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CIRDI Canadian International Resources and Development Institute

Getting a Fair Share: Designing Fiscal Regimes for Impact Benefit Agreements

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Outline

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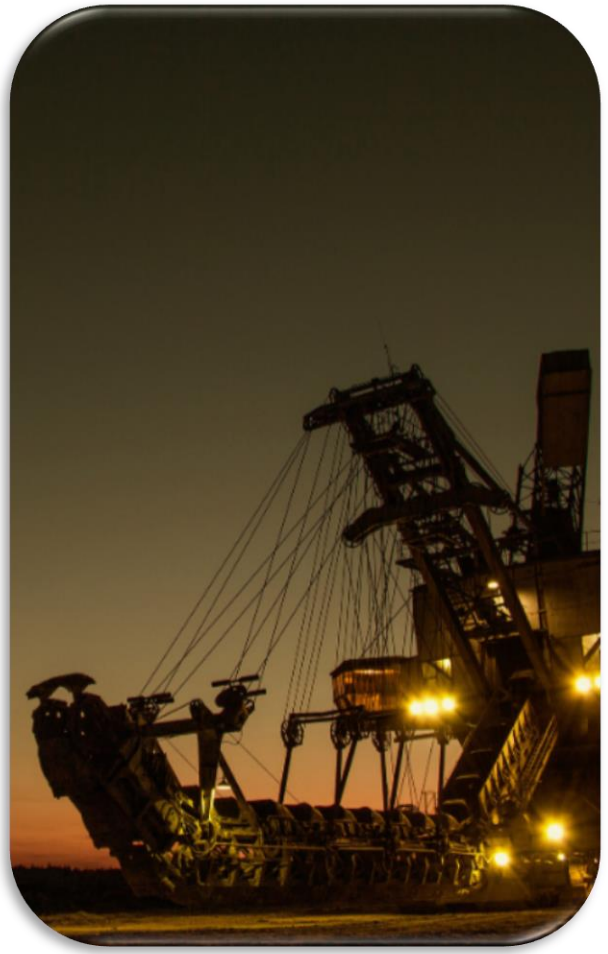
9. Non-revenue benefits
10. Recommendations



I would like to develop a mine near your community. Which option would you choose?

Option 1

- Fixed payments
- $20 million upfront
- $5 mil/year for 4 years during construction
- $250,000 per year for 25 years

Option 2

- A volumetric royalty
  - Copper- $0.04/lb
  - Gold- $16.12/oz

Option 3

- A profit-based royalty
  - Tier 1: 2%
  - Tier 2: 13% (applies once capital costs have been recovered)

Project Rationale

- Impact benefit agreements (IBAs) are contracts between project developers and communities
  - Adverse impact mitigation and community development
- Challenges regarding transparency, accessibility, and fairness of existing IBAs
- Key component of IBAs is the fiscal instruments used to generate community income

Research question: How can IBA fiscal instruments be designed to maximize benefits for communities?

Research objectives:

1. Evaluate revenue-based benefits through alternative fiscal instruments for IBAs
2. Provide a financial model for fiscal instrument evaluation
3. Explore non revenue-based benefits of IBAs
4. Provide guidelines and strategies for designing IBAs
5. Present findings in IBA guidebook

Methodology

- Literature review
- Document analysis of existing IBAs (focused on mining IBAs)
- Developed a financial evaluation model
- Evaluation of alternative fiscal instruments

Alternative Fiscal Instruments

- Production sharing/service contracts
- Joint venture
- Fixed payments
- Cash bonus bidding
- Volumetric royalty
- Ad valorem royalty
- Profit-based royalty (net income and rate of return)
- Property tax/lease fee
- Hybrid fiscal regime (multiple instruments)

Alternative Fiscal Instruments

- Production sharing/service contracts
- **Joint venture**
- **Fixed payments**
- Cash bonus bidding
- **Volumetric royalty**
- **Ad valorem royalty**
- **Profit-based royalty** (net income and **rate of return**)
- Property tax/lease fee
- **Hybrid fiscal regime (multiple instruments)**

Evaluative Criteria for Fiscal Instruments

An optimal IBA will:

1. Maximize revenue generation
2. Maximize administrative efficiency
3. Ensure neutrality of impact on project investment and production decisions
4. Maximize revenue stability for community
5. Provide community decision-making power

Fiscal Instruments Evaluated

Scenario	Fiscal regime description
Fixed payments	• Upfront: $20 million, Construction: $5 million/yr for 4 yrs, Annual: 250,000/ yr for 25 yrs
Ad valorem royalty	• Royalty rate- 1.2%
Volumetric royalty	• Royalty price per volume - Copper- $0.04/lb, Gold- $16.12/oz
Profit-based royalty (rate of return royalty)	• Royalty rates- Tier 1: 2%, Tier 2: 13%. Tier 1 royalty payments are deductible from Tier 2 royalty payments.

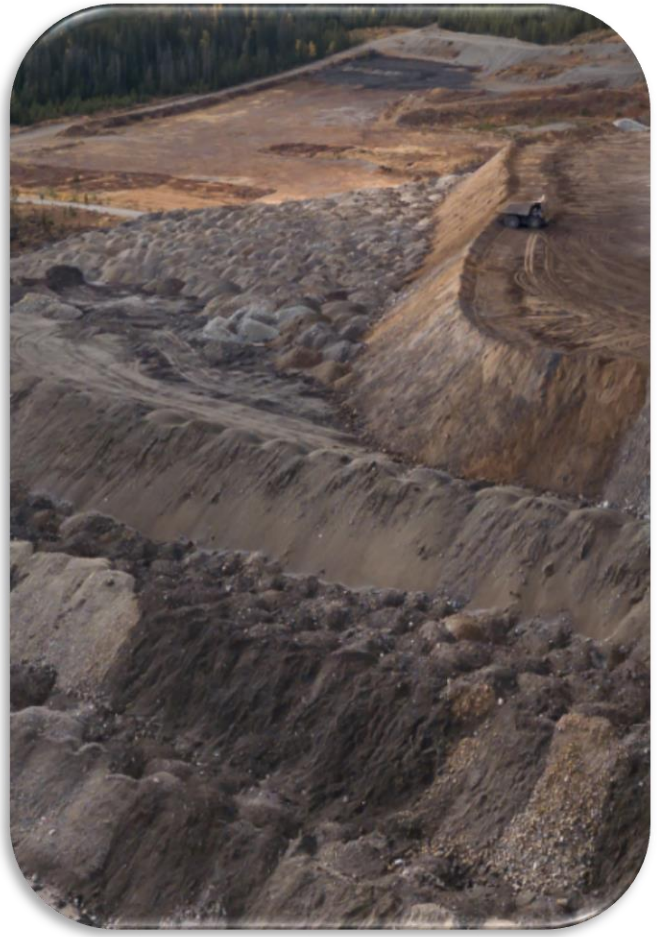
*Fiscal instrument scenario parameters are based on existing fiscal regimes used in mining IBAs

Fiscal Instrument Scenarios Evaluated

Scenario	Fiscal regime description
Hybrid	• Fixed payments- Upfront: $20 million, Construction: $5 million/yr for 4 yrs, Annual: 250,000/ yr for 25 yrs • Ad valorem royalty- 1.2% • Profit-based royalty- Tier 1: 2%, Tier 2: 13%. Tier 1 royalty payments are deductible from Tier 2 royalty payments.
Joint Venture	• 20% community equity (financed by a loan)

Case Assumptions

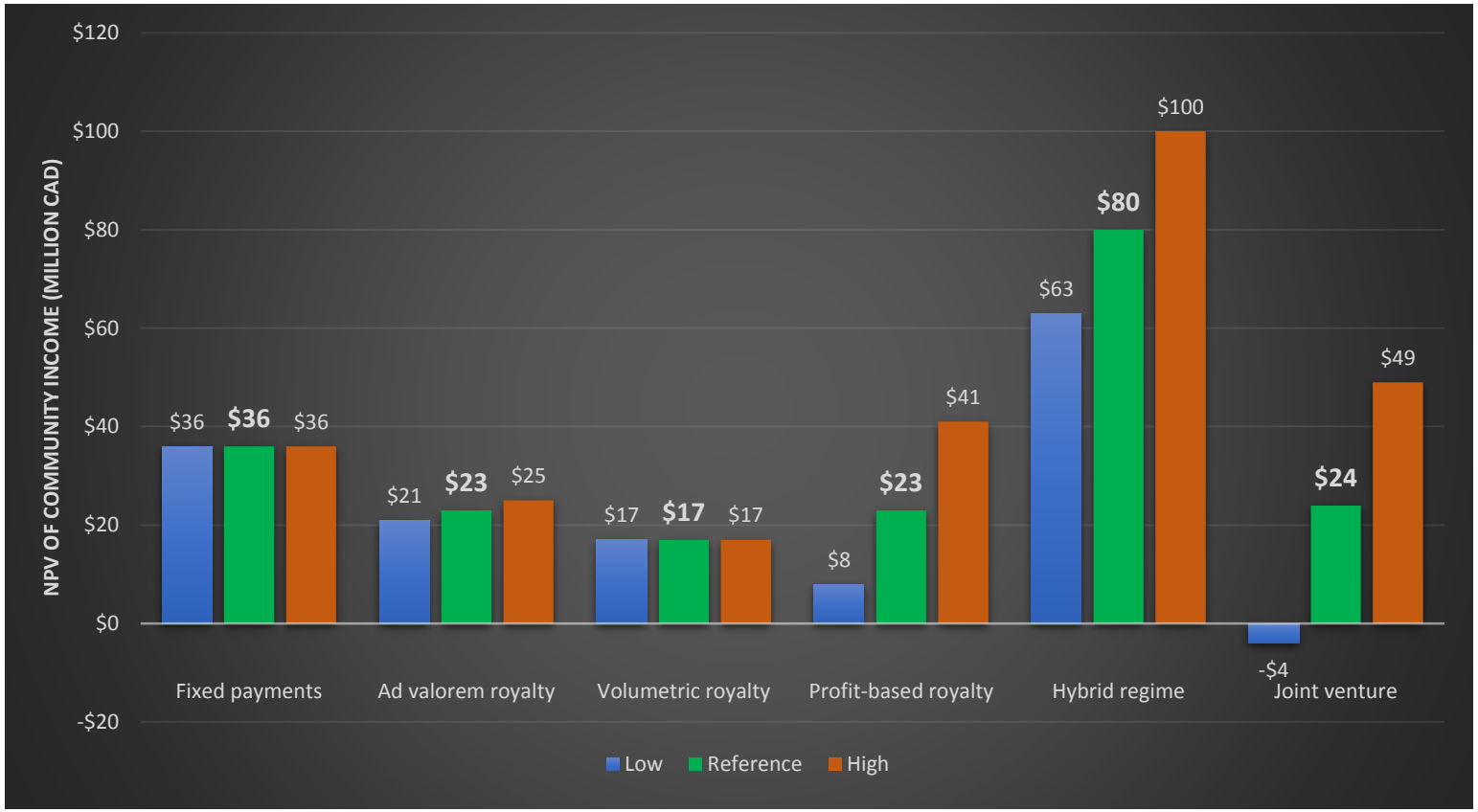
- Representative base metal mine
- Primary metal- copper (75 million lbs per year) secondary metal- gold (33,000 oz per year)
- 4 year construction phase and 25 year operating phase
- Capital (construction) costs- $450 million CAD



Evaluation- Price Scenarios

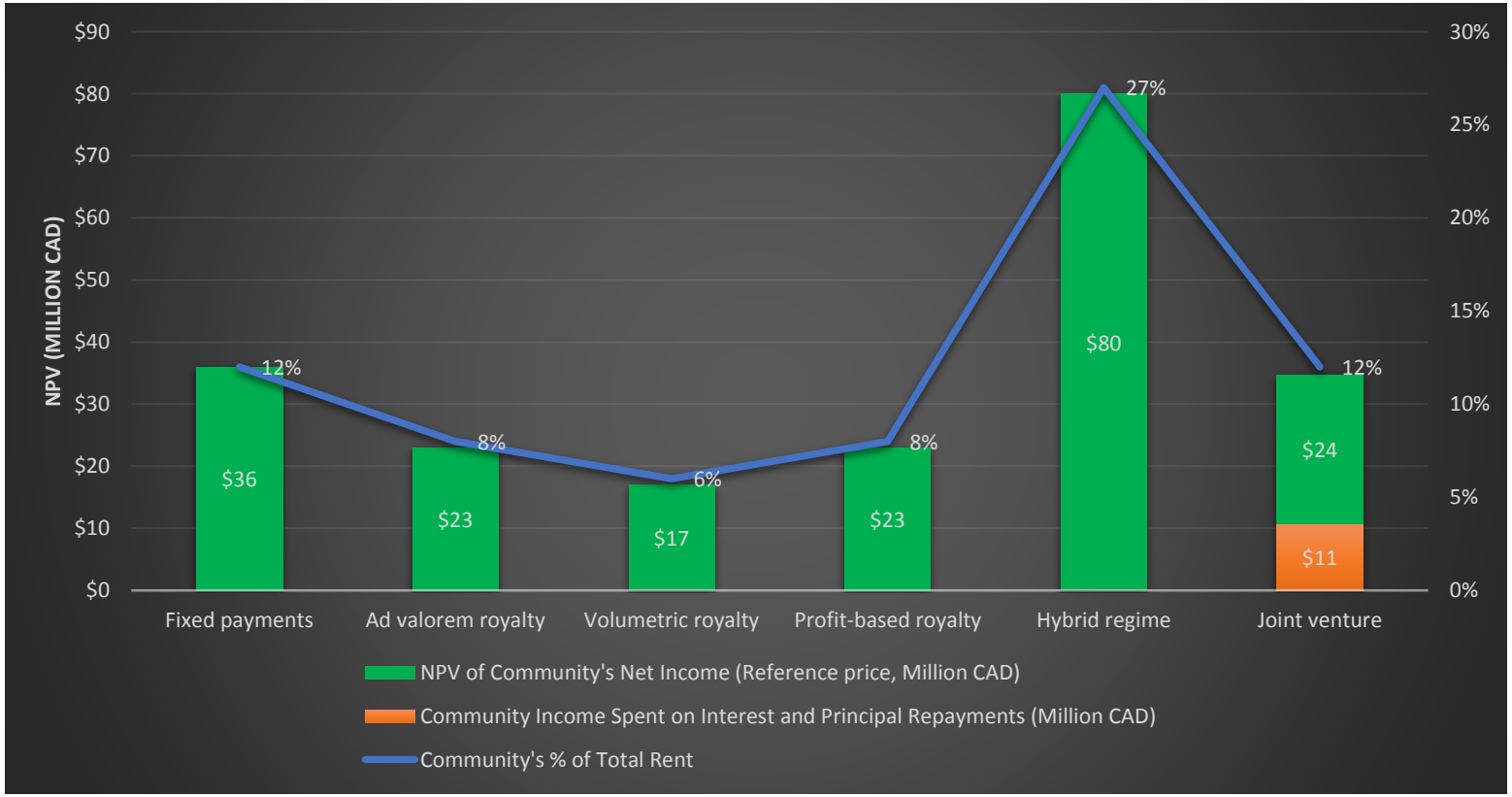
- Future copper and gold prices based on 10 year price cycle of annual year-end prices (2008-2017) converted into 2018 CAD
- 3 price scenarios used for sensitivity analysis:
  - Reference (base case), Low (10% below Reference), and High (10% above Reference)

Evaluation Results- Revenue Generation

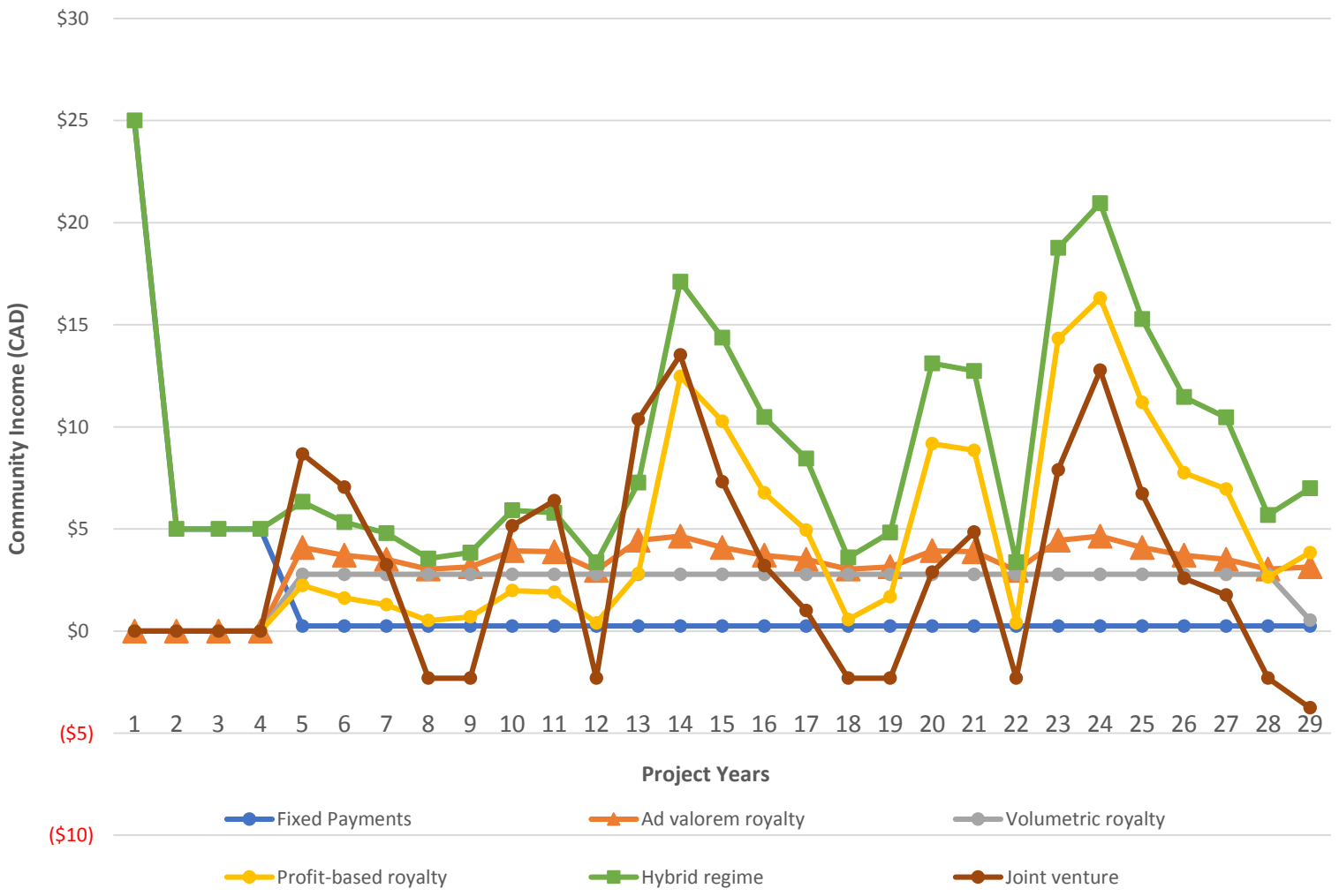


NPV of community income under each fiscal instrument (2018 Can $)

Evaluation Results- Revenue Generation



Community NPV and percentage of total rent under each fiscal instrument



Evaluation Results- Community Income Stability

Evaluation-Summary Table

Our focus

Fiscal Instrument	Evaluation Criteria				
	Revenue Generation	Administrative Efficiency	Neutrality	Stability of Income	Decision-making Power
Production-sharing and Service Contracts					
Joint venture					
Fixed payments					
Cash bonus bidding					
Volumetric royalty					
Ad valorem royalty					
Net income royalty (profit-based)					
Property tax					
Lease fee					
Profit-based					
Hybrid Regime (Fixed payments, ad valorem royalty, and profit-based royalty)					

Performance: High Medium Low

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Option 2

- An ad valorem royalty
  - 1.2% (of gross sales)

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  - Tier 2: 13% (applies once capital costs have been recovered)

Option 4

- Fixed payments
- Ad valorem royalty
- Profit-based royalty

Case Study: how well are Communities doing with IBAs?

Objective:

To evaluate the performance of 10 negotiated IBAs

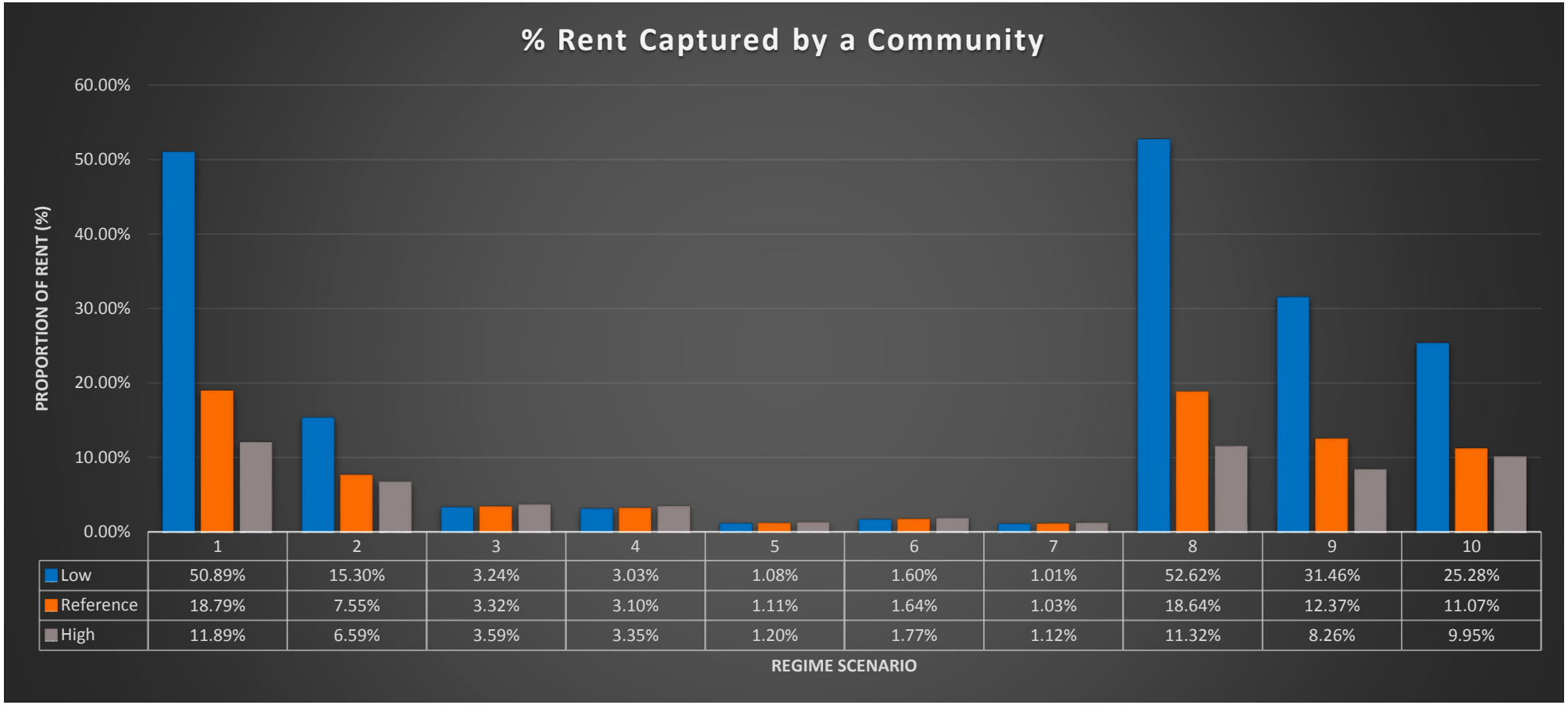
Evaluative Criteria:

1. Maximize revenue generation
2. Maximize revenue stability for community

Regime Scenario	Project name	Location	Fiscal regime description
1	Mary River Mine	Nunavut, Canada	• **Single fixed payments: 1)** $5 million CAD on date IBA is signed, **2)** $5 million CAD within 5 days of project receiving Water License, **3)** $10 million CAD within 5 days of construction decision, **4)** $750,000 CAD single payment • **Multiple fixed payments: 1)** $1.25 million CAD beginning 1 year after construction decision. Payment in each calendar quarter. Payment stops when commercial production begins. **2)** $1 million CAD yearly for the first 2 years of agreement, **3)** $250,000 CAD yearly - staring when the agreement comes into effect and ending when commercial production begins. **4)** $25,000 yearly • **Ad valorem royalty:** 1.19%
2	Raglan Mine	Quebec, Canada	• **Single fixed payments: 1)** $1 million CAD within 30 days of project authorisation, **2)** $1million CAD within 30 days of the start of commercial production • **Multiple fixed payments: 1)** $300,000 CAD Yearly for 5 years. Starts the first year of commercial production. **2)** $500,000 yearly for years 6-10, **3)** $800,000 CAD yearly, from year 11 onwards. **4)** $250,000 CAD yearly. Starts the first year of commercial production. • **Profit-based royalty:** 4.5%
3	New Afton Mine	British Columbia, Canada	• **Profit-based royalty:** 37.5% Paid yearly by a provincial government, as a proportion of B.C. Mineral Tax Revenue
4	Copper Mountain Mine	British Columbia, Canada	• **Profit-based royalty:** 35% Paid yearly by a provincial government, as a proportion of B.C. Mineral Tax Revenue
5	Mount Milligan	British Columbia, Canada	• **Profit-based royalty:** 12.5% Paid yearly by a provincial government, as a proportion of B.C. Mineral Tax Revenue

Regime Scenario	Project name	Location	Fiscal regime description
6	Mount Polley	British Columbia, Canada	• **Profit-based royalty:** 18.5% Paid yearly by a provincial government, as a proportion of B.C. Mineral Tax Revenue
7	Kemess Underground Project	British Columbia, Canada	• **Profit-based royalty:** 11.67% Paid yearly by a provincial government, as a proportion of B.C. Mineral Tax Revenue
8	Oyu Tolgoi	Southern Gobi Desert, Mongolia	• **Multiple fixed payments:** $5 million USD yearly
9	Kainantu Gold Mine	Eastern Highlands, Papua New Guinea	• **Single fixed payments: 1)** $450,000 PNG Kina, **2)** 25,000 PNG Kina Paid when mine construction starts, **3)** 600,000 PNG Kina Paid during mine construction • **Ad valorem royalty:** 1.9%
10	Ramu Nickel Cobalt Project	Madang, Papua New Guinea	• **Single fixed payments:** 1 million PNG Kina • **Multiple fixed payments:** 100,000 PNG Kina yearly. Payment begins when agreement comes into effect, and ends when the first royalty payment is made • **Ad valorem royalty:** 1.3% • **Joint venture:** 5% community equity (free-carried equity)

Evaluation Results - Revenue Generation



	1	2	3	4	5	6	7	8	9	10
Low	50.89%	15.30%	3.24%	3.03%	1.08%	1.60%	1.01%	52.62%	31.46%	25.28%
Reference	18.79%	7.55%	3.32%	3.10%	1.11%	1.64%	1.03%	18.64%	12.37%	11.07%
High	11.89%	6.59%	3.59%	3.35%	1.20%	1.77%	1.12%	11.32%	8.26%	9.95%

Evaluation Results - Revenue Range & Stability

Key Findings

1. Negotiated IBAs seem to collect a small proportion of economic rent generated from mineral development and therefore more aggressive fiscal regimes could be used to collect significantly more revenue for the community while still ensuring the economic viability of the mining project
2. Trade-offs exist between potential community objectives
3. An economic model can be used to estimate project rents and assess the efficacy of a fiscal regime

Non-revenue benefits

- Any benefit that is not generated through a fiscal instrument
- More difficult to quantify than revenue benefits- can often be misunderstood or misrepresented
- Important: What is the distribution of costs and benefits between the community and the developer?

Non-revenue benefits

Non-Monetary Benefits	Description
Employment	Developer commits to hire and train employees from impacted community.
Infrastructure	Developer commits to providing infrastructure for impacted community such as housing, recreational and community facilities.
Environmental Mitigation	Developer commits to specific environmental mitigation measures such as site reclamation, air pollution mitigation, and waste disposal.
Local purchases	Developer commits to purchase goods and services from local suppliers.

Benefit Example Evaluation

Benefits components	Description
Employment	**150 jobs for community residents** • **$100,000 salary (pre-project salary of $50,000)** • **Training paid for by company ($50,000 per employee)**
Infrastructure	$5 million community centre
Environmental Mitigation	$25 million to offset adverse environmental impacts and to redesign tailing ponds to reduce risk of leakage
Local purchases	20% local purchase content equal to $5 million per year. Local purchases are 10% incremental cost to project relative to using non-local suppliers. Local suppliers net incremental cost is 50% of incremental purchase revenue resulting in net benefit of local purchases

Evaluation of Benefit Provisions

Benefit	Cost to Company (million of $)	Benefit to Community (million of $)	Benefit/cost ratio
Monetary Payment	$36	$36	1
Local employment	**$7**	**$68**	**9.7**
Local Purchases	$5	$22	4.5
Infrastructure	$5	$5	1
Environment	$18	$18	1
Total	**$71**	**$148**	**2.1**
Project NPV after benefit costs to company	$229	$229	

Findings

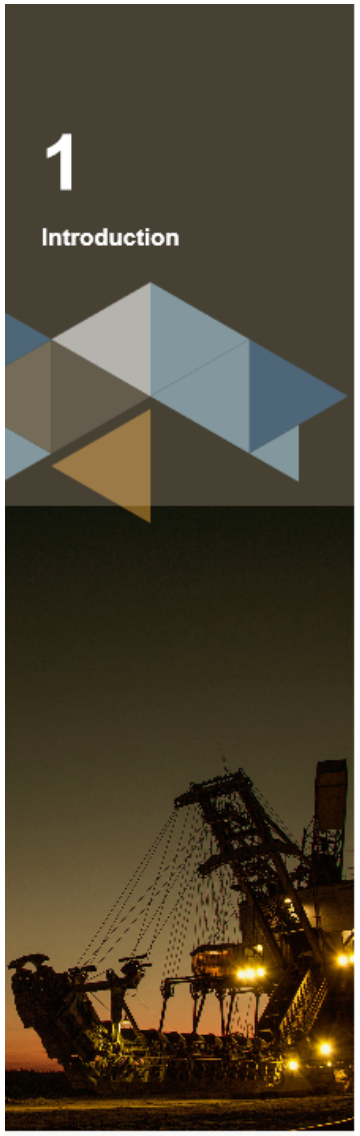
1. Each fiscal tool has strengths and weaknesses
2. Scenarios tested collected between 7% and 27% of rent, leaving a large proportion of rent accruing to project developer
3. There is a trade-off between different objectives/different fiscal tools
   - E.g. fiscal tools that collect more revenue are less administratively efficient-
4. Best approach is a hybrid system that uses a combination of different fiscal instruments
   - But design needs to be tailored to specific project and community objectives

Recommendations for Communities

1. Design fiscal regime based on community objectives
2. Negotiate a precursor agreement
3. Develop and weight community objectives regarding evaluation criteria
4. Evaluate fiscal options relative to community objectives
5. Test alternative fiscal regimes using financial model.

Recommendations for Communities

6. Use modelling results and community objectives to develop ideal fiscal regime
7. Incorporate non-revenue benefit provisions into IBA
8. Finalize and approve the fiscal regime to be incorporated into the IBA
9. Include monitoring and auditing provisions in the IBA to assess the performance of the fiscal regime.
10. Ensure that all aspects of the IBA meet best practice guidelines.



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Introduction

Guidebook Purpose

The purpose of this guidebook is to assist communities and regions in negotiating fiscally beneficial impact benefit agreements (IBAs) that provide a fair distribution of revenues from resource development projects. These revenues may be used to support community and regional (economic) development processes, and to offset potential adverse community impacts associated with resource projects. There are other excellent IBA guidebooks that outline many of the key components and negotiation steps.[1] However, a gap exists in these guidebooks concerning in-depth explanations and calculations of how to design an IBA that will maximize the amount of income collected by the community. This guidebook seeks to address this gap by:

1. Summarizing key IBA revenue-generating tools (referred to as fiscal instruments) and their respective advantages and disadvantages;
2. Providing a financial model that can be used to estimate the income that can be expected by a community from alternative fiscal instruments as well as instructions on how to use the model, and;
3. Providing guidelines and strategies for choosing the best fiscal instrument or combination of fiscal instruments (referred to as a fiscal regime) for the community.

Resource extraction projects can generate significant profits and this guidebook is meant to assist communities in designing fiscal instruments that ensure a fair distribution of the profits. The audience for this guidebook are parties that could be affected by a proposed resource project and/or has resource ownership rights and wants to evaluate options for collecting revenue from resource development for the community. The affected community may be a number of different entities including, but not limited to, Indigenous communities, local governments, or impacted stakeholders. It should be noted that this guidebook focuses on only the instruments for sharing in fiscal benefits. Fiscal benefits may be only one of many components to an IBA and other components of an IBA dealing with non-fiscal issues such as mitigating adverse environmental impacts and providing employment

1.1 Guidebook Structure

In this first part of the guidebook, we provide background information on resource development and IBAs. Part 2 of the guidebook summarizes the IBA process and part 3 describes common fiscal instruments used in IBAs and criteria to evaluate their respective advantages and disadvantages. Part 4 summarizes business strategies that can undermine the effectiveness of IBAs and provide

The output:

A GUIDEBOOK!

Thank you!

Additional questions? Please contact:

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http://www.sfu.ca/rem/planning/research/IBA.html

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