SUSTAINABLE DEVELOPMENT IN MINING PRACTICE

Presentation to the Sustainable Development in the Minerals Industry Conference
Vancouver, British Columbia,
Wednesday July 15th, 2015

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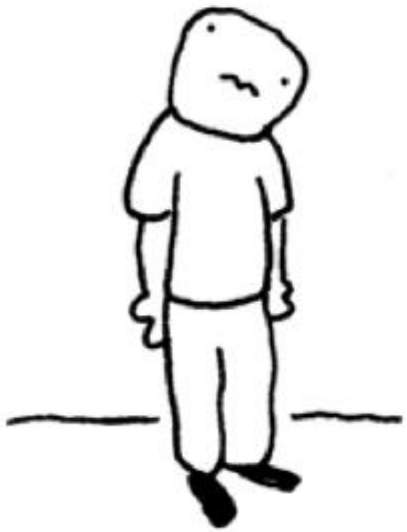
Landscape *resource stewardship group*

“Change”



When asked "would you rather work for change, or just complain?" 81% of the respondents replied, "Do i have to pick? This is hard."

What is "Social License"?

SociaLicense.com

HOME

¿Qué es una Licencia Social?

Licencia social en acción

Miediendo La Licencia Social

Publicaciones

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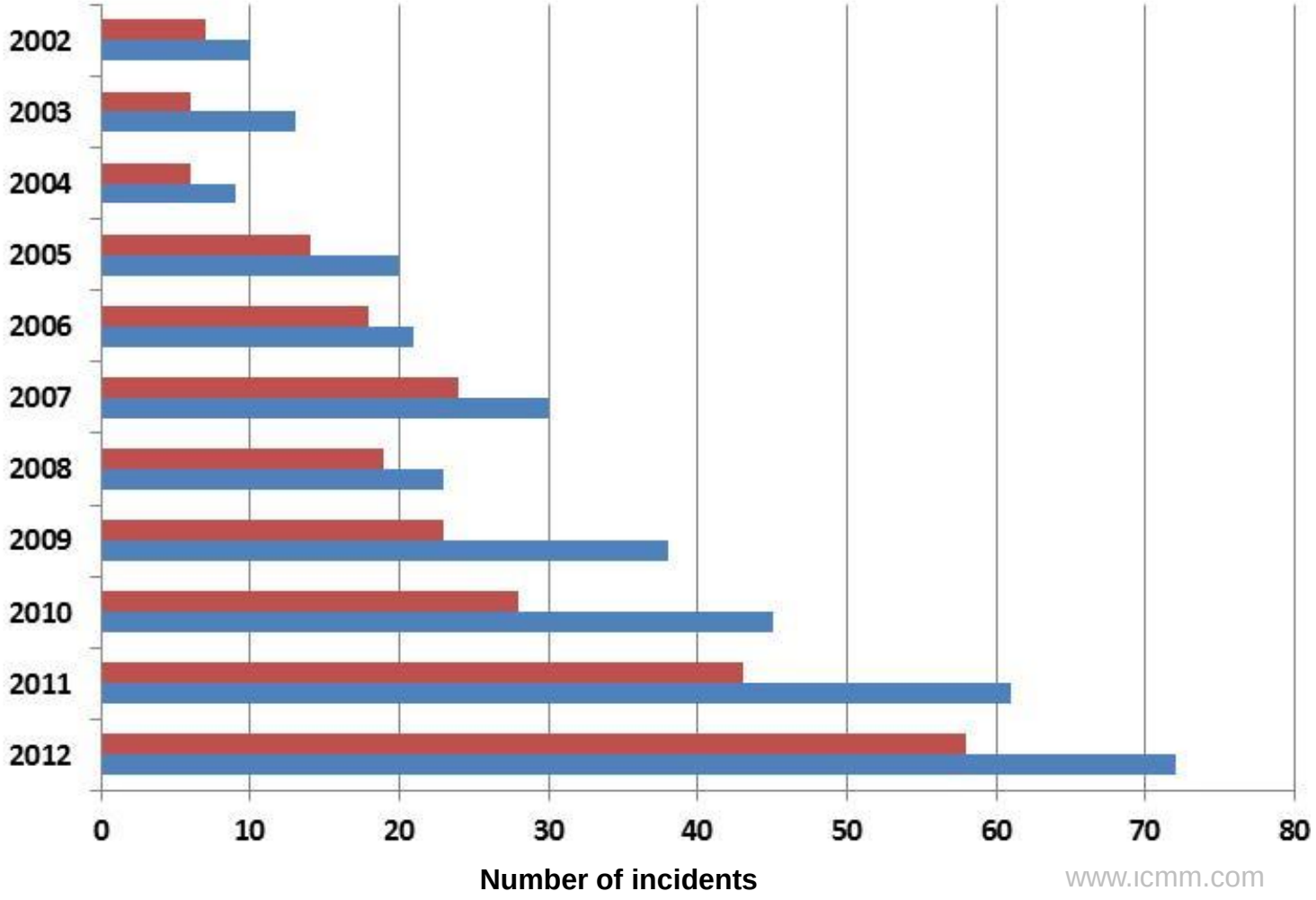
A **Licencia Social Para** Operar

'Uno no obtiene la licencia social yendo a un ministerio de gobierno y completando una solicitud, o simplemente pagando una tarifa. Se necesita mucho más que dinero para llegar a ser verdaderamente parte de las comunidades en las que uno opera.'
- Pierre Lassonde, Presidente de Newmont Mining Corporation.

Las industrias de recursos son aceptadas por el público en general gracias al rol que las mismas ocupan en la sociedad, proveyendo aquellos materials esenciales para las necesidades y bienestar de la misma. No hay duda alguna acerca del rol histórico que las industrias de recursos naturales han jugado en el progreso de las sociedades y en el crecimiento económico e industrialización de algunos países en particular. Sin embargo, al nivel de proyectos individuales, esta aceptación no es ni automática ni incondicional. En la actualidad existe la necesidad de obtener y mantener el apoyo de la gente que vive y trabaja en el área de impacto e influencia de todo proyecto – tener una Licencia Social para Operar. Existe amplia evidencia de que cuando no se obtiene y mantiene esta licencia, surgen problemas para los impulsores de la propuesta de un proyecto.

Increase in mining-community conflicts



www.icmm.com

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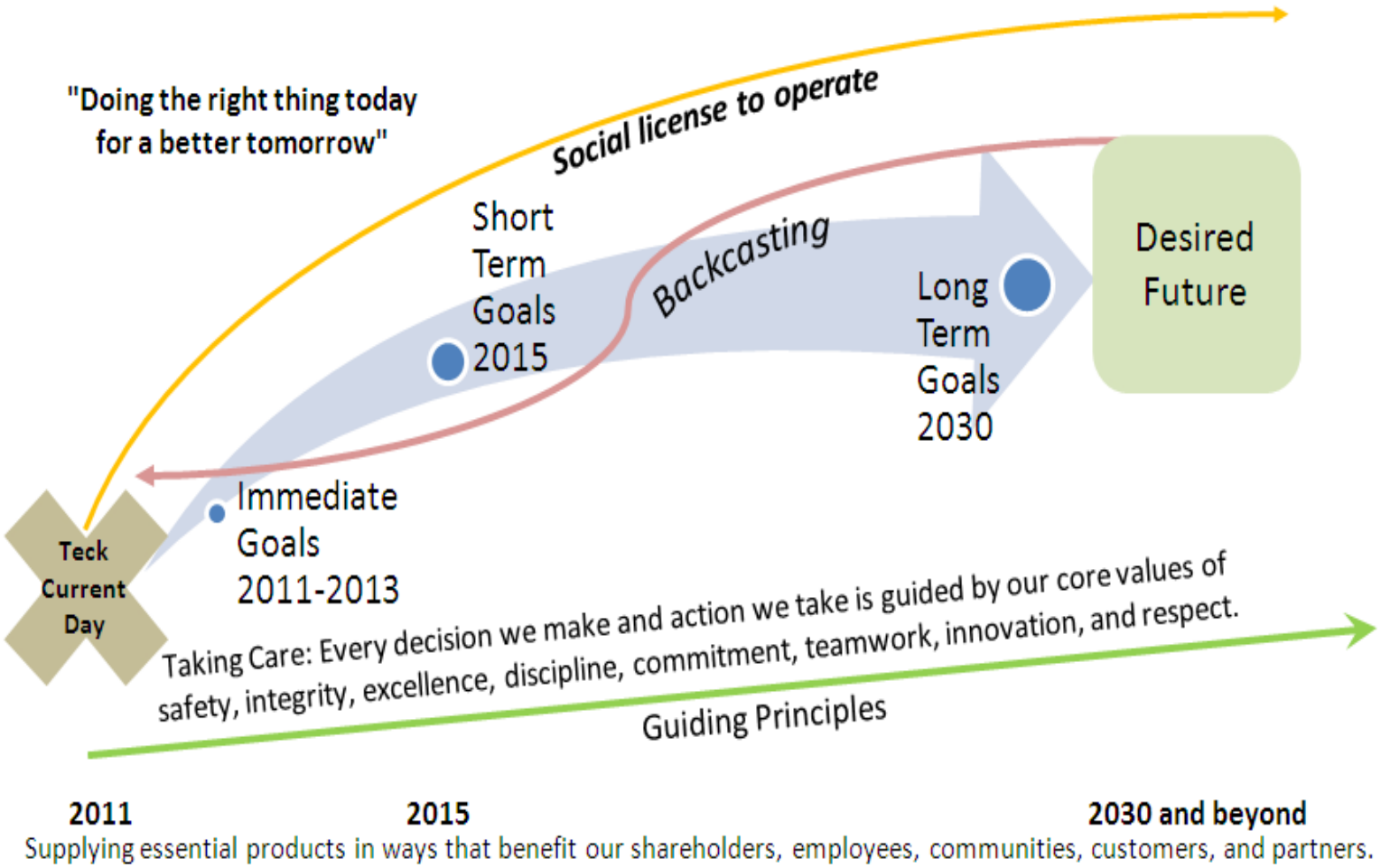
Key Trends – Drivers of Change

- Cost and security of energy
- Cost and availability of water
- Pressure on greenhouse gas emissions
- Shortages of skilled people
- Community expectations and leverage (NGOs, Social Media, FPIC)
- Tightening regulations (products & operations)
- Supply chain stewardship policies
- Extended producer responsibility
- Biodiversity loss
- Government focus on capturing wealth and leveraging development
- Shifting sources of investment from state-owned enterprises

Anticipating and Envisioning the Future



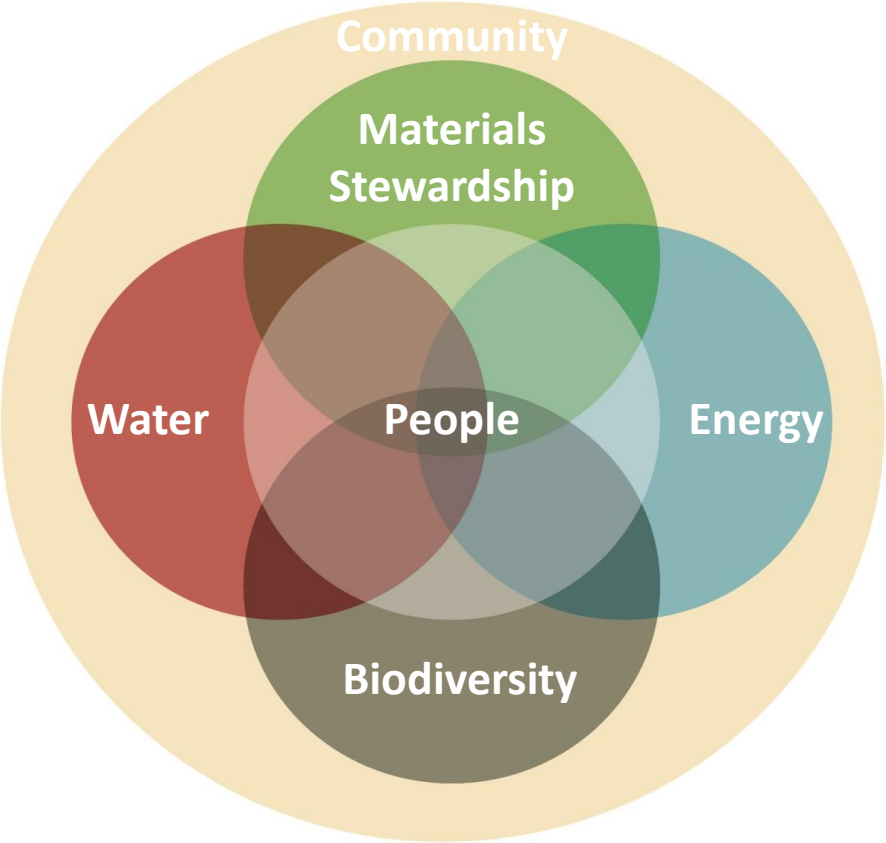
Thinking Beyond Mine Life

Creating a Sustainability Strategy: one Company's approach

"In 2010, we will develop our sustainability leadership initiative across the company, to maintain and enhance our social license to operate."

Don Lindsay – Teck Resources CEO, 2010 Annual Report

6 Interconnected Sustainability Focus Areas



Key Focus Area Visions

Water	We contribute to the ability of present and future generations to enjoy a balance between the social, economic, recreational and cultural benefits of water resources, within ecologically sustainable limits.
Ecosystems and Biodiversity	We achieve a net positive impact on biodiversity by maintaining and re-establishing self-sustaining landscapes and ecosystems that lead to viable long-term and diverse land uses in the areas in which we operate.
Energy and Climate Change	We are a catalyst for introducing new energy and management systems that make a positive contribution to society's efficient use of energy.
Materials Stewardship	We offer a range of products and services that create maximum value for society with minimal impact to people and the environment.
Community	**We collaborate with communities so they genuinely benefit in a self-defined and sustainable manner from our activities and products. Communities consider themselves better off as a result of their interactions with us and offer broad support for our efforts.**
People	We attract, retain and develop people, whose passion, skills and motivation lead our journey to a successful and sustainable future.

Community Short Term Goals 2015

1. Assess social risk and performance and manage activities.
2. Implement policies and to guide our interactions with Indigenous Peoples.
3. Put processes in place to maximize community benefits and collaboration.
4. Build our internal capacity through personnel training and SMART.

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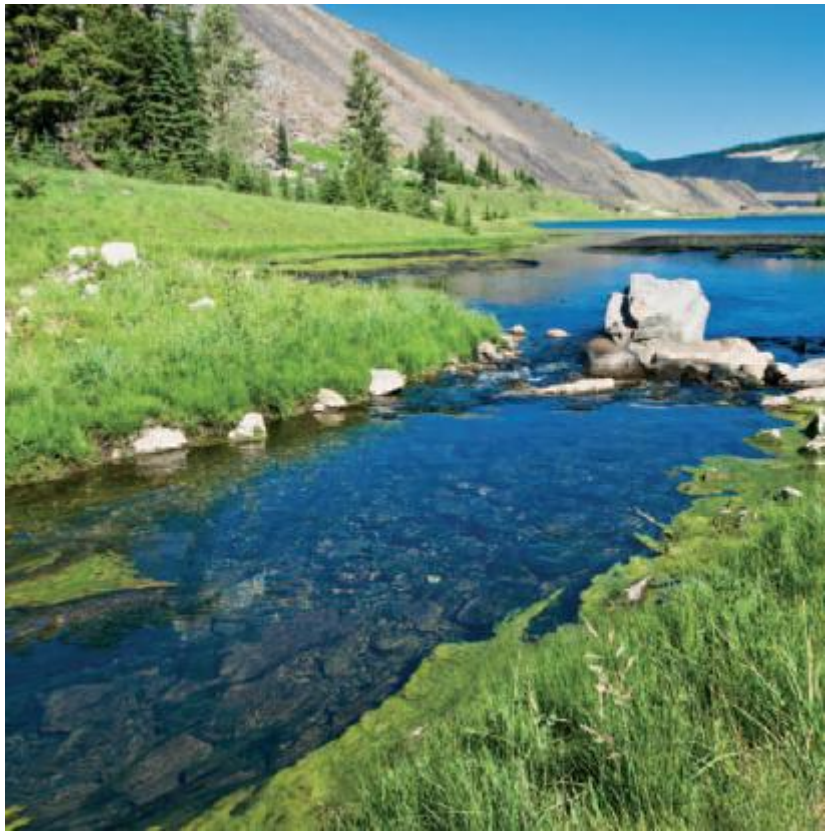
Water Short Term Goals 2015

1. Establish baseline for water use intensity and water quality at all current operations by 2013.
2. Implement Teck's water management standard by 2013.
3. Implement measures to achieve operation-specific goals for improvements in water use intensity and water quality.



Teck's Zinc and Health Program

Zinc & Health | Teck

Human Health

Therapeutic Zinc

- A combination of zinc and oral rehydration salts for the treatment of diarrhea
- Working in partnership with the Micronutrient Initiative and the Government of Canada to provide zinc-rich micronutrients to children in Senegal.

Supplementation

- Supporting Zinc Saves Kids, an initiative of the International Zinc Association (IZA) in support of UNICEF's zinc supplementation and treatment programs in Peru and Nepal.

Food Fortification

- Working in partnership with BASF to fortify staple foods with zinc.

Crop Nutrition

- Working with the IZA, International Fertilizer Development Centre (IFDC) and certain governments to deliver zinc-rich fertilizer options to improve crop yields and nutrition.

Awareness & Advocacy

Public Outreach

- Raising awareness about zinc deficiency at We Day events across Canada, in cooperation with Free The Children.
- Dedicated website.
- Proactive communications on other initiatives.

Employee Outreach

- Engaging with Teck employees through a quarterly newsletter and site-level events, with the Zinc and Health captains.

Why Teck is Involved?

- As a significant producer of zinc, Teck recognizes the role we can play in finding solutions to the global issue of zinc deficiency

- We are deeply committed to the work we do with international agencies to deliver zinc treatments and supplementation to

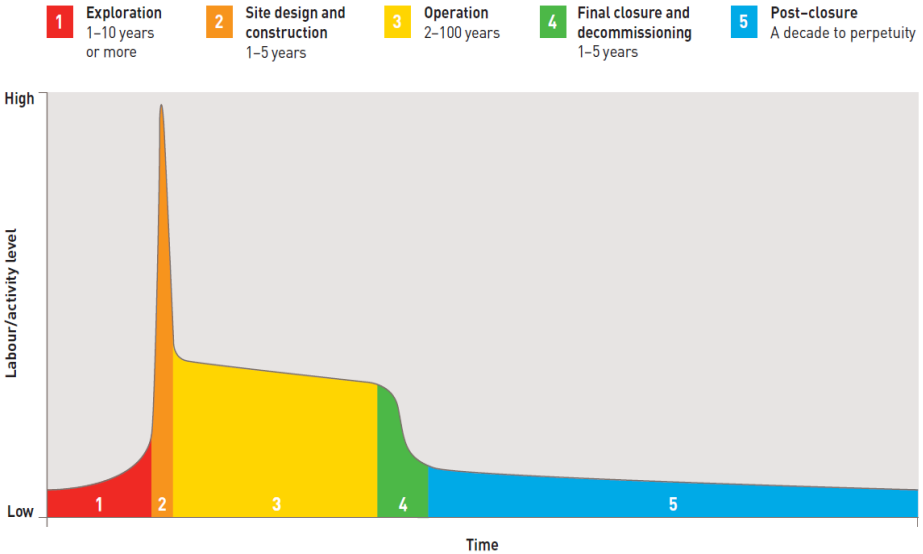
MINING 2.0
CREATING THE FUTURE:

HOW MIGHT MINING'S SUPPORT OF SUSTAINABILITY BE SCALED-UP?

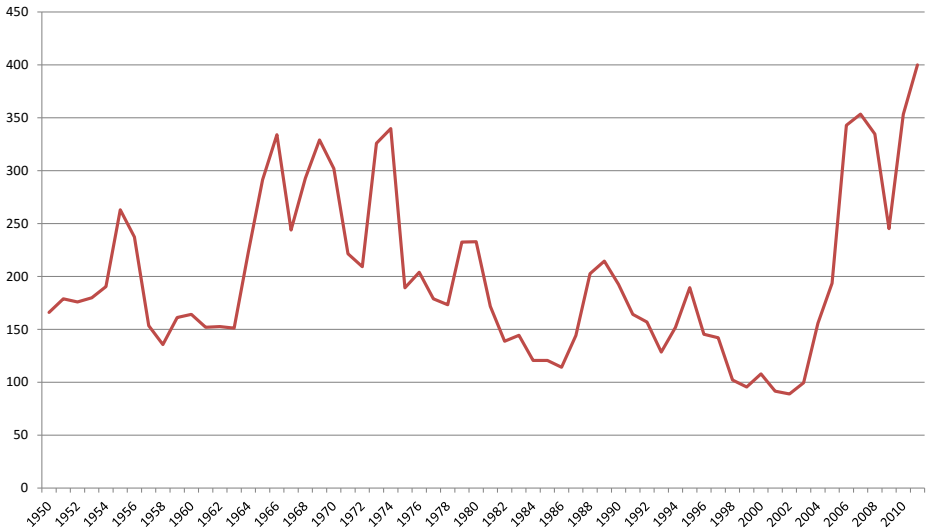
Towards a Resources and Development Framework

Mining's contribution over a project life cycle and beyond

Mine project life cycle



Copper price, 1950 – 2012, US cents (2012)/lb



Trend toward longer term collaboration on development projects and shared infrastructure.

Time horizon disconnect

- Mining investments, 30-100 year horizon
- Indigenous peoples, multi-generation
- Government, 3-5 year horizon
- Investors, quarterly/annual results
- Communities, often immediate
- Price, constant change; cost curve trends up

Resources and Development Governance Framework

Supporting Sustainable Livelihoods and Cultural Diversity				
Integrated Resource Management				
Natural Capital	**Human & Intellectual Capital**	**Social Capital**	**Financial Capital**	**Manufactured Capital**
Resource Endowment Delineation & Assessment • Biodiversity • Water • Energy • Minerals • Air and Climate Change Resource Planning Environmental and Resource Stewardship	Health & Safety Community Health Skills Development & Livelihood Training Leadership & Mgmt. Development	Human Rights & Gender Culture, Traditional Knowledge & Spirituality Community Engagement & Participatory Development Governance Systems, Policies and Regulation Sustainability Strategies Contract Negotiations Conflict Management Organizational Structures Performance Management & Reporting Supply Chains &	Resource Rent & Taxation Regimes Revenue Distribution Management Financial System Policy and Management Sovereign Wealth Management Transparency Anti-corruption Transfer Pricing (Integrated) Reporting	Infrastructure Development • Food Security • Water • Energy and Electrification • Tele-communications • Information Systems • Transportation • Minerals Stewardship • Goods and Equipment Product Beneficiation Cross-Sector Linkages

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Resource Endowment Delineation & Assessment • Biodiversity • **Water** • Energy • Minerals • Air and Climate Change Resource Planning Environmental and Resource Stewardship	Health & Safety Community Health **Skills Development & Livelihood Training** Leadership & Mgmt. Development	Human Rights & Gender Culture, Traditional Knowledge & Spirituality **Community Engagement & Participatory Development** Governance Systems, Policies and Regulation Sustainability Strategies Contract Negotiations Conflict Management Organizational Structures Performance Management & Reporting	**Resource Rent & Taxation Regimes** **Revenue Distribution Management** Financial System Policy and Management **Sovereign Wealth Management** Transparency Anti-corruption Transfer Pricing (Integrated) Reporting	**Infrastructure Development** • Food Security • Water • Energy and Electrification • Tele-communications • Information Systems • Transportation • Minerals Stewardship • Goods and Equipment Product Beneficiation Cross-Sector Linkages

Resources and Development Governance Framework

Supporting Sustainable Livelihoods and Cultural Diversity

Integrated Resource Management

Natural Capital

Resource Endowment Delineation & Assessment

- Biodiversity
- **Water**
- Energy
- Minerals
- Air and Climate Change

Resource Planning

Environmental and Resource Stewardship

… the starting point?

Integrated Resource Management (IRM) is a planning and decision-making process to coordinate resource use to optimize long-term sustainable benefits.

Scale: national to **river basin level** to community-based. (e.g. Peru Water Law reform)

Mining and O&G activities require and impact many forms of Natural Capital.

Effective governance, IRM and stewardship require **Baseline Understanding** of the extent of the present endowment

Resources and Development Governance Framework

Supporting Sustainable Livelihoods and Cultural Diversity

Integrated Resource Management

Human & Intellectual Capital

Health & Safety

Community Health

Skills Development & Livelihood Training

Leadership & Mgmt. Development

Capacity to enable people to live healthily and to engage and productively participate in society.

Matching needs and aspirations – placing people in the right place at the right time with the right capabilities and skills.

Leveraging utilization and stewardship of Natural Capital to create opportunities for Sustainable Livelihoods.

(e.g. Canadian Construction Assoc. and British Colombia Aboriginal Mine Training Assoc Worker training programs.)

Governance Processes and Capacity Building

Resources and Development Governance Framework

Supporting Sustainable Livelihoods and Cultural Diversity

Integrated Resource Management

Systems and **Norms of Behavior and Conduct –** the policies, processes, laws & regulations, contractual relationships and organizational structures, oversight, management, and reporting frameworks for governance and IRM.

Social Capital

Human Rights &Gender

Culture, Traditional Knowledge & Spirituality

Community Engagement & Participatory Development

Governance Systems, Policies and Regulation

Sustainability Strategies

Contract Negotiations

Conflict Management

Knowledge Performance Management, Reporting and Communications

Supply Chains & Local Procurement

Recognizing Interdependence - Identifying and establishing mutually beneficial **Relationships**.

Ongoing **Dialogue and Engagement** in the process of participatory planning, decision-making, setting roles and responsibilities and taking-action and follow-up.

Resources and Development Governance Framework

Supporting Sustainable Livelihoods and Cultural Diversity

Integrated Resource Management

Key considerations:

1. **FOLLOW THE $$ (**transparency is essential).
2. Create **competitive regimes** for rents & taxation.
3. Stakeholders must **understand the business**.
4. Sustainability Strategies + Sovereign Wealth Funds = Inter-Generational Sustainability Legacies

Particular areas of focus for Government

Financial Capital

Resource Rent & Taxation Regimes

Revenue Distribution Management

Financial System Policy and Management

Sovereign Wealth Management

Transparency

Anti-corruption

(Integrated) Reporting

Governance Processes and Capacity Building

Resources and Development Governance Framework

Supporting Sustainable Livelihoods and Cultural Diversity

Integrated Resource Management

Manufactured Capital = the stuff we build with:
Natural Capital + Financial Capital + Human Capital
… under the standards set through Social Capital .

Movement to plan around **Shared Infrastructure** that improves overall wellbeing.

Supply Chains & Procurement for goods and equipment represent a large share of capital flows and livelihood and business opportunities.

Opportunities to support **diversified sustainable economic activities.**

Planning cycles for development initiatives can be extended to longer time frames matched to project life.

Manufactured Capital

Infrastructure Development

- Food Security
- Water
- Energy and Electrification
- Transportation
- Information Systems
- Tele-communications
- Metals stewardship
- Goods and Equipment

Product Beneficiation

Cross-Sector Linkage

Resources and Development Governance Framework

(WORLD ECONOMIC FORUM 7 Dimensions of Value)

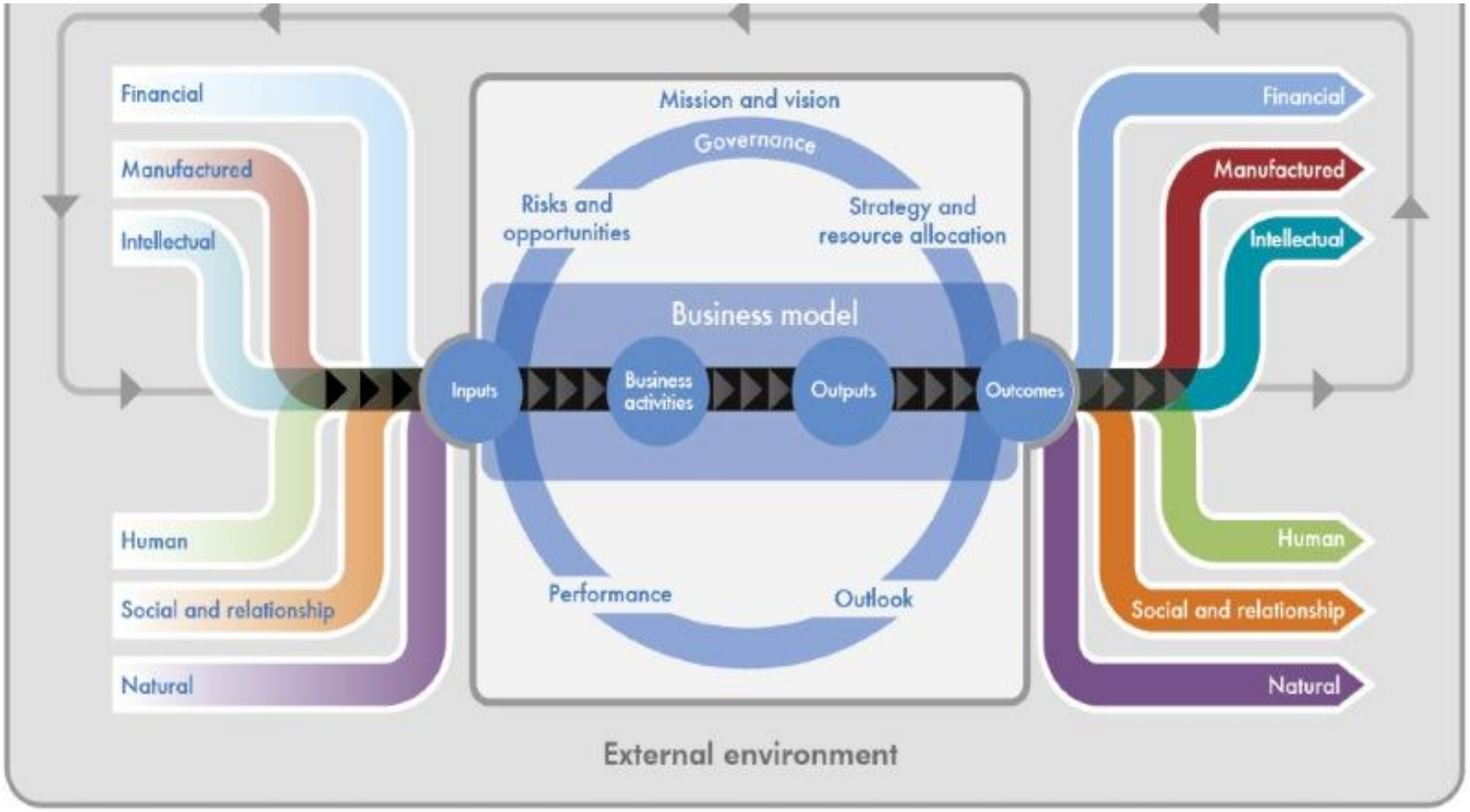
Supporting Sustainable Livelihoods and Cultural Diversity

Integrated Resource Management

Natural Capital	Human & Intellectual Capital	4. Social Capital	Financial Capital	Manufactured Capital
Resource Endowment Delineation & Assessment	Health & Safety	**Human Rights & Gender**	**1. Resource Rent & Taxation Regimes**	**7. Infrastructure Development**
3. Biodiversity • **Water** • **Energy** • **Minerals** • **Air**	Community Health	Culture, Traditional Knowledge & Spirituality	Revenue Distribution Management	• Food Security • Water • Energy and Electrification
Resource Planning	**2. Skills Development & Livelihood Training**	Community Engagement & Participatory Development	Financial System Policy and Management	• Tele-communications • Information Systems
Environmental and Resource Stewardship	Leadership & Mgmt. Development	**1. Governance, Policies & Regulation**	Sovereign Wealth Management	• Transportation • Minerals Stewardship
• Project Waste Management & Reclamation		Sustainability Strategies	Transparency	• Goods and Equipment
		Agreements	Anti-corruption	**6. Product Beneficiation**
		Conflict Management	Transfer Pricing	Cross-Sector Linkages
		Organizational Structures	(Integrated) Reporting	
		2. Livelihoods & Employment **5. Supply Chains & Procurement**		
		Performance Management & Reporting		

Governance Processes and Capacity Building

Integrated Project Management & Reporting



Value creation (preservation, diminution) over time

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Being “World-Class” in mining & mine supply

For Miners:

- Early and sustained community engagement.
- Earned and maintained social license.
- Support education, training & skills development.
- Strategic local procurement and employment.
- Long-term collaborative approach to sustainability.

For Suppliers

- Health & Safety performance.
- Human rights policies and practices.
- Local employment and training programs.
- Support local and regional procurement & employment
- Sensitivity to product stewardship and supply chains.