of which 219 were Inuit.	–	–
	Three Inuit employee promotions occurred in 2017 and 14 in 2016 (Baffinland, 2018d, p. 37).	Increase	Decrease
	There were 42 Inuit employee departures in 2017, equal to an Inuit employee turnover rate of 45%.	Increase	No change
	Female employees and contractors worked 162,550 hours in 2017 (6.8% of total), 85,988 hours of which were worked by Inuit females (3.6% of total).	Increase	Increase
Inuit Firms	Baffinland awarded $387.2m in contracts to Inuit-owned businesses and joint ventures in 2017; a total of $819.1m has been awarded to Inuit-owned businesses and joint ventures since project development.	Increase	Increase
	There were 44 NTI-registered Inuit firms in the North Baffin LSA and 109 in Iqaluit in 2017.	Increase (Increase)	Increase (Decrease)

Source: Jason Prno Consulting Services Ltd, 2017; Baffinland, 2016; NTI Skura, 2016b (for the information regarding registered Inuit firms).

Table F. Inuit Views Regarding Employment Outcomes at the Mary River Project

Source	Points of Discontent	Information from Baffinland's Report
CBC article, Skura, 2016b http://www.cbc.ca/news/canada/north/baffinland-qia-mary-river-review-1.3800652	Decreasing level of Inuit employment (measured in hours) since 2014	This outcome is not presented for Inuit in their report (only overall hours)
	Training provided to Inuit has been delivered as part of normal operations and cannot be attributed to the IIBA (almost none of the $2m guaranteed for Inuit education and training has been spent by Baffinland)	This outcome is not presented in their report (only number of hours devoted to training)
Qikiqtani Inuit Association 2016–2017 Annual Report http://qia.ca/wp-content/uploads/2017/10/2016-17-QIA-Annual-Report-92817-EN-FINAL.pdf and Qikiqtani Inuit Association 2018 Newsletter http://qia.ca/wp-content/uploads/2018/02/QIA_ENewsletter-Winter2018-ENG-optimized.pdf Notice that a new Inuit employment and training project was put in place in November 2017. It will be interesting to see the outcomes from this new project.	Need for more work on strategies to recruit and retain Inuit employees and assist Inuit in advancing into higher position	• No information on comparative promotions (only promotions for Inuit) • Available information for retention (turnover rate, which, in fact, is very high)
	Not meeting 25% employment goal for Inuit workers	Information is in Baffinland's report (and is consistent)

What is clear in the reports is the decline in spending on Inuit training in 2016, from 21% of the total spent on training in 2015 to only 8.7% (Jason Prno Consulting Services Ltd, 2017, p. 25). Furthermore, the number of Inuit apprentices shrank from four in 2016 to only one in 2016 (Jason Prno Consulting Services Ltd, 2017, p. 26).

The backdrop to these negative developments was that despite its importance in the IIBA, the Inuit Human Resources Strategy had not been developed by the end of 2016, and training targets had not been met. QIA argues that Baffinland has not met its obligations with respect to training, and virtually all training for Inuit "has been delivered as part of normal operations and cannot be attributable to the IIBA" (QIA, 2017, p. 3). As a reflection of this, little of the $2m set aside for training had been spent. In 2016, however, the company pledged to spend $1m per year on training in each of the next five years, in addition to the earlier commitment of $2m.

While progress was made by QIA in building up the institutional structure for increasing Inuit involvement in contracting, the company has again not met its obligations, especially in enforcing reporting on Inuit content. The result is the very poor Inuit employment record of contractors (QIA, 2017, p. 5). Purchasing from Inuit companies and their joint ventures also declined between 2013 and 2016, from $200m to $64.4m, which is a cause for concern (Jason

Prno Consulting Services Ltd, 2017, pp. 39–40). Still, Inuit purchasing in 2016 appeared to constitute 34% of total purchasing.

Satisfactory progress seems to have been made on social and environmental files, perhaps because these are essentially in the hands of the QIA (QIA, 2017, p. 6). QIA launched the Ilagiiktunut Fund in 2014, which makes available $750,000 a year for community wellness enhancement projects in the Qikiqtani Region. In that year it also initiated a Complaint and Grievance Management process for QIA to address any issues Inuit might have with the project as well as an annual forum for reviewing the project with communities and getting their feedback. QIA also developed the Wildlife Compensation Fund in 2016 to compensate for the impact of project activities on harvesting. Workplace Conditions Reviews have also been introduced to ensure that the employee engagement and organizational culture provisions of the IIBA are properly implemented.

QIA proposals to rectify identified deficiencies include the urgent development and implementation of the Inuit Human Resources Strategy and the Inuit Procurement and Contracting Strategy; a comprehensive three-year plan for the next phase of the IIBA complete with annual work plans; the development and promotion by the company of career paths; the creation of an Inuit Labour Pool to link employers with Inuit workers and develop training strategies; linking use of the Training Fund more directly to IIBA planning cycles; developing a community engagement strategy to ensure that Inuit voices are heard in implementing the IIBA and, finally, formally reviewing workplace conditions to improve Inuit experiences at the project (QIA, 2017, p. 7).

In November 2017, QIA and the company launched the Qikiqtani Skills and Training for Employment Partnership (Q-STEP), the objectives of which are to "increase Inuit employment at the Mary River Mine, develop and deliver training programs for unemployed Inuit (with a focus on women and youth), and provide Inuit with certified and transferable skills and qualifications to enable them to take advantage of other employment opportunities" (QIA, 2018b). In March 2018, it was announced that 14 Inuit from the Q-STEP program had joined the company as trades assistants, the first stage of the apprenticeship qualification. As employees of the company they will shadow skilled tradespeople for six months and then write their Trades Entrance Exam. If successful, they will become full-time apprentices.

In 2016, a dispute arose between QIA and Baffinland over the financial provisions of the IIBA. The QIA asserted that the company had ceased paying advance payments since the first quarter of 2015 and hence owed it $6.25m. The dispute concerned the definition of the date at which commercial production was reached (or the date at which advance royalty payments would cease), which, in turn, reflected a dispute about the definition of the project's intended capacity. According to the QIA this was 18 MT/a, as in the original proposal, but according to the company it was 3.5 MT/a, as granted in the "early revenue phase" of the project. Eventually, the dispute was settled by an arbitration panel, which ruled that the company owed QIA $6.9m in unpaid advance royalties, plus interest (Ducharme, 2017). Provisions in the IIBA for dispute resolution – though time-consuming and perhaps expensive – do appear to work.

QIA had issued a formal Notice of Non-Compliance to Baffinland for failing to achieve the 2017 MIEGs and for making insufficient progress under the $20m Q-STEP training program. As a result, Baffinland agreed to undertake a Project Stabilization Approach with QIA, in which Baffinland agreed to renegotiate the Mary River IIBA and to prioritize this work over pending regulatory applications. A community engagement process was also agreed upon, giving communities greater control over and awareness of planned engagement events. The company paid for materials used in the tote road and agreed upon a process to assess the use of material for the road in the future. Baffinland made significant advancements in Inuit training under the Skills Partnership Fund. Further, it committed to implement the Water Compensation Agreement and established dedicated working groups on the topics of dust, marine mammals, and shipping, and amended the Royalty Agreement to avoid future disputes.

9. Barriers to Employment

Training, or the lack thereof, is frequently cited by Baffinland and QIA as the primary obstacle to increased Inuit employment. However, a cursory examination of the socio-economic trends in the communities in the Qikiqtani Region suggests that there are significant barriers to employment that extend beyond the formal issue of skills and training. These barriers include widespread challenges associated with intergenerational trauma, including addictions, mental health disorders, incarceration, and family turmoil.

Intergenerational trauma in the Baffin Region has its primary roots in state interventions in the Canadian Arctic after the Second World War. Prior to the war, the Government of Canada had maintained a *laissez-faire* approach to Inuit, and encouraged them to live on the land as hunters and trappers. The collapse of the fur trade and growing sovereignty concerns led the state to abandon this approach to Arctic governance and intervene directly in Inuit society (Tester and Kulchyski, 1994). These interventions include the introduction of federal schooling (Qikiqtani Truth Commission, 2013a), the coerced relocation of Inuit (Qikiqtani Truth Commission, 2013b), and the slaughter of Inuit sled dogs (Qikiqtani Truth Commission, 2013c). These initiatives were administered in a colonial fashion with disastrous consequences for Inuit society. Because of the power imbalance between Inuit and government officials, Inuit were not in a position to withhold their consent to their participation in these government programs (Brody, 1975).

These interventions caused significant psychological distress and social disruption for Inuit who were subjected to them. The painful separation of children from their parents for formal schooling and tuberculosis treatment is likely the best-known implication of government interventions (Qikiqtani Truth Commission, 2013a, 2013d). However, many other aspects of these interventions were traumatic for Inuit, especially the forced transition from living "on the land" as hunters and trappers to living in permanent communities established by the state (Rasing, 2017). This shift effectively alienated many Inuit from the traditional economic and cultural activities in which they had engaged for millennia, dramatically changing a way of life forever. This trauma was subsequently passed down from one generation to the next. In many cases, the mechanisms older generations used to cope with their trauma resulted in the traumatization of younger generations (Crawford and Hicks, 2018).

It is now increasingly accepted that this intergenerational trauma is the root cause of many of the social issues Nunavut residents are grappling with today. These include youth suicide, addictions, family violence, mental health disorders, and conflicts with the criminal justice system (Inuit Tapiriit Kanatami, 2016; Pauktuutit Inuit Women of Canada, 2016; Nunavut Tunngavik Inc., 2013). These social issues are likely serving as additional barriers to employment in the Qikiqtani region (Bernauer and Hicks, 2018). For obvious reasons, individuals suffering from addictions or mental health disorders, or who are incarcerated will have a great deal of difficulty maintaining employment, especially given the high-stress context of rotational "fly-in/fly-out" shift work.

As such, much more must be done to address poor Inuit participation rates in addition to offering training and skills development programs. To their credit, Baffinland offers on-site counselling to employees. However, because this trauma operates at the community, rather than individual, level, employee counselling will likely not be adequate to substantially resolve these problems. Realistically, healing from intergenerational trauma will require a sustained and collaborative effort with the participation of communities, industry and government. Moreover, healing will likely take a significant amount of time.

10. The Mary River IIBA Renegotiation

The Project Stabilization Approach paved the way for a renegotiation of the Mary River Inuit Impact and Benefit Agreement, the details of which were announced in October 2018 (QIA, 2018c, 2018d). An overall Inuit Employment Target of 50%, in addition to the annual MIEG, was set for the next 10 years. The target will be designed around specific job categories and skill sets which will enable better planning of both employment and training as well as career path planning. Provision has been made for greater consultation with communities on employment and training opportunities, for the appointment of four Inuit interns (two in human resources and perhaps finance), four Inuit human resources employees, and an Inuit recruiter. Greater efforts will be made at Inuit retention.

On the training side, $10m will be provided by Baffinland for the design and construction of a regional training centre in Pond Inlet, which will be developed by QIA and Baffinland, the community, and the Nunavut Arctic College. The training budget will be expanded to $2.25m per year for 2018 to 2021, and $1.5m on the delivery of training to Inuit from 2021 to 2031. The Work Ready Program will be delivered three times a year by Baffinland, and all Inuit who enter training will be hired as Baffinland employees. Medical assessments will not be used to prevent Inuit enrolling in training.

Another aspect of the renegotiated IIBA is the stabilization of royalty payments. While rates and limits for advanced payments remain the same, starting in 2019, payments to QIA will be based upon actual sales of iron ore. If a royalty payment is less than $5M then QIA will still receive advance payments.

The community of Pond Inlet will receive $200,000 annually for 10 years for a Project Monitoring Fund to run independent monitoring projects related to the impacts of the Mary River

Project. Also, under a Marine Equipment Program, every three years Baffinland will purchase a $300,000 research vessel and transfer its ownership to, in turn, Pond Inlet, Arctic Bay, Clyde River, Igloolik, and Hall Beach. Within 15 years each community should have its own research vessel.

These are significant improvements, especially with regards to training. However, though employment goals will still be dictated by annual MIEGs, there is still no provision for compensation should they not be met. Neither is mention is made of Inuit benefits from contracts with Baffinland.

11. The Significance of Financial Benefits to Families and Communities

Indigenous People in Nunavut are underrepresented in the labour force, and those that are employed earn much less than their non-Indigenous counterparts. The result is that Indigenous earnings are in total much less than they could be and, as a result, GDP in Nunavut is also much lower than it would be under more equitable labour and income conditions. In a paper for the National Aboriginal Economic Development Board, Fiscal Realities Economists (2016) have put a numerical estimate on these "losses." Thus, if the average income of Indigenous People in Nunavut was the same as that of non-Indigenous People, instead of being $52,329 lower, then the 13,014 employed Indigenous People would earn $681m more (Fiscal Realities Economists, 2016, p. 6). If the employment rate of Indigenous People were the same as that of non-Indigenous People, instead of being 46.2% less, an estimated 8,829 additional Indigenous employees would earn $793m (Fiscal Realities Economists, 2016, p. 10). Combined, the additional employment income of $1.47b would raise the GDP of Nunavut by $2.2b (Fiscal Realities Economists, 2016, p. 13). These number put rough parameters around the problems of employment and training in Nunavut and highlight the huge losses in potential income from the failure to hire and train Indigenous People.

What makes these numbers even more egregious is the fact that Nunavut has one of the highest rates of poverty in the country, with 10,500 families living below the Low Income Measure of poverty (Canada Without Poverty, 2016, p. 2) and almost 40% of the population rely on social assistance (Nunavut, 2018a). Combined with a high incidence of food insecurity, poor housing, limited access to health care, and low educational attainment, the loss of potential income in contemporary times is doubly disturbing. While Canada ranks 9th among 188 countries on the Human Development Index (measured by per capita income, longevity, and level of education), if Nunavut were a country it would rank 46th (Canada Without Poverty, 2016, p. 7), about the same as Latvia and below Argentina and Chile (UNDP, 2015, p. 208).[9] Undoubtedly, these marginalized conditions experienced by so many Nunavut residents are symptomatic of the long colonial history that Canadian society at large has yet to reconcile. In the context of these massive issues of structural inequity, the Mary River IIBA targets are far from inconsequential – had the MIEG been met in 2016, 100 Inuit families would have been taken out of poverty; this number would increase as planned output increases were met.

[9] Since then Canada has slipped to 12th in the world on the HDI rankings. See the 2017 Human Development Report, UNDP.

12. Meeting Indigenous Employment Targets and Delivering Other Benefits: Lessons from Other Resource Projects

While the Baffinland IIBA is unique in content, there are other agreements both in Canada and overseas which are similar in the intent to maximize benefits flowing to Indigenous People on whose land mining is taking place. In what follows, we will examine four of these, three in Canada and one in Australia; one in iron ore mining, one in nickel and copper, one in diamonds, and one in gold. The last of these is also in Nunavut and has, therefore additional significance. We start, however, with the iron ore mine in Australia.

Pilbara Mine, Australia

The Pilbara Mine operates in Western Australia under a Regional Partnership Agreement (RPA). Facilitated by the Minerals Council of Australia and the Australian Government, the Pilbara RPA covers four private companies, seven Indigenous organizations, and two local governments, as well as the state and federal governments. It is one of six such agreements in Australia designed to support employment and business development (Minerals Council of Australia, 2018).

This regional agreement replaced earlier binding initial agreements, with all Aboriginal groups ultimately agreeing to "opt in" to this voluntary agreement which provides consistency of implementation across the whole region. The need for a new approach was evident because, despite substantial growth in economic activity and employment opportunities in the Pilbara region since the 1960s, the overall employment rate for Indigenous People rose only slightly from 38% in 1971 to just 42% in 2001 (Taylor and Scambary, 2005). Notwithstanding strong demand for Indigenous labour, there were significant problems on the supply side owing to low levels of formal education, poor health, and high rates of substance abuse and interaction with the criminal justice system. This situation led to efforts by Rio Tinto to raise Indigenous employment through local participation agreements and a regional framework agreement. In return, traditional owners with newly recognized legal land rights supported the expansion of the company's mining permits and operations to service the expanding market (Rio Tinto, 2016). The different institutions participating in the agreement worked together to reduce unemployment among local Aboriginal People and create over 100 new positions per year between 2007 and 2012. The result was that by 2013 there were more than 1,000 Aboriginal People employed by Rio Tinto's iron ore business in Western Australia, providing a strong foundation for the regional agreement (Barclay, Parmenter, and Barnes, 2014).

The Pilbara Participation Agreement commits Rio Tinto to employing Aboriginal People in the same proportion of its workforce as they are represented in the regional population (currently 12.2%, and amended with every census) (Rio Tinto, 2016, p. 116). The target for the proportion of its spending to be aimed at Aboriginal businesses is the same. Royalties will be paid annually, though the details are not public (NewsComAu, 2011). The implementation strategy to meet this target for Indigenous businesses is similar to the IIBA in appointing an Aboriginal Liaison Officer to identify suitable contract opportunities, providing support to meet Rio Tinto safety and other operating standards, developing a business registry to better understand available capacity and capabilities, providing preferential treatment in tenders for Pilbara Aboriginal businesses,

breaking down large tenders into contracts suitable for small Aboriginal businesses, and restricting some tenders to Pilbara Aboriginal businesses only (Rio Tinto, 2016).

Unlike the IIBA, the Pilbara RPA provides compensation to the Indigenous organizations if employment targets are not met. This takes the form of Rio Tinto having to provide 12 tertiary scholarships a year for Pilbara Aboriginal People to a total value of AU$200,000 (Rio Tinto, 2016, p. 116). The employment target was met for the first time in May 2017, when 12.4% of the workforce was Aboriginal (Rio Tinto, 2017a, p. 39).[10] It is to be noted that this ratio of Indigenous to total employment is still well below the ratio reached in the IIBA in 2017, a ratio deemed unacceptable by QIA. The idea of scholarship compensation for not reaching employment targets is, however, worthy of consideration.

The proportional employment targets set by Rio Tinto are much smaller than those of the IIBA because Indigenous People in Pilbara make up a much smaller percentage of the population than in Nunavut, where Inuit constitute an estimated 84% of the total population (Nunavut, 2018b). The Pilbara employment target and actual figures are, however, much higher than the 8% Indigenous employment target set in the National Reconciliation Action Plan (Rio Tinto, 2017a, p. 39).[11] Unlike those in Nunavut, employment targets in Pilbara are set in terms of total employment and Aboriginal employment. In the IIBA, employment targets are instead measured in hours of work, which can often be quite different and could be much lower.

Local procurement mining contractors have contributed to Indigenous employment. Western Australian-based contractor NEMMS (Nyiyaparli Engineering Mine Maintenance Service) JV, which is 50% Indigenous owned, was founded nearly five years ago and undertakes both civil and mining works (Creagh, 2017).

According to Barclay et al. (2014), Rio Tinto's iron ore operation has been instrumental in establishing an Aboriginal mining services cluster that includes more than 100 Aboriginal businesses. The services they provide include civil and mining construction; plant hire and labour hire; accommodation and catering; building trades, carpenters, electricians; building fabrication, fit out, and refurbishment; fencing, landscaping, plant nursery, and site rehabilitation; rubbish removal and recycling; biodiesel; cross-cultural awareness training.

In 2018, Rio Tinto announced the awarding of a multi-year, multi-million-dollar contract with North West Alliance for the management of their waste and recycling business in the 16 mines and two ports that Rio Tinto operates in Pilbara. The North West Alliance is a joint venture between Our Country, a wholly Aboriginal-owned business and Veolia, a major international (and sometimes controversial) player in water and waste (Rio Tinto, 2018). Such alliances would have appeal if larger contracts are sought by Aboriginal companies.

[10] There are unexplained discrepancies in employment data in Rio Tinto's 2017 *Annual Report*. On page 39 it states that the employment target of 12.2% was met in 2017 and the number of Indigenous employees was 960. On page 207 total employment at Pilbara is given as 10,159, which would make the Indigenous total well below the target at 9.4%.

[11] The absolute numbers involved are also much higher than those in the IIBA, with employment in Pilbara being around 10,000, compared with only a maximum of 670 for the Mary River mine at full capacity (Buckley, 2016, p. 22).

Voisey's Bay, Newfoundland and Labrador

Voisey's Bay Nickel Company (VBNC) is owned by Brazil-based Companhia Vale do Rio Doce (commonly known as Vale), which took over the Voisey's Bay site from Inco in 2006. It produces copper and nickel and has two separate legally binding Impact and Benefit Agreements (IBAs) – one with the Innu, and one with Inuit. IBAs secure economic benefits and maximize the project opportunities for Inuit and Innu while helping mitigate the possible negative impacts of the project. The Labrador Inuit Association (LIA, precursor to the Nunatsiavut government) and the Innu Nation had filed land claims in the area in the 1970s, with both claims actively being negotiated through the 1990s. After the discovery of large nickel deposits in 1993, separate IBA negotiations took place between VBNC and each of LIA and Innu Nation; an important feature of the Voisey's Bay development was the occurrence of parallel negotiations of the IBA Agreements and land claim negotiations.

Under the land claims agreement, Labrador Inuit receive 3% of provincial resource royalties from the Voisey's Bay Project (O'Faircheallaigh, 2016, p. 182). As in the case of Inuit in Nunavut, IBAs are compulsory for all large development projects.[12]

Concurrently to IBA negotiations and land claim negotiations, the Labrador Inuit and Innu used an Environmental Assessment (EA)[13] process to press for stronger employment commitments and for developing language that would later be used in the IBA. The review panel for the EA determined that some employment provisions, such as the adjacency principle,[14] would be best left to the privately negotiated IBAs. The panel also recommended the government impose on the company requirements for training plans and the hiring of Aboriginal employment coordinators, and provisions to assist women workers and Aboriginal workers who were on leave or dismissed in regaining employment (McCreary, Mills, and St-Amand, 2016).

VBNC's decision to voluntarily follow the EA panel recommendations, which were not mandatory, was likely influenced by the political and legal ramifications of not doing so. The willingness of Inuit and Innu to defend their rights through direct action and litigation pushed the company to respect the recommendations of the EA panel.[15] The EA process was important in this case in having a direct influence on Aboriginal[16] resource employment.

Unlike Baffinland in its IIBA, VBNC did not create firm employment targets or commit to including them in the IBAs, but like the IIBA, the IBAs included provisions for best practices in

[12] A major development is any development that entails capital expenditures of $40m or 150 person-years of employment in any five-year period.

[13] In January of 1997, a Memorandum of Understanding (MOU) was signed between LIA, Innu Nation, and the federal and provincial governments to establish a joint Environmental Assessment process (EA). The EA process culminated in 1999 with the release of the panel report.

[14] Using proximity to the project as the primary criterion, after qualifications, in making hiring decisions.

[15] In the spring of 1997, the LIA successfully used both judicial intervention and direct acts of civil disobedience to block construction of a road and temporary airstrip at the project site, forcing them to go through a full EA.

[16] A note on terminology: Over time, terminology has changed. *Indigenous People* is now preferred to *Aboriginal People*. In what follows, the terminology applicable in the documents drawn upon, including statistics, has been maintained in order to retain the authenticity of the pieces. Often, the term *Aboriginal* is used.

business opportunities for Inuit and Innu, royalties, and the training and employment of the beneficiaries of the Labrador Inuit Land Claim Agreement (LILCA).[17] LIA members and Labrador Innu would be the first hired and last fired. The IBA also provided for the creation of Inuit worker committees to address any concerns that Inuit workers might have (Mills, 2011). Quarterly reporting of Aboriginal employment was also built into the Development Agreement for the mine (Newfoundland and Labrador, et. al., 2002, Article 11.1.5).

As with the IIBA, specific scholarships are available for Innu and Inuit. The company regularly supports cultural and community events through sponsorships and donations, as well as funding to programs aimed at encouraging school attendance and student development (Vale, n.d.).

Voisey's Bay is a fly-in/fly-out worksite, where employees typically work for two weeks at a time. The camp complex at Voisey's Bay offers first-class accommodations and recreational facilities to 450 employees (Vale, n.d).

In the construction phase of the project, VBNC established hiring and workforce development programs aimed at maximizing opportunities for Aboriginal participation. These carried forward into the operational phase and included:

- employment and training commitments built into all contracts with companies working at the construction site;
- provision for local oversight of employment and training commitments;
- negotiation of the collective agreement with construction trade unions to accommodate IBA hiring commitments and for a Labrador adjacency policy;
- VBNC working with LIA, Innu Nation, and LMN to build a skills inventory of their members interested in employment at the mine and concentrator site; and
- VBNC monitoring contractor performance and regularly intervening to ensure that Aboriginal workers were given first priority.

In September 2003 a Joint Employment Training Authority (JETA) was formed as a not-for-profit Aboriginal-controlled organization, contracting with VBNC to provide training and workplace experience for Innu, Inuit, and Métis.

Despite the absence of specific employment goals, VBNC appears to have had considerable success in raising the employment of Inuit and Innu, who in 2017 were said to comprise 50% of the mining operation's workforce (Vale, n.d.). In addition, approximately 80% of the support contracts for operations at the mine and concentrator are with Aboriginal businesses (Vale, n.d.) which, as O'Faircheallaigh (2010, p. 73) points out, "tend to have higher rates of Aboriginal employment than either mining companies or non-Aboriginal contractors." These cover activities such as catering and camp services, security, air transport, medical services, shipping support, and equipment maintenance.

[17] The Labrador Inuit Land Claim Agreement (LILCA) was signed in 2004.

There are, however, issues on the employment side. A study by Mills (2011) found that, while IBA provisions helped to increase the Inuit component of the workforce at Voisey's Bay and provided business to Inuit enterprises, they also reduced the space for participation by trade unions. This is, perhaps, an inevitable outcome of building the provisions of the IBA into the collective agreement (Newfoundland and Labrador, 2005).

While the IBA did give employment priority to Inuit and Innu women, this is not widely known, and Cox and Mills (2015, p. 246) found that "women working at the site experienced gendered employment barriers similar to those experienced by women in mining elsewhere." Even so, 136 women were hired in the construction phase, representing 28% of the 475 overall Aboriginal participants (Canada, 2009). This is significant given the fly-in nature of the mine, the arduous nature of the work, and the daycare requirements of this female demographic. As for ensuring women's employment in the operations phase, women's contributions to the development of both the EA regulations and the IBA were consistently downplayed due to "persistent masculinity within the mining industry," and "worker and union support for the preferential hiring of Inuit and Innu men was much stronger than was support for the preferential hiring of Inuit or Innu women . . . The prioritization of women was therefore not located within the same anti-colonial frame as the prioritization of Inuit" (Cox and Mills, 2015, p. 257). Nonetheless, 155 women were employed, or 17.5% of the labour force in 2011, mainly in "culinary, housekeeping, administration, and corporate services jobs" (Cox and Mills, 2015, p. 257).

Diavik Diamond Mine, Northwest Territories

This underground diamond mine is owned by Rio Tinto (60%), in partnership with the Dominion Diamond Diavik Limited Partnership (40%), both headquartered in Yellowknife, Northwest Territories (Rio Tinto, n.d.). It commenced operations in the late 1990s.

Five First Nations[18] have each signed bilateral participation agreements with Diavik. These are supplemented by a social and economic monitoring agreement and an environmental agreement between the Government of the Northwest Territories, Diavik, and all five First Nations. While the participation agreements set broad commitments, the socio-economic monitoring agreement established specific targets and reporting processes for Diavik's Aboriginal and Northern employment and business spending. It also made specific commitments to cultural and community well-being and set up structures to govern engagement between the parties, initially the Diavik Project Communities Group Advisory Board, replaced in 2011 by community liaison officers in the nine communities and by implementation committees. The environmental agreement created an additional community-based board, the Environmental Monitoring Advisory Board, to review and comment on Diavik's environmental performance (Rio Tinto, 2016).

The Socio-Economic Monitoring Agreement with the Government of the Northwest Territories formalized commitments to provide training, employment, scholarship programs, and

[18] The five First Nation signatories include the Tlicho First Nation, the Yellowknives Dene First Nation, the ŁutselK'e Dene First Nation, the North Slave Metis Alliance, and the Kitikmeot Inuit.

business opportunities to local Aboriginal Peoples (Natural Resources Canada, 2014). Under the Agreement, Diavik Diamond Mine waives standard educational requirements for Aboriginal candidates. It offers training and apprenticeships to help connect Aboriginal People with employment opportunities as well as programs to help local Indigenous employees and their families prepare for changes in lifestyle which result from shift rotation work.

The Agreement targets 70% of the mine's expenditure to local Northern businesses and Diavik gives preferential weighting to Northern and Aboriginal businesses or those with a high proportion of Aboriginal employees. There is no specific target for spending on Aboriginal businesses. Subject to satisfactory performance, Northern and Aboriginal contractors are guaranteed the work as long as the mine is in production (Rio Tinto, 2016), which will be at least until 2025 (Rio Tinto, 2017b, p. 5).

Since 2014, the number of Aboriginal workers has grown from 194 to 280, while the proportion of the labour force has been relatively steady at between 18 and 25% (the total workforce itself having expanded rapidly from 948 to 1,134). Employment is measured by person-years or by hours of work, so data is comparable with that for IIBA. The company has committed to reaching 40% Inuit employment, so it is well below this "target." It has also committed to 66% Northern employment (of which the Inuit commitment is part), and so far has reached 51% (NWT and Nunavut Chamber of Mines, 2017, p. 5). But by 2016 the actual number of Northern workers was more than double the number predicted in environmental assessments, so failure to meet planned proportions of total employment has been dwarfed by growth in total employment (NWT and Nunavut Chamber of Mines, 2017, p. 4).

Spending on Northern businesses reached $283.6m or 68% of total spending, quite close to the target. Spending on Northern Indigenous businesses and their joint ventures reached $148m in 2017, or 35% of the total, up almost $25m from the previous year. The Indigenous proportion of total spending has held firm since 2000, as the cumulative amount has reached $2.8b out of total spending of $7.6b (Rio Tinto, 2017b, p. 6).

Of the 24 apprentices completing their first or second trade, eight were Northern Indigenous People (Rio Tinto, 2017b, p. 7). More detailed data on training is not available.

There are 155 women employed by Diavik, but no specific data is available on Indigenous women. The National Aboriginal Health Organization (2008) identified a number of barriers to women entering the labour force and progressing up the ranks; these included discriminatory hiring practices, inadequate training, cultural barriers, and the selective hiring of women in low-paying traditional housekeeping, cleaning, and cooking occupations.

An evaluation conducted by the territorial government of the impact of the Diavik diamond mine found positive impacts on jobs, wages, incomes, and education levels. However, development has sometimes also brought with it some social negatives, including an increase in suicides and family violence (Government of the Northwest Territories, 2013).

Agnico Eagle Mines, Nunavut

Agnico Eagle mines consists of three separate gold mines; Meadowbank, Meliadine, and the Whale Tail projects in the Kivalliq region of Nunavut. The Meadowbank gold mine is an open-pit mine which became fully operational in 2010. Regional Inuit are represented by the Kivalliq Inuit Association (KIA), with whom Agnico Eagle entered into an IIBA signed in 2007 and updated in 2011 (see Agnico Eagles Mines and Kivalliq Inuit Association, 2011). The intent of the IIBA is the same as that for Baffinland, which is to ensure that the mine contributes to the well-being of Inuit; provides them with training, employment and business opportunities and addresses, as far as reasonably possible, any detrimental impacts on Inuit (Agnico Eagles Mines and Kivalliq Inuit Association, 2011, Article 2.1).

In 2017, the Meliadine mine was approved for commencement in 2019. It is located near the western shore of Hudson Bay in the Kivalliq region of Nunavut, about 25 km north of Rankin Inlet and 290 km southeast of the Meadowbank mine (Agnico Eagle, 2018a). The Whale Tail gold mine is the third Agnico Eagle project in the region. This open-pit mine will use the infrastructure of Meadowbank mine located only 50 km away, enabling it to commence operations by the third quarter of 2019 if the necessary permits are in place. The Nunavut Impact Review Board issued the project certificate for the development and operation of the Whale Tail pit in March 2018 (Agnico Eagle, 2018b). Agnico Eagle is expected to invest US$1.2b over the next three years to develop the Whale Tail and Meliadine projects.

The Meadowbank IIBA probably provided a model for the Baffinland agreement as the main provisions are very similar: essentially, targets to raise Inuit employment and training, and for Inuit to share in contracts signed with private contractors. Provision is also made to give preferential treatment to Inuit businesses. There are some important differences, however, from Baffinland's IIBA. The Meadowbank IIBA's initial target level of MIEGs for both direct employment and for employment by contractors was equal to the share of the Inuit in the Nunavut labour force. This is about 73% (Nunavut, 2018d), a much higher MIEG than Baffinland's 25%. In 2015, Agnico and the KIA agreed in the Meliadine IIBA that the MIEG for direct employment would be 50% for any of the Meadowbank, Whale Tail, or Meliadine projects (Stratos, 2017, p. 16), although that for contractors appears to have remained unchanged. A second difference is that the Meadowbank IIBA provides for possible penalties if less than 50% of the MIEG is not met two years in a row. An arbitrator may require the company to take remedial measures to "implement specific steps to achieve the MIEG in the future . . . and provide reasonable financial compensation to KIA to be applied toward Inuit training or employment programs" (Agnico Eagles Mines and Kivalliq Inuit Association, 2011, Schedule E 25).

Inuit employment at Meadowbank rose from 246 in 2010 to 302 in 2016, an increase of 23%. Total employment, however, rose from 602 to 834 or by almost 39%, so Inuit employment, therefore, actually fell from 41% of the total to 36% (Stratos, 2017, p. 14). In terms of hours worked, which is the equivalent employment metric behind the Baffinland IIBA, Inuit employment has been around 29% of the total (Stratos, 2017, p. 15). For contractors, however, the rate of Inuit employment has been much less, 10–11% between 2013 and 2015 (Stratos,

2017, p. 15). More than half of Inuit employees are from Baker Lake. This reflects its proximity to the mine, preferential hiring provisions for Baker Lake Inuit in the Meadowbank IIBA, and Agnico Eagle's training and recruiting efforts being focused on Baker Lake (Stratos, 2017, p. 19). The turnover rate for permanent Inuit employees is around 29% (Stratos, 2017, p. 20).

Since income paid to Inuit employees reached $22m in 2016, average Inuit wages would appear to be in the region of $72,850 (Stratos, 2017, p. 22), up from $66,000 in 2011 (George, 2011).

Forty-six percent of Inuit employees occupy semi-skilled jobs and 53% occupy unskilled jobs, with non-Inuit occupying all of the management and professional jobs and over 98% of the skilled jobs (Impact Economics, 2018, p. 34). Moreover, a much larger proportion of Inuit jobs (30%) are temporary, on-call, and casual, compared with non-Inuit jobs (1%) (Bernauer, 2018). The result is that Inuit employees both will be earning much lower wages and are more likely to be in precarious employment.

While there have been no gender targets for employment, there were 112 permanent female workers in 2016, or 18% of the total employed (Stratos, 2017, p. 19). There are no data for female Inuit employees.

In 2016, contract expenditures on Inuit-owned businesses reached a record $128.9m, or 54% of total spending. This was assisted by a new Meliadine IIBA pre-qualification procurement system which ensures a systematic consideration of the 79 NTI-registered firms (Stratos, 2017, p. 29).

Agnico Eagle has consistently invested around $4m per annum in training, using a variety of both external and internal programs. An average of 51 hours of training was provided per Inuit employee in 2016 (Stratos, 2017, p. 38). The company had 13 Inuit apprentices in 2016 (Stratos, 2017, p. 39).

As the Meadowbank mine winds down, the ramping up of the Meliadine and Whale Tail mines is expected to create 2,000 jobs, 700 of which will be Inuit, bringing a payroll of $66m to Kivalliq communities.[19] Under the new IIBA, in June 2017 KIA received a payment of $6.5m, including $3m for a community fund (*Nunatsiaq News*, 2017). Provision is also made in the IIBA for the payment of resource royalties and fees to KIA and NTI from the Whale Tail, Meadowbank, and Meliadine projects, with the Whale Tail project providing KIA with a 1.4% net smelter return on production. Annual training programs will be funded at $3.6m with an additional $1m investment in the event that the 50% target for Inuit employment is not reached, and preference is given for NTI-registered companies to allow Inuit companies to compete with southern business (*Nunatsiaq News*, 2017).

[19] It is not clear from these numbers how 50% of the workforce will be Inuit. The average wage also appears to be over $94,000. If the average wage remained at its 2016 level of $72,850, then a wage bill of $66m would suggest Inuit employment of 906, which is much closer to the 50% target.

13. What Can We Learn from These Experiences?

The benefit agreements underlying relations between the various private mine owners and Indigenous People are very similar in both intent and content. Table G summarizes their main content as far as employment and contracting opportunities are concerned.

Table G. Targets for Five Mines

Target	Baffinland Mary River	Pilbara	Voisey's Bay	Diavik	Agnico Eagle
Aboriginal Employment Target	Yes 25%[20]	Yes 12.2%	No	Yes 40%	Yes 50%
Aboriginal Employment Target Met and Actual	No 12.5%	Yes 12.4	50%	No 18–25%	No 29%
Total Female Employment	8.1%	12.5%[21]	17.5%[22]	155 or 12.7%	18%
Spending on Aboriginal Business	Maximize	Yes 12.2%	Not explicit	Yes 70% for all Northern	Yes 73%
Spending Target Met or Spending Actually Met	35%	?	80%	68% All Northern 35% Aboriginal	54%
Compensation If Targets Not Met	No	Yes	No	No	Yes
Aboriginal Apprenticeships	1	No data	No data	8	13
Training Targets	$1m p.a.[23]	No data	No data	No data	$3.6m p.a.

Baffinland is one of the four mining companies in this study which have set Indigenous employment targets. The target of 25% is well below those for Agnico Eagle and Diavik, also operating in the Canadian North, but much higher than that of Pilbara, which is based on the population count of Aboriginal People. Only Pilbara has actually met its employment target, which is, however, well below those of Baffinland, Diavik, and Agnico Eagle. Baffinland's actual Indigenous employment as a percentage of the total is far less than that of Diavik and Agnico Eagle and merely a fraction of that claimed for Voisey's Bay. The turnover rate for Inuit workers in Baffinland is also very high relative to that of Agnico Eagle. Collectively, these statistics confirm that other Canadian operations are doing much better than Baffinland in terms of overall Indigenous employment.

[20] This is the original target which was increased to 50% in the renegotiated IIBA in October 2018.

[21] Source: International Women in Mining, 2017. https://internationalwim.org/meet-samantah-wood-mining-production-supervisor/

[22] This number is from 2011 (Cox and Mills, 2015, p. 253).

[23] The renegotiated IIBA raised this to $2.5m for 2018–2021.

Both Pilbara and Agnico Eagle have provision for penalties when targets are not met. Baffinland faces no such penalties.

The record of Baffinland with regard to female employment also leaves much to be desired, employing only 8.1% of females in its labour force, with the other four, and especially Voisey's Bay and Agnico Eagle, doing much better. Inuit women accounted for only 3.6% of total hours worked at Mary River in 2017 (Jason Prno Consulting Services Ltd., 2018, p. 43). We do not have equivalent numbers for the other four companies.

All five companies aim to increase contracting opportunities for Aboriginal People. Pilbara, Diavik, and Agnico Eagle have explicit targets, 12.2%, 70% (for Northern content broadly) and 73%, respectively. Baffinland and Diavik each appear to have channelled 35% of total spending through Aboriginal contractors, while Voisey's Bay claims 80% and Agnico Eagle, 54%. The employment record of contractors leaves much to be desired in all three Nunavut mines.

Agnico Eagle appears to put over three times as much money each year into training compared to Baffinland, which might help explain why its Inuit workforce is three times higher. Diavik and Agnico Eagle appear to have been much more successful than Baffinland in recruiting Inuit apprentices. One explanation for this might well be the failure of Baffinland to develop and implement an Inuit Human Resources Strategy until quite recently. Another possible explanation, which is hard to verify, is that the communities from which Diavik and Agnico Eagle draw their labour have different socio-economic backgrounds from those from which Baffinland draws its labour.

Suggestive of these differences is employment and income data in Table H for Baker Lake and Pond Inlet. This comparison assumes these two communities can be taken to be representative of communities covered by Diavik and Baffinland, respectively. Baker Lake has a higher participation rate, a higher employment rate and higher median employment income than Pond Inlet, and a lower percent of the population reliant on social assistance. These factors suggest that people in Baker Lake are more exposed to wage labour.

Table H. Labour Force, Employment, and Income, Selected Diavik and Baffinland Communities

	Baker Lake–Qamanttuaq	Pond Inlet
Population over 15	1,400	1,030
In Labour Force	945	625
Employed	695	465
Not in Labour Force	460	405
Pop on Social Assistance %	26.4	46.3
Participation Rate %	67.5	60.7
Employment Rate %	49.6	45.1
Median Employment Income $	27,150	14,520

Source: Nunavut, 2018c

Even less complete data is available for Diavik communities, but data for ŁutselK'e seems to support the above hypothesis, with the participation rate being 69.6%, the employment rate 52.9%, and average employment income being $33,667 (Northwest Territories, 2014) – all significantly higher than those for Pond Inlet.

There may also be significant social differences with complex historical roots that help explain the different employment experiences between the two mines, but data is hard to come by. One notable difference is in suicide rates over a number of years, with the incidence being twice as high in Pond Inlet as in Baker Lake (Hicks, 2015). More study of other social factors seems warranted.

B. Looking Forward: Medium Term

14. Forcing Employment and Other Goals by Regulating the Expansion of Output

Baffinland has failed to deliver on employment targets and has a disappointing record on training, apprenticeships, and the use of contracts to spur Inuit employment. Performance in 2016 was particularly poor in each of these respects. The question is: What kind of incentives will spur the company to do better in future? One possible approach is to tie permission for the company to expand output to its record in the IIBA clauses concerning employment, training, and contracts; if the company fails to meet certain levels and proportions in these areas then it will not be given permission to expand output. This restriction is likely to be taken seriously by the company because output expansion is considered vital for the long-term success of the operation. As discussed earlier, there are already proposals to expand output from 6.0 MT/a (Revised Early Revenue Phase) to 12 MT/a (Phase 2 Proposal), towards an ultimate goal of 18 MT/a in the original proposal, amounting to possibly 30 MT/a in total. However, unlike other aspects of the IIBA, the expansion of output is not formally the subject of direct negotiations between QIA and the company. It is, initially, under the purview of the Nunavut Impact Review Board (NIRB; see Appendix 1). As NIRB is an Institution of Public Governance established under the Nunavut Agreement, Inuit assert influence over its decisions through the nomination of four of the nine members of NIRB's board. NIRB appointments are, however, at the discretion of the minister. Under its mandate, NIRB is responsible for preparing project-specific assessment reports with recommendations, but "the ultimate decision as to whether a project proposed in Nunavut will proceed lies with a federal Minister in Ottawa, and not with those Inuit of Nunavut who are beneficiaries of the Agreement, or with the Government of Nunavut" (Dylan, 2017, p. 211). So, if QIA were to pursue linking output expansion to Baffinland meeting its IIBA commitments, it would ultimately need both the support of NIRB and the backing of the federal government. Still, it is worth considering. The recently renegotiated IIBA was accompanied by the following statement (QIA, 2018e), suggesting that QIA might be amenable to this approach:

> QIA pledged that it could only consider supporting the 2018 Production Increase Application if there was a consistent drive towards directly improving the lives of Inuit as a result of the project. QIA was no longer willing to accept inaction in key benefit areas such as Inuit training, employment, contracting and project monitoring and mitigation.

The question would then become: To which targets should output expansion be linked and in what ways? Current target indicators, as defined in the current IIBA, are probably too few and too inadequately expressed. They essentially consist of the following:

- The employment target expressed in Inuit hours of work as a percentage of the total, currently, 25% (long-term modified to 50%)
- The Inuit employment target for contracts, currently, 25%

- Training: no specific targets but $1m per annum for the first two years, expanded in 2016 to $1m for each of 5 years; Greatly expanded under the renegotiated IIBA to $2.5m for the years 2018 to 2021, and $1.5m from 2021 to 2031.
- Maximizing spending on Inuit jobs, grants, etc; no specific targets

To the first two of these specific targets might be added eight additional specific targets:

- Inuit percentage of wage bill. This avoids the potential issue of the minimum employment target being met but with Inuit occupying only low level positions. In 2017, this was about 11% of the total.[24]
- Minimum target for Inuit female employment, based on percentage of hours of work
- Female Inuit percentage of wage bill
- Target retention rate of Inuit employees, to reduce turnover
- Specific training targets for Inuit, by type of job, by year
- Target for expenditure on Inuit training, annually
- Specific targets for Inuit apprentices, by year
- Targets of total Inuit contract expenditure as percentage total, year by year

Table I lays out a scenario whereby the mine raises output steadily from 4.5 MT/a to 12.0 MT/a over four years.

Expansion of output by Baffinland could be conditional upon the company meeting all 10 targets listed in the prior year.

For each year, targets are set for the 10 performance indicators assessing Baffinland's progress in meeting the intent of the IIBA. These targets are estimated based on limited information and would need to be developed based upon actual data collected and assessed for such purposes. The IIBA should be structured to require both the collection and assessment of such information to these purposes. If recent financial forecasts exist which show where Baffinland intends to go over this period, the information should be shared so these targets could be compared to actual plans.

Based upon this work QIA and the Company would be in a position to actively fulfill the objective of the IIBA:

> QIA and the Company agree to cooperate to build capacity to maximize Inuit participation over time. QIA and the Company will consistently encourage Inuit to maximize ownership, subcontracting, management and employment benefits arising from the Project. Initial thresholds will be set at levels that reflect current availability of people and skills, with increasing target levels to be established and reviewed as the Project progresses. Methods of measuring

[24] Total payroll for the mine is estimated from payroll tax payments of $1.5m in 2017. The tax is 2% of payroll.

> targets will be established cooperatively and measurement will occur at least annually. The targets may be adjusted annually by mutual agreement. The Company will take all reasonable steps, acting in good faith, to meet Inuit training, employment and contracting objectives described in this Agreement and QIA will cooperate with the Company for that purpose. (QIA, 2013, 2.3)

Table I. Baffinland Output and Inuit Targets[25]

	2018	2019	2020	2021	2022
Output MT/a	4.5	6.0	6.0	9.0	12.0
Inuit Employment %	15.0	20.0	25.0	30.0	35.0
Inuit Employment Contracts %	20.0	25.0	30.0	35.0	40.0
Inuit % Wage Bill	12.0	15.0	20.0	25.0	30.0
Minimum Inuit Female %	4.5	6.5	8.5	11.0	14.0
Inuit Female % Wage Bill	3.0	4.0	6.8	9.2	12.0
Inuit Retention Rate %	50.0	55.0	65.0	80.0	80.0
Training $m	1.5	2.5	3.0	3.5	3.5
Inuit Apprentices	5	10	15	15	15
Inuit Contract Expenditures as % Total	38	45	55	60	65

Programs would need to be put in place to enable targets to be met. For instance, meeting female employment/wage bill targets would require the company and QIA to develop training programs for identified jobs, expand child care arrangements, and address other barriers to female employment. Reducing Inuit turnover and raising the retention rate would require some analysis of reasons for the high turnover rate and the development of practical measures to address them. Raising the impact of contracts on Inuit companies and jobs would mean insisting on these issues being dealt with upfront in contract applications. Specific training programs or specific jobs would also need to be put in place. It may well be that some progress was made in that regard in 2017 and in the renegotiated IIBA in 2018. Until the full range of such programs is phased in, it may be unrealistic to expect that all the Inuit targets would be met, so the requirement might be to meet a certain percentage of them, say 60%, rising to 100% as programs are developed. Again, these percentage goals would need to be determined by QIA.

[25] Baseline data is a mix of 2016 and 2017 and the % wage bill numbers are estimates. Output expansion would require that the company must have met the Inuit targets in the previous year.

Collectively, these recommendations demonstrate that increasing benefits to Inuit requires an overall management system complete with associated strategies, information collection, and assessment methods, as well as active execution of work plans. Therefore, it must be stated that seeing Inuit benefits increase requires an adaptation to the IIBA itself and the legal requirements to perform. Above all, such a complex set of circumstances requires sustained will to implement the agreement and overcome the challenges of mining in a remote environment while drawing upon a labour market with a historical skill and experience gap.

15. A Financial Transfer Alternative to Employment Growth? A Dual Economy?

An alternative approach would be to set targets like the ones proposed but requiring the company to make a financial compensation for falling short of specific targets rather than limiting production if targets are not met. This compensation could be calculated as the difference between the financial benefits received by Inuit if targets had been met and those actually received. This would put a financial value on the "Lost Benefits" identified by QIA (2017). These financial contributions would allow QIA to pursue alternative economic development opportunities to mining that might be more appealing to Inuit. For instance, some of the proceeds might be used to build modern economic development ventures in urban centres where Inuit actually reside. Alternatively, or even additionally, proceeds of compensation might be used to help strengthen and consolidate the traditional economy of hunting, fishing, and trapping. There are precedents for this in Mel Watkins's proposal that the Dene of the NWT deliberately create a "dual economy" in which Indigenous People create a modern economy around a renewable base financed by taxing the rents of non-Indigenous owned and staffed non-renewable enterprises (Watkins, 1977, pp. 94–99, quoted in Loxley, 2010, p. 129). Furthermore, the Nisichawayasikh Cree Nation in northern Manitoba has used compensation from Manitoba Hydro for damage caused by dam expansion to build modern economic development and training facilities, while at the same time promoting country food production and processing. Again, this uses rents from resource extraction to build a blend of modern and traditional ways of life and to retain and strengthen Cree culture (Loxley, 2012; Kamal et al., n.d.; Food Matters Manitoba, 2013, pp. 6, 11).

This dual economy approach also appears to be consistent with the recommendations of Mills (2011, p. 117) who argues that "the promotion of alternative economic development models that support both subsistence and cash economies, as well as respect of Aboriginal rights, will need to be an important component of how union-environmental coalitions consider environmental challenges in the North." Consultations with Inuit seem to suggest that there is an appetite for this combination of modern and traditional economies (Baffinland, 2018d, p. 55).

The compensation approach would give the company a direct financial incentive to meet Inuit targets, as otherwise it will be paying twice for the same costs of production. Compensation for not meeting specific targets could be calculated as follows, using Inuit employment as an example:

$$Compensation = x\{(Iet * Te * Iw) - (Iae * Te * Iw)\}$$

Where:

x = the % of lost benefits claimed as compensation

Iet = Minimum Inuit Employment Goal (MIEG) in percentage of hours worked

Te = Total employment in hours all workers

Iw = Average Inuit wage per hour

Iae = Actual Inuit employment in % of hours worked

Using plausible data for 2017, Table J lays out the following maximum compensation which might be payable based on x = 100% (i.e. on the assumption that the whole compensation might be claimed).

The table starts by drawing on data for total employment in Baffinland and on Inuit employment in 2017 (Jason Prno Consulting Services Ltd, 2018, p. iv). Inuit employment was 312,067 hours, or 13.1% of the total, whereas the MIEG was 595,248, or 25%. The difference is 283,181 "lost" hours. At an average Inuit wage bill of $26.50 per hour (about $60,000 per annum), lost wages amount to $7.5m. If x in the above equation is equal to 1, or if full compensation were claimed, then QIA would demand payment of the full $7.5m; if x were 0.5, then $3.75m would be demanded, and so on.

Table J. Putting a Value on Missing the Minimum Inuit Employment Goals (MIEGs), 2017

Total Hours Worked	2,380,990	
Inuit %	13.1	
Inuit Total	312,067	
Inuit MIEG %	25.0	
Inuit MIEG Hours	595,248	
Lost Hours = MIEG – Inuit Total	283,181	
Hourly Wage $	26.50	59,625 p.a.
Lost Wage Benefits = Lost Hours x Hourly Wage $	7,504,288	

Hourly average Inuit wage calculated from data in Jason Prno Consulting Services Ltd (2018, p. 48), where total Inuit payroll is given as $8.3m.

Repeating the exercise for employment lost by contractors not meeting the 25% Inuit share of employment would increase these wage bill losses, but no data is available on hours of total and Inuit employment, so this calculation cannot be made.

Another possible way of looking at losses of benefits is to say that Baffinland should be able to equal the Agnico Eagle accomplishment of Inuit accounting for 29% of hours worked. This would raise the lost wage benefits to just over $10m.

Thus, the recommendation here is that consideration be given to putting a monetary value on lost benefits, and claiming these or a portion of them as compensation to be put into an economic development fund to help reduce reliance on non-renewable resource activities.

C. Looking Forward: Long Term

It is acknowledged that the company will try to reach the 12 MT/a output level as speedily as possible, moving more quickly than regional Inuit can be trained or encouraged to join the labour force and more rapidly than Inuit companies can expand. If this were to be allowed to happen the benefits to Inuit would be minimal, being limited to whatever level of employment and contracting was possible together with royalty payments and, less directly, taxation. Under present project operations Inuit are foregoing benefits in training, employment, and company sales due to poor corporate performance. A bigger project, such as Phase 2, will not necessarily result in improved benefits to Inuit in these areas. Much greater effort needs to be made by the company to raise the absorptive capacity of the regional Inuit communities. Until the project has maximized Inuit participation (employment, training, and contracting) in the Early Revenue Phase (revised to 6 MT/a) then it is not sensible to expect Phase 2 to result in a proportionate increase in benefits to Inuit.

The demand for labour at Mary River is expected to rise from 933 in 2016 to 2,410 in 2021. As Phase 2 proceeds, capital projects (railways and ports) will raise labour demand to over 3,600 in 2022 and 2024, steadying at 1,960 per annum between 2015 and the end of the life of the mine in 2035, as annual output reaches 30 MT. Total labour demand over the whole period is estimated at almost 40,000 full-time-equivalent jobs (FTEs). Labour supply is not expected to come close to labour demand. Only about 2,200 Inuit at the most are expected to be available for the labour force, but few are expected to qualify for the 46% of the jobs that are Level B and higher occupations, jobs that usually require apprenticeship training or college/university education (Impact Economics, 2018, p. 9). Many will find it difficult to qualify for the 43% of jobs which will be Level C occupations, which usually require secondary school and/or occupation-specific training. Only 11% of the jobs are unskilled, requiring only on-the-job training. But even then, the demand for the available Inuit labour will be large, as the public sector and other elements of the private sector will all be competing for it, and fly-in jobs will not necessarily rank highly for many Inuit. And there are also many other reasons why Inuit may not end up working in the mine, such as lack of interest or aptitude, family responsibilities, criminal records, language difficulties, and family dependencies (Impact Economics, 2018, pp. i–iii). These factors could reduce the available Inuit labour supply to less than 1,000 (Baffinland, 2018d, p. 46). Labour market analysis has concluded, therefore, that "there are not enough available, interested, and qualified Inuit to fill all the jobs created by the Project, and that coordinated efforts by all interested parties will be necessary to maximize Inuit employment" (Impact Economics, 2018, Summary).

Table K. Actual and Potential Inuit Benefits per Tonne of Ore Produced

Year	Million Tonnes	Price per Tonne C$	Revenue C$m	Inuit Wages C$m	Inuit Wages per Tonne	Inuit Wages % of Revenue
2016	3.0	66.0	198.0	7.841	2.614	4.0
2017	4.5	92.0	414.0	8.314	1.848	2.0
2019	6.0	81.3	488.0	9.759	1.627	2.0
2021	9.0	80.4	723.2	13.018	1.446	1.8
2022	12.0	80.4	964.3	16.393	1.366	1.7

Table K outlines the actual and potential benefits to Inuit per tonne of ore. It shows that between 2016 and 2017 Inuit wages per tonne fell significantly, by 30%, while the share of Inuit wages in the estimated total revenue of Baffinland fell by 50%. If one assumes the ore prices going forward are as estimated in Table B and that wages remain at 2.0% of revenue in 2019 and (consistent with the logic of economies of scale) fall as a percentage as output expands, then while the total Inuit wage bill might more or less double between 2017 and 2022, Inuit wages per tonne of output would fall from $2.6 per tonne to only $1.4 per tonne. Thus, as output expands, benefits per tonne fall. The real question, though, is whether there is scope to more or less double Inuit employment over the next five years. If not, the gap between the MIEG and actual Inuit employment will simply grow. If Inuit employment cannot grow that fast, then Inuit leadership would be well served to advocate for slower increases in output and/or to resort to additional compensation approaches to account for the lost benefits associated with long-term underemployment in a non-renewable industry connected to an Inuit-owned resource.

Our estimate of likely Inuit wages does not correspond with the numbers in Table L. In the absence of actual forecasts, here is a more likely scenario.

Table L. Inuit Wages Relative to Total Wages

Year	Inuit as % of Total Wages	Inuit Total Wages '000	Total Wages '000	Total Wages as % of Revenue
2016	16.7	7,841	46,952	23.7
2017	12.5	8,314	66,512	16.1
2019	13.5	9,759	72,289	14.8
2021	17.5	13,018	74,388	10.3
2022	20.0	16,393	81,964	8.5

As the total wage bill increases rapidly, Inuit wages grow as a percentage, but not as rapidly as assumed in Table L. Nevertheless, in this model, the Inuit labour force virtually doubles

between 2017 and 2022 with wages growing to $16.4m, which does not seem achievable. By implication, meeting the 25% minimum employment target seems equally unachievable in the context of rapidly rising total employment, while the longer-term target of 50% seems to be a pipe dream. This demonstrates the weakness of relying on MIEGs in conditions of rapid output growth and the need to set targets realistically. It might also suggest that financial compensation mechanisms should accompany MIEGs. Thus, if the 25% target cannot be reached in 2022 because of the rapid growth in Inuit employment as a whole that it implicitly assumes, then compensation could be claimed for the shortfall. For example, if Inuit employment could reach only 17.5% of (rapidly growing) employment, then compensation could be claimed for the shortfall or for the difference between actual employment and the target employment of the MIEG of 25%. That would amount to $7.5m in 2022. If the Kivalliq share of 29% was used, this would amount to $10.7m in 2022. At the same time, Inuit employment would still have grown by 57% (ignoring wage increases) between 2017 and 2021.

The amount of "lost wages" climbs rapidly if the 50% target is used as the goal and a lower Inuit employment percentage is assumed. Thus, if with rapidly growing total employment, Inuit employment does not exceed 10% of total employment, and average Inuit wages remain at about $60,000 per annum, then "lost wages" would amount to over $1b, which is a staggering amount.

16. Implications for the Environment of 30 MT/a Output and Two Sea Outlets

Baffinland's goal is not, however, to restrict output increases to 12 MT/a. Ultimately the company aims to reach an output target of 30 MT/a. Environmental approval was gained in 2012 for the Steensby port outlet for 18 MT/a of production. However, the environmental concerns raised about the company raising output from 4.0 MT/a to 6.0 MT/a in the Early Revenue Phase suggest that moving to a much larger total will not find an easy passage, and especially if crucial parts of the IIBA are not being met.

Discussion of environmental impacts of both the existing operation and proposed expansion of the Mary River Project and the related social and economic costs is beyond the scope of this paper.

The geophysical and biological realities of the Arctic marine environment are such that this ecosystem is uniquely vulnerable to the impacts of large-scale development such as the Mary River Project. The levels of scientific uncertainty are high; at present, there is insufficient data to effectively assess the degree of risk and extent of hazard associated with expanded mining activities. Most notably, there is no precedent for intensive shipping in the region. Potential effects on marine biota – in particular, cetaceans – are poorly understood to the point of being essentially speculative in nature.

This is not an issue that can be addressed rapidly or with piecemeal efforts. The longitudinal requirements of the research needed to overcome these uncertainties mandates a time frame of many years (if not decades) of committed investigation before evidence-based conclusions can be reached with reasonable scientific support.

Questions of environmental impacts become additionally complex when considering the cumulative effects of the project, the anticipated increase in Arctic resource development and shipping, and climate change. Many predictions of change over the next decades suggest that there will be enormous strain on the resiliency of an already fragile environment. Accordingly, the process of attempting to predict impacts of the project is presented not only with the uncertainties of very limited baseline data, but also the complexities of a rapidly changing environment. In such dynamic conditions, attempting to extrapolate future effects of the project based on present circumstances will result in wide margins of error.

With such uncertainty, it is difficult to fully anticipate the Mary River Project's actual costs to regional Inuit. The likelihood of disruption to traditional activities and associated economic damage is not insignificant. Furthermore, in a changing environment and climate where resilience is already compromised, it is entirely possible that environmental impacts of the project may be irreversible on any time scale meaningful to the Arctic communities.

17. Conclusion and a Recommended Way Forward

The mineral deposits at Mary River were selected by Inuit negotiators during the settlement of the Nunavut Land Claim Agreement for their revenue potential (McPherson, 2003). This revenue potential was and is intended to result in benefits flowing to Inuit beneficiaries of this Agreement. Under the present royalty and benefits regime, and in the context of a non-renewable resource that could be exhausted in less than a generation, Inuit stand to lose significant revenue by too rapid and too great an expansion of this mining operation.

Baffinland's Mary River iron ore mine has brought income, employment, and training benefits to the Inuit of the Qikiqtani Region. These benefits have fallen short of the intentions and targets underlying the IIBA and, in many cases, below the benefits which four other mines studied have brought to the Indigenous People involved. QIA believes the company can and should do better and there are indications that the company agrees. For example, in 2017 it stepped up its training expenditures significantly and took steps to encourage more Inuit apprentices. In 2018, the company renegotiated the IIBA and especially strengthened its commitment to training. To prevent the loss of further potential benefits to Inuit, the various targets under the IIBA need to be spelled out more broadly and more precisely, bringing them to perhaps 10 specific targets. These could be used to regulate the expansion of production by the company, so that meeting all or a number of them would become a condition for expansion. Alternatively, lost benefits from not meeting targets could be calculated and full or partial compensation could be paid by the company, which would then be used to develop both modern and traditional sector alternatives to the resource extraction economy.

Finally, we can expect a multinational mining company to press for the broad expansion of its output to achieve greater economies of scale and maximize profits. This is of course the case even if such a mine is profitable at present volumes. It is ultimately then up to resource owners and regulators to strike a reasonable balance between the profit expectations of industry and the need to maximize socio-economic benefits and minimize socio-economic and environmental harm for the impacted region.

Bibliography

Agnico Eagle Mines and Kivalliq Inuit Association. 2011. Meadowbank Mine Inuit Impact and Benefit Agreement Between Agnico Eagle Mines Limited /Mines Agnico Eagle Limitée and Kivalliq Inuit Association, 2011. http://www.miningnorth.com/wp-content/uploads/2011/11/MEADOWBANK-IIBA.pdf

Agnico Eagle. 2018a. Meliadine. https://www.agnicoeagle.com/English/operations-and-development-projects/development-projects/meliadine/default.aspx

Agnico Eagle. 2018b. Amaruq. https://www.agnicoeagle.com/English/operations-and-development-projects/development-projects/amaruq/default.aspx

Altman, J., and Martin, D. 2009. *Power, Culture, Economy: Indigenous Australians and Mining*. Canberra: ANU Press. https://doi.org/10.26530/OAPEN_459470

Ancelor Mittal. 2017. *Annual Report*. https://corporate.arcelormittal.com/~/media/Files/A/ArcelorMittal/investors/annual-reports/2017/2017-annual-report.pdf

Baffinland. 2011. *Mary River, Baffin Island, Canada, Mary River Iron Ore Trucking*. NI 43-101 Technical Report, Prepared by AMEC Americas Ltd.

Baffinland. 2016. *Baffinland Iron Mines 2016 Annual Report to the Nunavut Impact Review Board*. March 31. http://nunavutsemc.com/wp-content/uploads/2017/11/2016-NIRB-Annual-Report-for-the-Mary-River-Project.pdf

Baffinland. 2018a. *Popular Summary*. http://www.baffinland.com/downloadocs/mary-river-popular-summaryproof4cm_2018-15-04-35.pdf

Baffinland. 2018b. Technical Support Document, No. 1. Mary River Project Phase 2 Proposal. FEIS Addendum, Alternative Analyses. August.

Baffinland. 2018c. *Inuit Impact and Benefit Agreement*. http://www.baffinland.com/inuit-impact-and-benefit-agreement/?lang=en

Baffinland. 2018d. Technical Support Document, No. 25. Mary River Project Phase 2 Proposal. FEIS Addendum, Socio-Economic Assessment. August.

Baffinland. 2018e. Technical Support Document, No. 26. Mary River Project Phase 2 Proposal. FEIS Addendum, Labour Market Analysis. August.

Barclay, M. A., J. Parmenter, and R, Barnes. 2014. The Guide to Good Practices in Indigenous Employment, Training & Enterprise Development (IETED). CSRM.

Bell, Jim. 2017. QIA to push hard for Inuit employment at Mary River. *Nunatsiaq News*, May 9. http://nunatsiaq.com/stories/article/65674qia_to_push_hard_on_inuit_employment_at_mary_river/

Bell, Jim. 2018. Baffinland railway may be "dead," Pond Inlet group declares. *Nunatsiaq News*, January 8. http://nunatsiaq.com/stories/article/65674baffinland_railway_may_be_dead_pond_inlet_group_declares/

Bernauer, Warren. 2018. The limits to extraction: Mining and colonialism in Nunavut. Draft paper to be published.

Bernauer, W., and J. Hicks. 2018. The elephant in the corner: Trauma and socio-economic impact assessment in Nunavut. Unpublished draft paper.

Brody, H. 1975. *The People's Land*. Toronto: Douglas and McIntyre.

Buckley, Tim. 2015. ArcelorMittal: Proposed 18Mtpa development of Baffinland Iron Mines Corp, a Canadian Joint Venture: A Stranded Asset? Energy Finance Studies, October.

Canada. 2009. Evaluation of the Innu, Inuit and Métis Human Resources Development Strategy for the Voisey's Bay Project. April 2009. https://www.canada.ca/en/employment-social-development/corporate/reports/evaluations/skills-and-employment-2009-april.html

Canada Without Poverty. 2016 . *Nunavut Poverty Progress Profile*. Ottawa. https://www.cwp-csp.ca/resources/sites/default/files/resources/Nunavut-%20PPP%202016.pdf

Coppes, Mieke. 2018. Inuit impact and benefit agreements (Part I): What are they? http://polarconnection.org/inuit-impact-benefits-agreementsi/

Cox, D., and S. Mills. 2015. Gendering environmental assessment: Women's participation and employment outcomes at Voisey's Bay. *Arctic*, 71(4): 246–60.

Crawford, Alison, and Jack Hicks. 2018. Early childhood adversity as a key mechanism through which colonialism in mediated into suicidal behaviour. *Northern Public Affairs*, 5(3): 18–22.

Creagh, B. 2017. How mining supports Indigenous Australians. https://www.australianmining.com.au/features/mining-supports-indigenous-australians/

Ducharme, Steve. 2017. Tribunal rules Inuit org should receive back pay from iron mine. *Nunatsiaq News*, July 7. http://nunatsiaq.com/stories/article/65674tribunal_rules_inuit_org_should_receive_back_pay_from_iron_miner/

Dylan, Daniel W. 2017. The complicated intersection of politics, administrative and constitutional law in Nunavut's environmental assessment regime. *University of New Brunswick Law Journal*, 68: 202–31.https://commentary.canlii.org/w/canlii/2017CanLIIDocs175-en#!fragment/zoupio

Employment and Social Development Canada. 2013. Evaluation of the Innu, Inuit and Métis Human Resources Development Strategy for the Voisey's Bay Project – April 2009 [policies]. https://www.canada.ca/en/employment-socialdevelopment/corporate/reports/evaluations/skills-and-employment-2009-april.html#h6

Fednav. 2008. Baffinland announces exceedingly robust economics for the Mary River Direct-Shipping Iron Ore Project. February 19. http://www.fednav.com/fr/baffinland-announces-exceedingly-robust-economics-mary-river-direct-shipping-iron-ore-project

Fiscal Realities Economists. 2016. *Reconciliation: Growing Canada's Economy by $27.7 Billion*. Background Methods Paper. Prepared for the National Aboriginal Economic Development Board, November. Gatineau, Quebec.

Fisheries and Oceans Canada. 2011. *Technical Review of Baffinland's Mary River Project Draft Environmental Impact Statement (EIS)*. Canadian Science Advisory Secretariat Science Advisory Report 2011/065. http://waves-vagues.dfo-mpo.gc.ca/Library/346307.pdf

Food Matters Manitoba. 2013. Traditional Food Initiative Planning and Resources Development Project. Winnipeg.

George, Jane. 2011. Agnico Eagle Mines aims to increase Inuit workforce. *Nunatsiaq News*, November 11. http://nunatsiaq.com/stories/article/65674agnicoeagle_mining_aims_to_up_Inuit_workforce/

Government of the Northwest Territories. 2013. 2013 Annual Report of the Government of the Northwest Territories under the BHP Billiton, Diavik and De Beers Socio-Economic Agreements. http://www.assembly.gov.nt.ca/sites/default/files/td74-175.pdf

Gregoire, Lisa. 2016 . Nunavut iron mine proposes bigger ships, no spring ice-breaking. *Nunatsiaq News*, December 2. http://nunatsiaq.com/stories/article/65674nunavut_iron_mine_proposes_bigger_ships_no_spring_ice-breaking/

Harvey, B., and S. Nish. 2005. Rio Tinto and Indigenous community agreement making in Australia. *Journal of Energy & Natural Resources Law*, 23(4): 499–510. https://doi.org/10.1080/02646811.2005.11433417

Hicks, Jack. 2015. Statistical data on death by suicide by Nunavut Inuit, 1920 to 2014. Prepared for Nunavut Tunngavik Inc., September. https://www.tunngavik.com/files/2015/09/2015-09-14-Statistical-Historical-Suicide-Date-Eng.pdf

Hunter, B., M. Howlett, and M. Gray. 2015. The economic impact of the mining boom on Indigenous and non-Indigenous Australians. *Asia & the Pacific Policy Studies*, 2(3): 517–30. https://doi.org/10.1002/app5.99

Impact Economics. 2018. Baffinland Iron Mines Corporation: Mary River project – Phase 2 Proposal. Labour market Analysis. Technical Supporting Document No. 26. August.

International Women in Mining. 2017. Meet Samantah Wood – Mining production supervisor. https://internationalwim.org/meet-samantah-wood-mining-production-supervisor/

Inuit Tapiriit Kanatami (ITK). (2016). *National Inuit Suicide Prevention Strategy*. Ottawa: Inuit Tapiriit Kanatami.

Jason Prno Consulting Services Ltd. 2017. *2016 Socio- Economic Monitoring Report for the Mary River Project*. March. http://www.miningnorth.com/_rsc/site-content/library/publications/Mary%20River%20%202016%20Socio%20Economic%20Monitoring%20Report.pdf

Jason Prno Consulting Services Ltd. 2018. *2017 Socio- Economic Monitoring Report for the Mary River Project*. March. http://www.miningnorth.com/_rsc/site-content/library/publications/2018-04-01_Baffinland_2017_Socio-Economic_Report_Final.pdf

Kamal, Gulrukh Asfia, Mariah Mailman, Shirley Thompson, and Uche Nwankwo. n.d. Eating healthy in Nelson House, Manitoba: Country food program is improving food security. Natural Resource

Institute, University of Manitoba. http://home.cc.umanitoba.ca/~thompso4/Poster_NELSON_HOUSE_7.ppt.pdf

Labrador Inuit Association. 1997. Labrador Inuit Association perspective. http://arcticcircle.uconn.edu/SEEJ/voisey/inuit.html

LeBlanc, Dominic, and Carolyn Bennett. 2018. Letter to the Chair of NIRB. September 30. Ministry of Intergovernmental and Northern Affairs and Internal Trade. https://qia.ca/wp-content/uploads/2018/10/181001-08MN053-Ministers-Approval-Re-Production-Increase-IA2E.pdf

LeTourneau, Michele. 2018. Inuit, Baffinland at odds over proposed railway. *Nunavut News*, January 8. http://nunavutnews.com/nunavut-news/inuit-baffinland-odds-proposed-railway/

Loxley, John. 2010. *Aboriginal, Northern and Community Economic Development*. Arbeiter Ring Publishing, Winnipeg.

Loxley, John. 2012. Alternative approaches to hydro compensation and agreements with First Nations: Manitoba and Quebec. *Journal of Aboriginal Economic Development*, 8 (1), 21–31.

McCreary, T., S. Mills, and A. St-Amand. 2016. Lands and resources for jobs: How Aboriginal Peoples strategically use environmental assessments to advance community employment aims. *Canadian Public Policy*, 42(2), 212–23.

McPherson, Robert. 2003. *New Owners in Their Own Lands – Minerals and Inuit Land Claims*. Calgary: University of Calgary Press.

Mills, S. E. 2011. Beyond the blue and Green: The need to consider Aboriginal Peoples' relationships to resource development in labor-environment campaigns. *Labor Studies Journal*, 36(1), 104–21. https://doi.org/10.1177/0160449X10392527

Minerals Council of Australia. 2018. Indigenous economic development. http://www.minerals.org.au/leading_practice/indigenous_economic_development

National Aboriginal Health Organization. 2008. *Resource Extraction and Aboriginal Communities in Northern Canada: Gender Considerations*. Ottawa: National Aboriginal Health Organization. https://ruor.uottawa.ca/bitstream/10393/30625/1/Gender_EN.pdf

Natural Resources Canada. 2014. Diavik Diamond Mine – Northwest Territories. http://www.nrcan.gc.ca/miningmaterials/publications/aboriginal/bulletin/8816

Newfoundland and Labrador et al. 2002. Voisey's Bay Development Agreement among Her Majesty the Queen in Right of Newfoundland and Labrador and Voisey's Bay Nickel Company Limited and Inco Limited. September 30. http://www.nr.gov.nl.ca/nr/royalties/legal.pdf

Newfoundland and Labrador. 2005. Newfoundland and Labrador Regulation, 62/05. http://www.assembly.nl.ca/legislation/sr/annualregs/2005/Nr050062.htm

NewsComAu. 2011. Rio Tinto pays traditional landowners billions to expand Pilbara mining operations. https://www.adelaidenow.com.au/business/rio-tinto-pays-traditional-landowners-billions-to-expand-pilbara-mining-operations/news-story/1d5e14319acb2c8380fdffeafd13aefc?sv=dec0e44d0e0031feea74d547616d1767

Northwest Territories. 2014 . ŁutselK'e Statistical Profile. https://www.statsnwt.ca/community-data/Profile-PDF/Lutselke.pdf

Nunatsiaq News. 2017. Nunavut Inuit org signs benefits bonanza with gold miner. June 16. http://nunatsiaq.com/stories/article/65674nunavut_inuit_org_signs_benefits_bonanza_with_agnico_eagle_gold_mine/

Nunavut. 2018a. Social data. Department of Executive and Intergovernmental Affairs. https://www.gov.nu.ca/eia/information/social-data

Nunavut. 2018b. Population data. Department of Executive and Intergovernmental Affairs. https://www.gov.nu.ca/eia/information/population-data

Nunavut. 2018c. Nunavut Fact Sheets: Baker Lake – Qamani'tuaq and Pond Inlet – Mittimatalik. Nunavut Bureau of Statistics. http://stats.gov.nu.ca/Publications/facts/Communities%20Fact%20Sheets,%20February%202018_Revised.pdf

Nunavut. 2018d. Labour force and employment data. https://www.gov.nu.ca/eia/information/labour-force-and-employment-data

Sivummut Economic Development Strategy Group. 2003. *Nunavut Economic Development Strategy*. http://www.nunavuteconomicforum.ca/public/files/strategy/NUNAVUTE.PDF

Nunavut Impact Review Board (NIRB). 2014. *Annual Report 2013–14*. http://www.nirb.ca/sites/default/files/NIRB_2013-14AR_ENG.pdf

Nunavut Impact Review Board (NIRB). 2018a. *Reconsideration Report and Recommendations: Production Increase Proposal Baffinland Iron Mine Corporation*. NIRB File No. 08MN053. August 31. https://www.google.com/search?q=%E2%80%9CProduction+Increase%2C+Fuel+Storage+and+Milne+Port+AccommodationsModification+Proposal%E2%80%9D&ie=utf-8&oe=utf-8&client=firefox-b-ab

Nunavut Impact Review Board (NIRB). 2018b. Nunavut Impact Review Board issues reconsideration report and recommendations for Baffinland Iron Mines Corporation's "Production Increase Proposal" for the Mary River Project. August 31.

Nunavut Land Claims Agreement (Nunavut Agreement). 1993. Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty in Right of Canada. Ottawa. https://www.gov.nu.ca/sites/default/files/Nunavut_Land_Claims_Agreement.pdf

Nunavut Tunngavik Inc. 2014. Annual Report on the State of Inuit Culture and Society: Examining the Justice System in Nunavut. Iqaluit: Nunavut Tunngavik Inc.

NWT and Nunavut Chamber of Mines. 2017. *Measuring Success 1996–2016: Diamond Mines Deliver Big Benefits to the Northwest Territories*. November. http://www.miningnorth.com/_rsc/site-content/library/publications/NWT-Nunavut_Chamber_of_Mines_Measuring_Success_2016_FINAL.pdf

O'Faircheallaigh, C. 2010. Aboriginal-mining company contractual agreements in Australia and Canada: Implications for political autonomy and community development. *Canadian Journal of Development*

Studies / Revue Canadienne d'études Du Développement, 30(1–2), 6986. https://doi.org/10.1080/02255189.2010.9669282

O'Faircheallaigh, C. 2016. Negotiations in the Indigenous World: Aboriginal People and the Extractive Industry in Australia and Canada. New York and London: Routledge.

Pauktuutit Inuit Women of Canada. 2016. *Strategic Plan for Inuit Violence Prevention and Healing*. Ottawa: Pauktuutit Inuit Women of Canada.

QIA. 2013. *The Mary River Project: Inuit Impact and Benefit Agreement, between QIA and Baffinland.* http://ccsi.columbia.edu/files/2015/01/mary_river_inuit_impact_and_benefit_agreement.pdf

QIA. 2017. *Mary River Project Inuit Impact and Benefit Agreement: Three Year Review, 2013–2016.* http://qia.ca/wp-content/uploads/2017/06/160916-qia-iiba-3yearreview-eng-final-2.pdf

QIA. 2018a. Q-STEP: The Qikiqtani Skills and Training for Employment Partnership. https://qia.ca/programs/q-step-the-qikiqtani-skills-and-training-for-employment-partnership/

QIA. 2018b. NPC decision on Baffinland's Phase II Project. March 20. http://qia.ca/npc-decision-on-baffinlands-phase-ii-project/

QIA. 2018c. QIA and Baffinland announce improvements to Mary River IIBA. October 3. https://qia.ca/qia-baffinland-announce-improvements-to-mary-river-iiba/

QIA. 2018d. What QIA accomplished through the Mary River IIBA renegotiation. October 3. https://qia.ca/what-qia-accomplished-through-the-mary-river-iiba-renegotiation/

QIA. 2018e. QIA pleased with the review process and outcome on Baffinland production increase but expects mining company to deliver on commitments to Inuit. https://qia.ca/qia-pleased-with-review-process-and-outcome-on-baffinland-production-increase-but-expects-mining-company-to-deliver-on-commitments-to-inuit/

Qikiqtani Truth Commission (QTC). 2013a. *Illinniarniq: Schooling in Qikiqtaaluk.* Iqaluit: Qikiqtani Inuit Association.

Qikiqtani Truth Commission. 2013b. *Nuutauniq: Moves in Inuit Life*. Iqaluit: Qikiqtani Inuit Association.

Qikiqtani Truth Commission. 2013c. *Qimmit: Inuit Sled Dogs*. Iqaluit: Qikiqtani Inuit Association.

Qikiqtani Truth Commission. 2013d. *Aaniajurliriniq: Healthcare in Qikiqtaaluk*. Iqaluit: Qikiqtani Inuit Association.

Rasing, W. 2017. Too Many People: Contact, Disorder, Change in an Inuit Society, 1822–2015. Iqaluit: Nunavut Arctic College Media.

Rio Tinto. 2011. *Reconciliation action plan.* http://www.riotinto.com/documents/SoE_EIS_Supplementary_report_Appendix_6_Part_3.pdf

Rio Tinto. 2016. *Why agreements matter*. http://www.riotinto.com/documents/Rio_Tinto_Why_Agreements_Matter.pdf

Rio Tinto. 2017a. *Annual Report, 2017.* https://www.riotinto.com/documents/RT_2017_Annual_Report.pdf

Rio Tinto. 2017b. *2017 Sustainable Development Report*. http://www.riotinto.com/documents/RT_Diavik_2017_SD_report.pdf

Rio Tinto. 2018. Rio Tinto awards major contract to Pilbara Aboriginal business. https://www.riotinto.com/media/media-releases-237_25516.aspx

Rio Tinto. n.d. About Diavik. http://www.riotinto.com/canada/diavik/about-diavik-11458.aspx

Skura, Elyse. 2016a. Baffinland proposes changing Mary River project's shipping road to a railway. *CBC News*, February 18. http://nunatsiaq.com/stories/article/65674baffinland_railway_may_be_dead_pond_inlet_group_declares/

Skura, Elyse. 2016b. Baffinland not meeting Inuit employment goals at Mary River: QIA. *CBC News*, October 12. http://www.cbc.ca/news/canada/north/baffinland-qia-mary-river-review-1.3800652

Statistics Canada. 2017. Consumer price index. CANSIM Table 3260020.

Stratos. 2017. Meadowbank Gold Mine: 2016 Socio-Economic Monitoring Report. Ottawa: Stratos Inc.

Taylor, J., and B. Scambary. 2005. Indigenous People and the Pilbara Mining Boom: A Baseline for Regional Participation. Canberra: ANU E Press.

Tester, Frank James, and Peter Kulchyski. 1994. *Tammarniit/Mistakes*. Vancouver: UBC Press.

UNDP. 2015, 2017. Human Development Report, 2015, 2017. http://hdr.undp.org/sites/default/files/2015_human_development_report.pdf and http://hdr.undp.org/en/data

Vale. n.d. Voisey's Bay. http://www.vale.com/canada/EN/aboutvale/communities/voiseysbay/Pages/default.aspx

Watkins, M. H., ed. 1977. *Dene Nation: The Colony Within*. Toronto: University of Toronto Press.

Appendix 1. Nunavut Institutions and Their Functions

Qikiqtani Inuit Association (QIA): The Qikiqtani Inuit Association (QIA) is a not-for-profit society representing approximately 14,000 Inuit in the Qikiqtani (Baffin) Region of Nunavut, which includes 13 communities from Grise Fiord in the High Arctic down to Sanikiluaq (Belcher Island). QIA is considered a Designated Inuit Organization (DIO) responsible for managing Inuit-owned Lands in the Qikiqtani Region. You can find more information here: http://qia.ca/about-us/

Nunavut Planning Commission (NPC): The Nunavut Planning Commission is an Institution of Public Government established as an independent public agency with its roles and responsibilities set out under the Nunavut Agreement (NA), Article 11, Land Use Planning. The NPC consults with government, Inuit organizations, and many other organizations, but it is the Commission's responsibility to make the final decisions on how land use plans will be developed and how these plans will manage the land in Nunavut. Once these decisions are made the plans are sent to government for approval. You can find more information here: http://www.nunavut.ca/en/about-commission

North Baffin Regional Land Use Plan: The North Baffin Regional Land Use Plan was approved in June 2000. It provides strategic direction for land and resource use in the North Baffin Planning Region. This link contains the complete up-to-date copy of the plan: http://www.nunavut.ca/en/approved_plans/north_baffin or you can access the PDF version directly from here: http://www.nunavut.ca/files/North%20Baffin%20Regional%20Land%20Use%20Plan.pdf

Nunavut Tunngavik Inc. (NTI): Nunavut Tunngavik Inc. is the organization that represents Inuit under the NLCA. NTI coordinates and manages Inuit responsibilities set out in the Nunavut Agreement and ensures that the federal and territorial governments fulfill their obligations. You can find more information here: http://www.tunngavik.com/about/

Nunavut Impact Review Board (NIRB): The Nunavut Impact Review Board (NIRB) is an Institution of Public Government created by the Nunavut Agreement to assess the potential impacts of proposed development in the Nunavut Settlement Area prior to approval of the required project authorizations. The NIRB assesses the potential biophysical and socio-economic impact of proposals and will make recommendations and decisions about which projects may proceed. The NIRB may also establish monitoring programs for projects that have been assessed and approved to proceed. You can find more information here: http://www.nirb.ca/mandate-and-mission

Qikiqtaaluk Corporation (QC): **Qikiqtaaluk Corporation** is a wholly Inuit-owned birthright development corporation created by the Qikiqtani Inuit Association (formerly known as the Baffin Region Inuit Association). Created in 1983, QC's purpose is to provide employment and financial opportunities for Inuit in the region. You can find more information here: https://www.qcorp.ca/en/home

Kivalliq Inuit Association (KIA) represents the interests of all Inuit living in the Kivalliq Region, acts as a lobbying group, and administers and monitors certain provisions of the Nunavut Final Agreement in the Kivalliq Region. The KIA mission is to represent, in a fair and democratic manner, Inuit of the Kivalliq Region in the development, protection, administration, and advancement of their rights and benefits, as well as to promote their economic, social, political, and cultural well-being through succeeding generations. You can find more information here: http://www.kivalliqinuit.ca/