

ICMM and Sustainability

Peru – Chile – Brazil

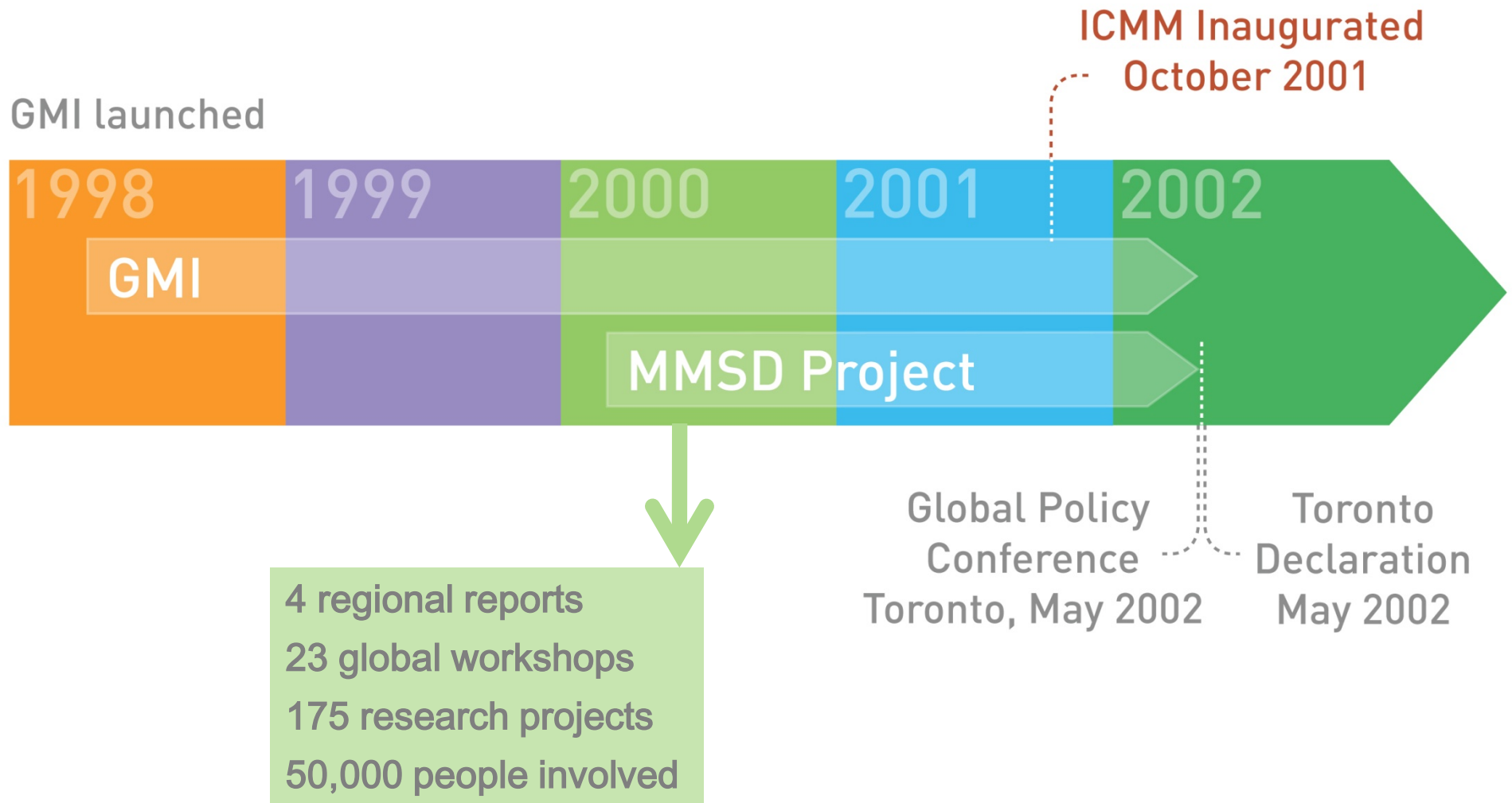
R. Anthony Hodge, President
April – May 2012



Where does ICMM come from?



ICMM's origins



ICMM at a glance



ICMM Vision

leading mining and metals companies working together and with others to strengthen the contribution to sustainable development



Fundamental implication

creating value for shareholders while simultaneously creating value for the communities and societies in which they operate



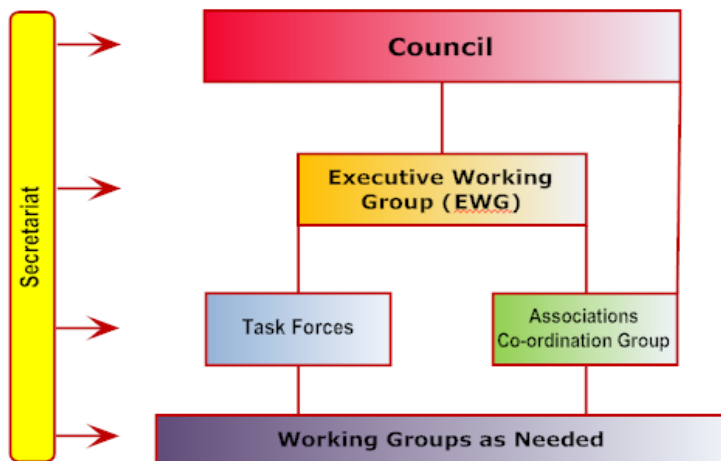
Our role: a catalyst for improving environmental and social performance in the mining and metals industry

Three-year strategy and action plans 2010 – 2012 and 2013 - 2015



Performance Measurement and Progress Assessment (PMPA)

- Council perspectives
- EWG perspectives
- Task force and program performance
- Staff performance: PDR, (360s)

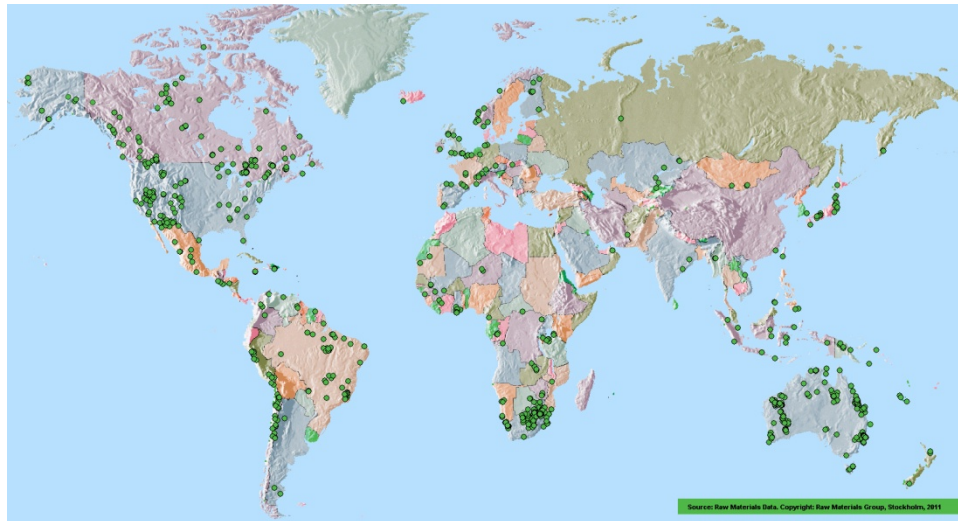


ICMM at a glance



CEO led
21
Company
members

32
Association
members



Over 800 sites
in 62 countries

ICMM member companies

Australia | **BHP Billiton**

Brazil | **Vale**

Canada | **Barrick**
Goldcorp
Teck

Chile | **Codelco**

China | **MMG**

France | **Areva**

**JX Nippon Mining &
Metals**

Japan | **Mitsubishi Materials**

Sumitomo Metal Mining

Norway | **Hydro**

**African Rainbow
Minerals**

South Africa | **AngloGold Ashanti**

Gold Fields

Switzerland | **Xstrata**

Anglo American

United Kingdom | **Lonmin**

Rio Tinto

**Freeport-McMoRan
Copper & Gold**

United States | **Newmont**

Country Analysis 1A, Low to Medium income countries with more than one ICMM member (as of March 2011)

Country	Company (may miss some exploration and closure sites)	ICMM Association Member	Significance			
			of mining/metals in national economy (preliminary)	in the climate change arena (preliminary)	for EITI (as of March 11)	for CRIRSCO (as of March 11)
Argentina	AngloGold Ashanti, Barrick, Goldcorp, Rio Tinto, Vale, Xstrata	Camara Argentina de Empresarios Mineros (CAEM)	low-medium	medium	no activity	applicant
Brazil	Anglo American, AngloGold Ashanti, BHP Billiton, Rio Tinto, Vale, Xstrata	Instituto Brasileiro de Mineracao – IBRAM	medium	High	target , Vale and Petrobras are supporting companies;	active discussions
Chile	Anglo American, Barrick, BHP Billiton, Freeport McMoRan, Sumitomo, Teck, Rio Tinto, Vale, Xstrata	Consejo Minero de Chile A.G. Sociedad Nacional de Minería de Chile (SONAMI)	medium – high	High	target, upcoming workshop	member
China	Anglo American , Anglogold Ashanti MMG, Nippon, Rio Tinto, Sumitomo, Vale (significant market for all ICMM)	China International Mining Group (CIMG)	medium - high	High	effectively a supporting country	active discussions
Colombia	AngloGold Ashanti, BHP Billiton, Vale, (Cerrajan Coal - Anglo American, BHP Billiton, Xstrata)	Camara Asomineros Andi	high	High	target	active discussions
Dominican Republic	Barrick, Xstrata, Goldcorp	--	low-medium	Low	no activity	no activity
DRC	AngloGold Ashanti, BHP Billiton, Freeport McMoRan, Rio Tinto	--	high	High	candidate close-to-compliant	active discussions
Ghana	AngloGold Ashanti, Gold Fields, Newmont, Rio Tinto	(Ghana Chamber of Mines)	Low – medium	High	compliant	no activity
Guinea	AngloGold Ashanti, BHP Billiton, Rio Tinto, Vale	--	high	Low	candidate	no activity
India	Rio Tinto, Vale	Federation of Indian Mineral Industries	medium - high (state owned)	High	no activity	no activity
Indonesia	BHP Billiton, Freeport McMoRan, Newmont, Sumitomo, Rio Tinto, Vale	Indonesian Mining Association (IMA)	medium - high	High	candidate	active discussions
Lao PDR	MMG, Rio Tinto	--	Medium	medium	no activity	no activity
Liberia	BHP Billiton, Vale	--	low	Low	compliant	no activity
Malaysia	Nippon, Sumitomo, Xstrata	--	low	medium	no activity	no activity

Country Analysis 1B, Low to Medium income countries with more than one ICMM member (as of March 2011)

Country	Company (may miss some exploration and closure sites)	ICMM Association Member	Significance			
			of mining/metals in national economy (preliminary)	in the climate change arena (preliminary)	for EITI (as of March 11)	for CRIRSCO (as of March 11)
Mali	AngloGold Ashanti, Gold Fields	--	high	medium	candidate, close-to-compliant	no activity
Mexico	BHP Billiton, Goldcorp, Newmont	Camara Minera de Mexico	medium	high	target, Pemex is supporter	no activity
Mongolia	BHP Billiton, MMG, Rio Tinto, Vale	--	high	low	compliant	active discussions
Mozambique	BHP Billiton, Vale	--	high	low	candidate	no activity
Namibia	Anglo American, AngloGold Ashanti, Rio Tinto	--	medium - high	low	target, preliminary discussions	active discussions
New Caladonia	Sumitomo, Vale, Xstrata	--	low - medium	low	no activity	no activity
Oman	Rio Tinto, Vale	--	low	medium	no activity	no activity
Pakistan	BHP Billiton, Barrick	--	low	medium	no activity	no activity
Papua New Guinea	Barrick, Rio Tinto, Xstrata	--	medium	high	target country, discussions ongoing with government	no activity
Peru	Anglo American, AngloGold Ashanti, Barrick, BHP Billiton, Freeport McMoRan, Gold Fields, Newmont, Rio Tinto, Sumitomo, Teck, Vale, Xstrata	Sociedad Nacional de Minería Petróleo y Energía (SNMPE)	high	high	candidate, close-to-compliant	active discussions
Philippines	Newmont, Sumitomo, Vale	--	low	high	target	active discussions
South Africa	African Rainbow Minerals, Anglo American, AngloGold Ashanti, BHP Billiton, Gold Fields, Lonmin, Rio Tinto, Vale, Xstrata	Chamber of Mines of South Africa Mining Industry Associations of Southern Africa	low - medium	high	target, meetings held with government	member
Suriname	Newmont, Rio Tinto	--	high	low	no activity	no activity
Tanzania	AngloGold Ashanti, Barrick, Xstrata	--	medium	medium	candidate	no activity
Thailand	Sumitomo, Vale	--	low	medium	no activity	no activity

Country Analysis 2, Low to medium income countries with one ICMM member with significant presence

Country	Company (may miss some exploration and closure sites)	ICMM Association Member	Significance			
			of mining/metals in national economy (preliminary)	in the climate change arena (preliminary)	for EITI (as of March 11)	for CRIRSCO (as of March 11)
Algeria	BHP Billiton	--	Low	low	no activity	no activity
Angola	Vale	--	low	medium	target, preliminary discussions	no activity
Barbados	Vale	--	low	high	no activity	no activity
Cameroon	Rio Tinto	--	low	medium	candidate	no activity
Congo	Vale	--	low	high	candidate	no activity
Cote d'Ivoire	Goldfields	--	low	low	candidate	no activity
Guatemala	Goldcorp	--	low	low	candidate	no activity
Honduras	Goldcorp	--	low	medium	no activity	no activity
Ireland	Anglo American	Eurometaux Euromines	low	medium - low	no activity	connection through PERC and IGI
Kazakhstan	Vale	--	low	high	candidate, close to compliant	no activity
Madagascar	Rio Tinto	--	low	high	candidate	no activity
Trinidad and Tobago	BHP Billiton	--	low	high	candidate	no activity
Venezuela	Anglo American	Camara Minera de Venezuela	low	high	no activity	no activity
Zambia	Vale	--	high	low	candidate	connection through NRO (SA)
Zimbabwe	Rio Tinto, Anglo American	--	low - medium	high	target, preliminary discussions	connection through NRO (SA)

Country Analysis 3. High income countries with ICMM members present (as of March 2011)

Country	Company (may miss some exploration and closure sites)	ICMM Association Member	Significance			
			of mining/metals in national economy (preliminary)	in the climate change arena (preliminary)	for EITI (as of March 11)	for CRIRSCO (as of March 11)
Australia	Anglo American, AngloGold Ashanti, Barrick, BHP Billiton, Gold Fields, Lihir, MMG, Newmont, Sumitomo, Teck, Rio Tinto, Vale, Xstrata	Minerals Council of Australia	low - medium	high	supporting country, EITI Pilot	member
Canada	Anglo American, Barrick, BHP Billiton, Goldcorp, Teck, Rio Tinto, Vale, Xstrata	Mining Association of Canada Prospectors and Developers Association of Canada	low - medium	medium-low	supporting country	member
France	Rio Tinto, Vale	Eurometaux Euromines	low	high	supporting country	member through PERC
Germany	Vale, Xstrata	Eurometaux Euromines	low	high	supporting country	member through PERC
Iceland	Rio Tinto	--	low	medium	no activity	
Japan	Mitsubishi, Nippon, Sumitomo, Vale	Japan Mining Industry Association	medium	high	supporting country	no activity
New Zealand	Newmont, Rio Tinto	--	low	high	no activity	no activity
Norway	Rio Tinto, Vale, Xstrata	--	low	high	first compliant OECD country, major supporting country	no activity
Singapore	Vale	--	low	high	no activity	no activity
South Korea	Nippon, Nippon, Sumitomo, Vale	--	low	high	no activity	no activity
Spain	Xstrata	Eurometaux Euromines	low	medium	supporting country	member through PERC
Switzerland	Vale	--	low	high	support.	no activity
Taiwan	Nippon, Sumitomo, Vale	--	low	medium	no activity	no activity
UK	BHP Billiton, Rio Tinto, Vale, Xstrata	Eurometaux Euromines	low	high	supporting country	member through PERC
USA	AngloGold Ashanti, Barrick, BHP Billiton, Freeport McMoRan, Goldcorp, Newmont, Sumitomo, Teck, Rio Tinto, Vale, Xstrata	National Mining Association	low	high	supporting country	member

ICMM member associations

Americas

Cámara Argentina de Empresarios Mineros
Cámara Asomineros Andi - Colombia
Cámara Minera de Venezuela
Consejo Minero de Chile A.G.
Instituto Brasileiro de Mineração - Brazil
Mining Association of Canada
National Mining Association - USA
Prospectors and Developers Association of Canada
Sociedad Nacional de Minería - Chile
Sociedad Nacional de Minería, Petróleo y Energía – Perú

Africa

Chamber of Mines of South Africa
Ghana Chamber of Mines
Mining Industry Associations of Southern Africa

Europe

Eurometaux
Euromines

Asia-Pacific

China International Mining Group
Indonesian Mining Association
Japan Mining Industry Association
Minerals Council of Australia

Commodity Associations

Cobalt Development Institute
International Aluminium Institute
International Copper Association
International Iron Metallics Association
International Lead Association
International Manganese Institute
International Molybdenum Association
International Wrought Copper Council
International Zinc Association
ITRI
Nickel Institute
World Coal Association
World Gold Council

ICMM member commitments

10 principles for sustainable development + 6 position statements

1. Implement ethical business practices and apply good corporate governance
2. Integrate SD in corporate decision-making
3. Uphold fundamental human rights
4. Manage risks based on sound science
- 5/6. Improve environment, health and safety performance continuously
7. Conserve biodiversity & contribute to integrated land use planning
8. Encourage a life cycle approach to materials management
9. Contribute to community development
10. Publicly report, independently assure and engage openly and transparently

Mining and Protected Areas

Mining: Partnerships for Development

Climate Change

Mining and Indigenous Peoples

Mercury Risk Management

Transparency of Mineral Revenues

ICMM work program

Mining's Contribution

People

- **Social and Economic Development**
- **Health and Safety**

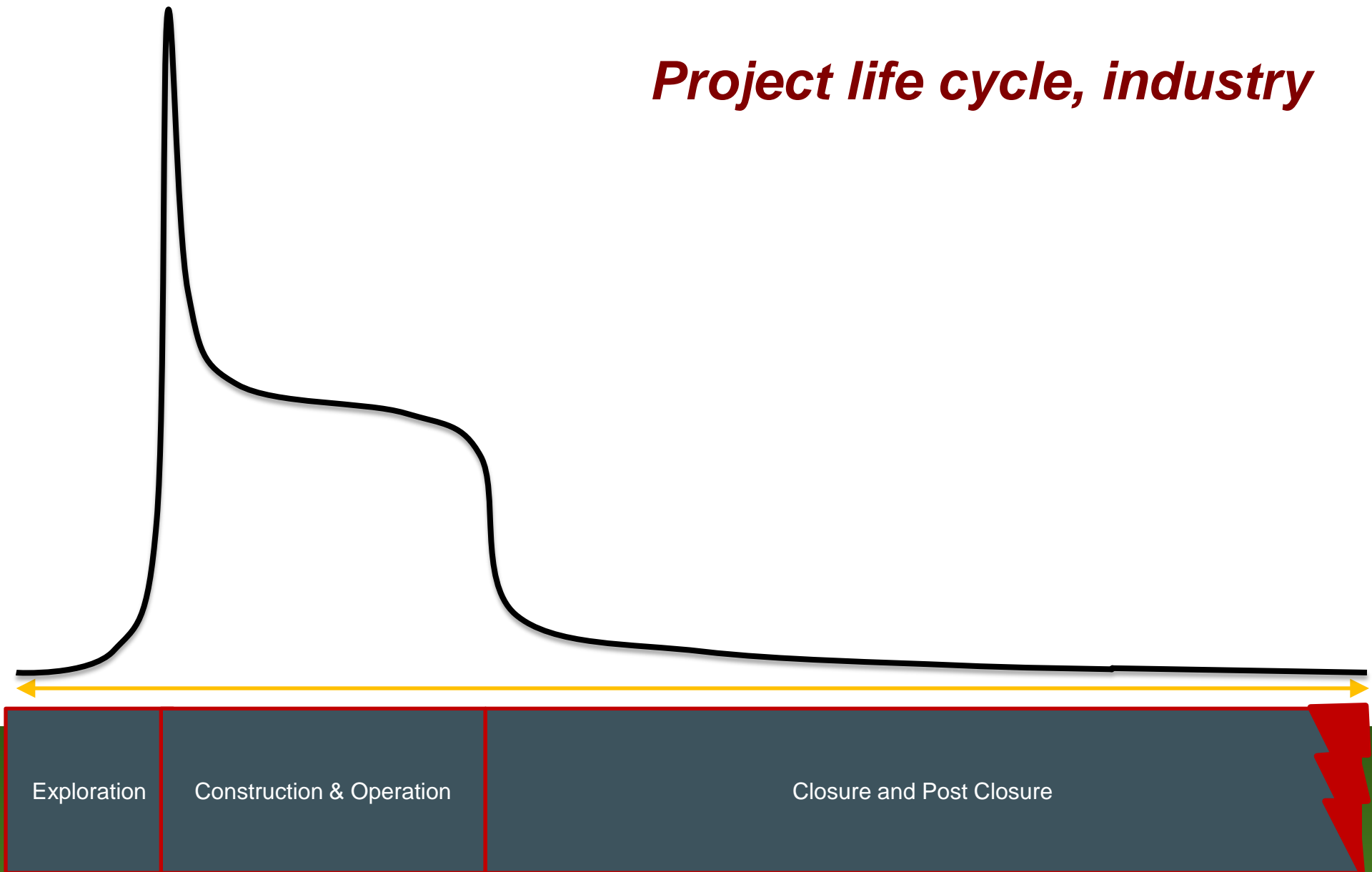
Environment

- **Environmental Stewardship**
- **Climate Change (Energy Policy)**
- **Materials/Product Stewardship**

Core Services

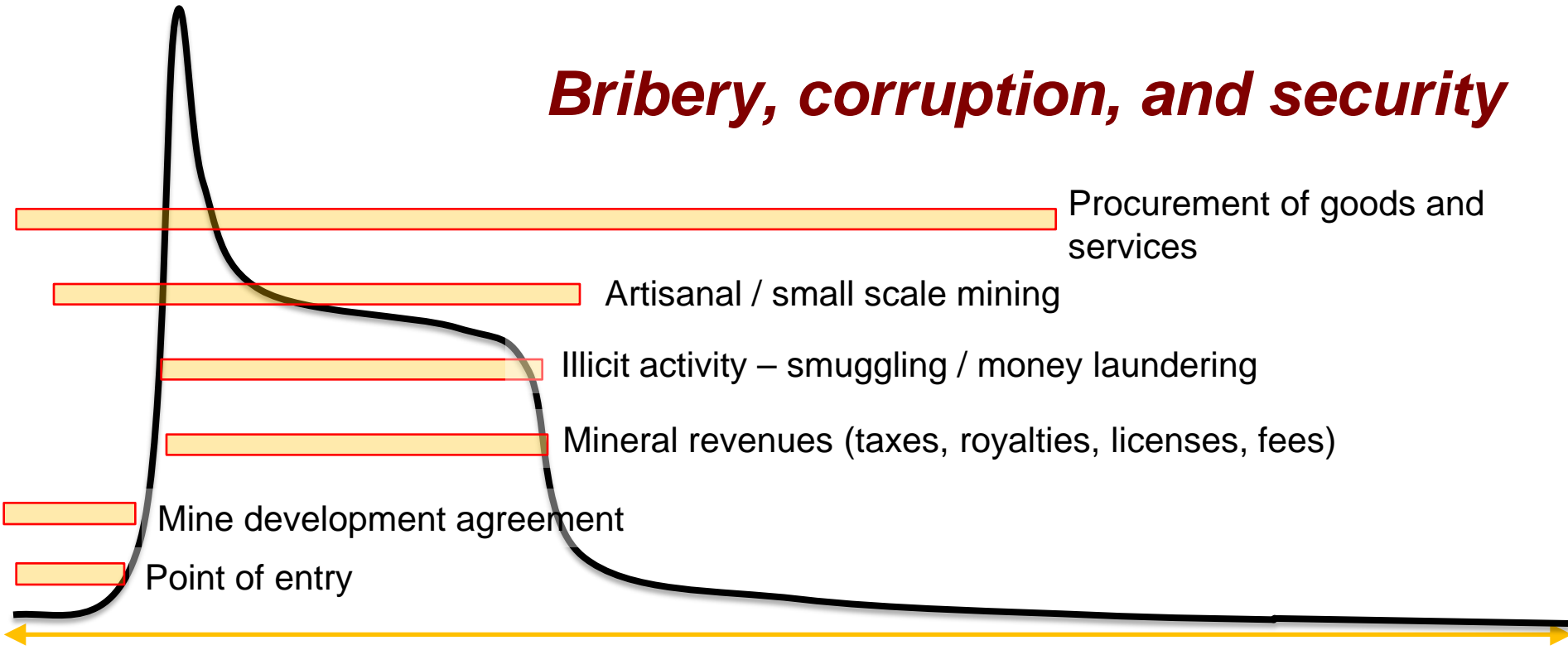
- **Reporting and Assurance**
- **Communications**
- **President's Office**

Project life cycle, industry



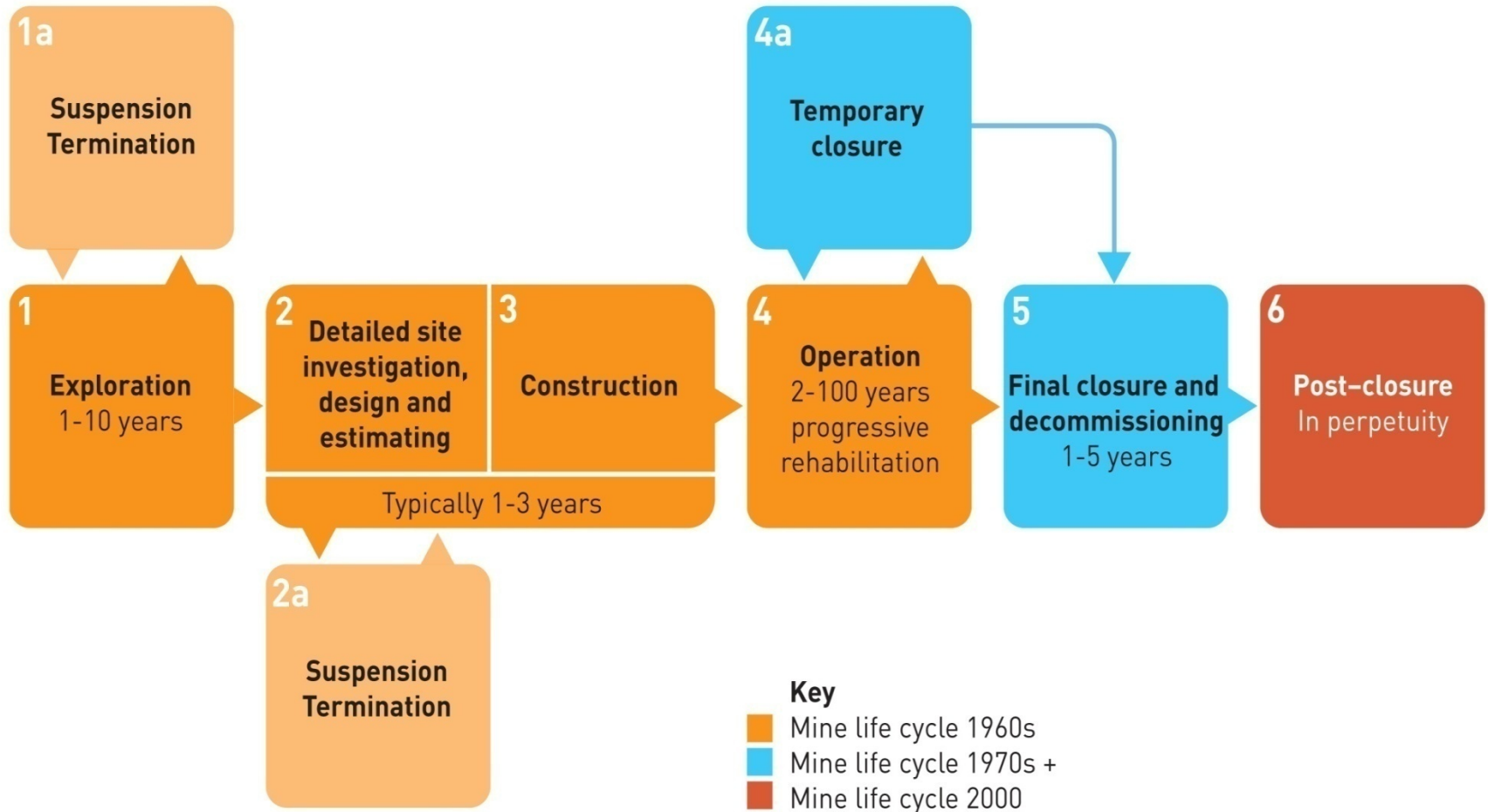
Mine project life cycle, multiple (5 – 7) generations

Bribery, corruption, and security

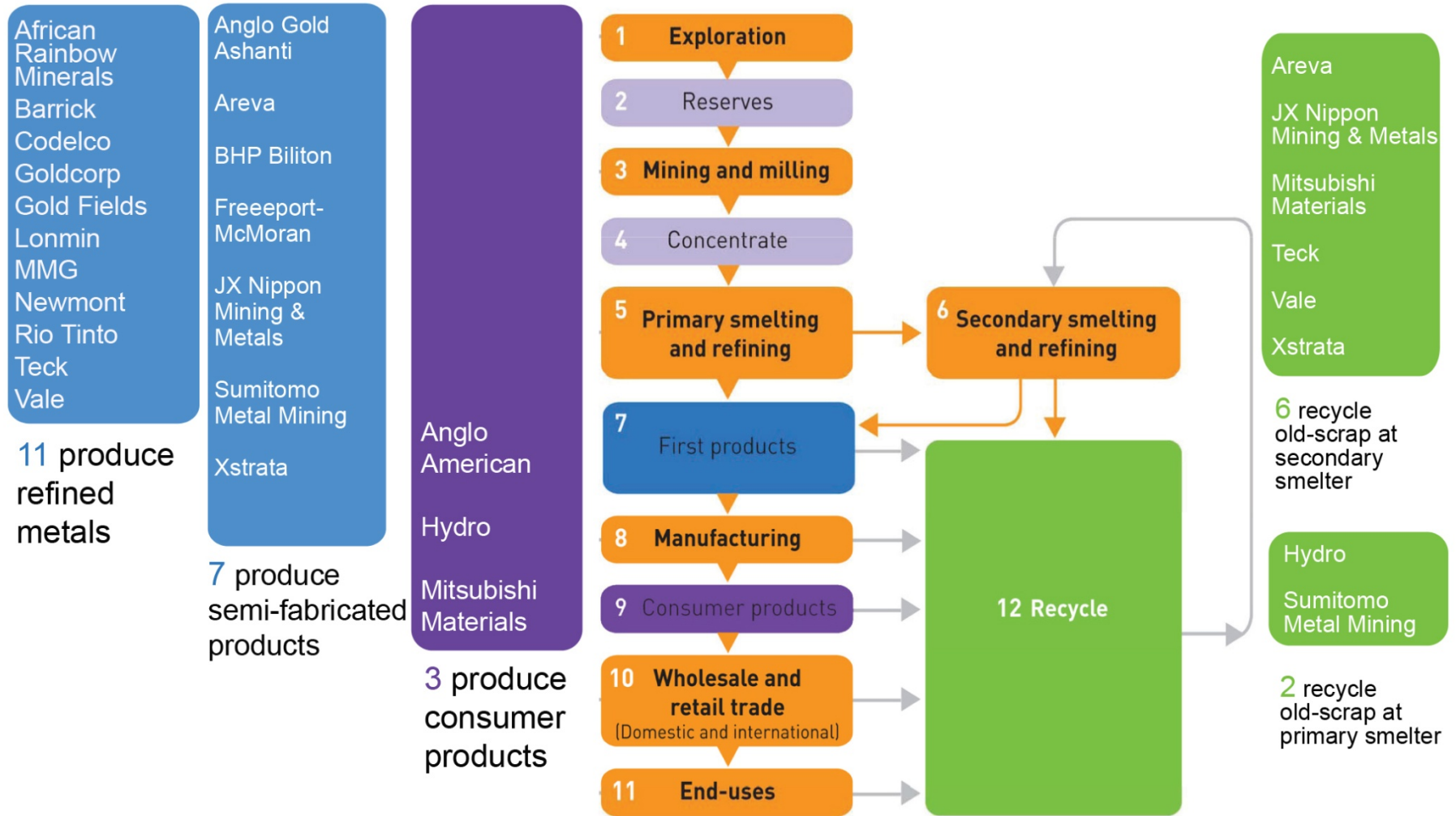


Mine project life cycle, multiple (5 – 7) generations
(rolling 7 generation responsibility?)

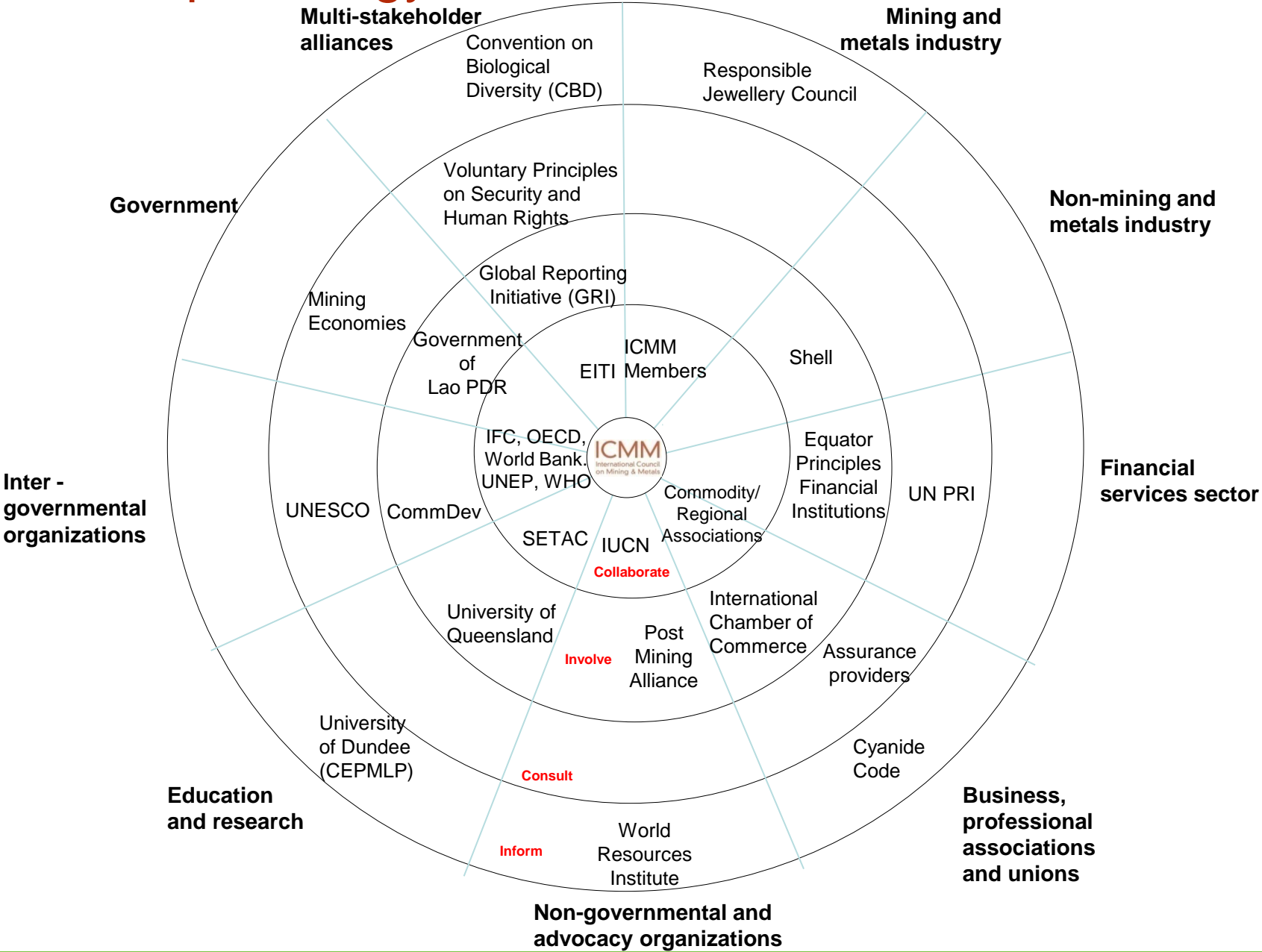
Mine project life cycle



The metals and minerals life cycle



Relationship strategy



Enhanced transparency and accountability

Robust entry criteria and process



Clear performance expectations



Reporting



Mining sector risks... and opportunities



Design for sustainability - issues



Labour & Working Conditions

Labour relations
Diversity and equal opportunities
Occupational Health & Safety
Labour issues in supply chain

Ethical Business Practices

Anti-corruption stance
Transparency
Political involvement

Environmental responsibility

Surface and Groundwater Management
Tailings and Waste Rock Management
Closure
Land (use, contamination, management)
Air emissions (excluding GHG)
Energy and Greenhouse Gases
Biodiversity
Emergency Preparedness

Social and economic contribution

Community development and resiliency
Cultural heritage
Regional economic development and resiliency
Artisanal and small scale mining
Involuntary resettlement of communities
Conflict resolution; security

Change in the operating environment . . . the evolution of tailings dam design and associated risk

year	Max.dam height	Increase in dam height and therefore the likelihood of a failure	Increase in volume of impounded tailings and therefore the increase in the consequence of a failure	Increase in risk (likelihood x consequences)
1900	15 m			
1930's	60 m	2 fold	10 fold	20 fold
1960's	120 m	2 fold	10 fold	20 fold
2000's	240 m	2 fold	10 fold	20 fold
2030's	480 m	2 fold	10 fold	20 fold

The above changes related to tailings dams have been addressed through a step change in risk management by companies through the adoption of enhanced standards of investigation, design, construction, operation and maintenance (through the active mine life, closure and post closure.

This has led to a dramatic increase in associated costs so much so that one expert has suggested that closure costs will soon become as significant as “ore reserves.”

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Reality check: key trends

1

Increasing public concerns (climate change, water, human rights, biodiversity, corruption and transparency, workplace fatalities, distribution of economic benefits of mining, poverty reduction, indigenous peoples' role in decision-making)

2

Intensifying political struggles over distribution of resource rents

3

Increased emphasis on corporate social and environmental practices

4

Increased NGO campaigning on a range of issues (community consent, ethical sourcing, biodiversity, energy minerals, chemicals management)

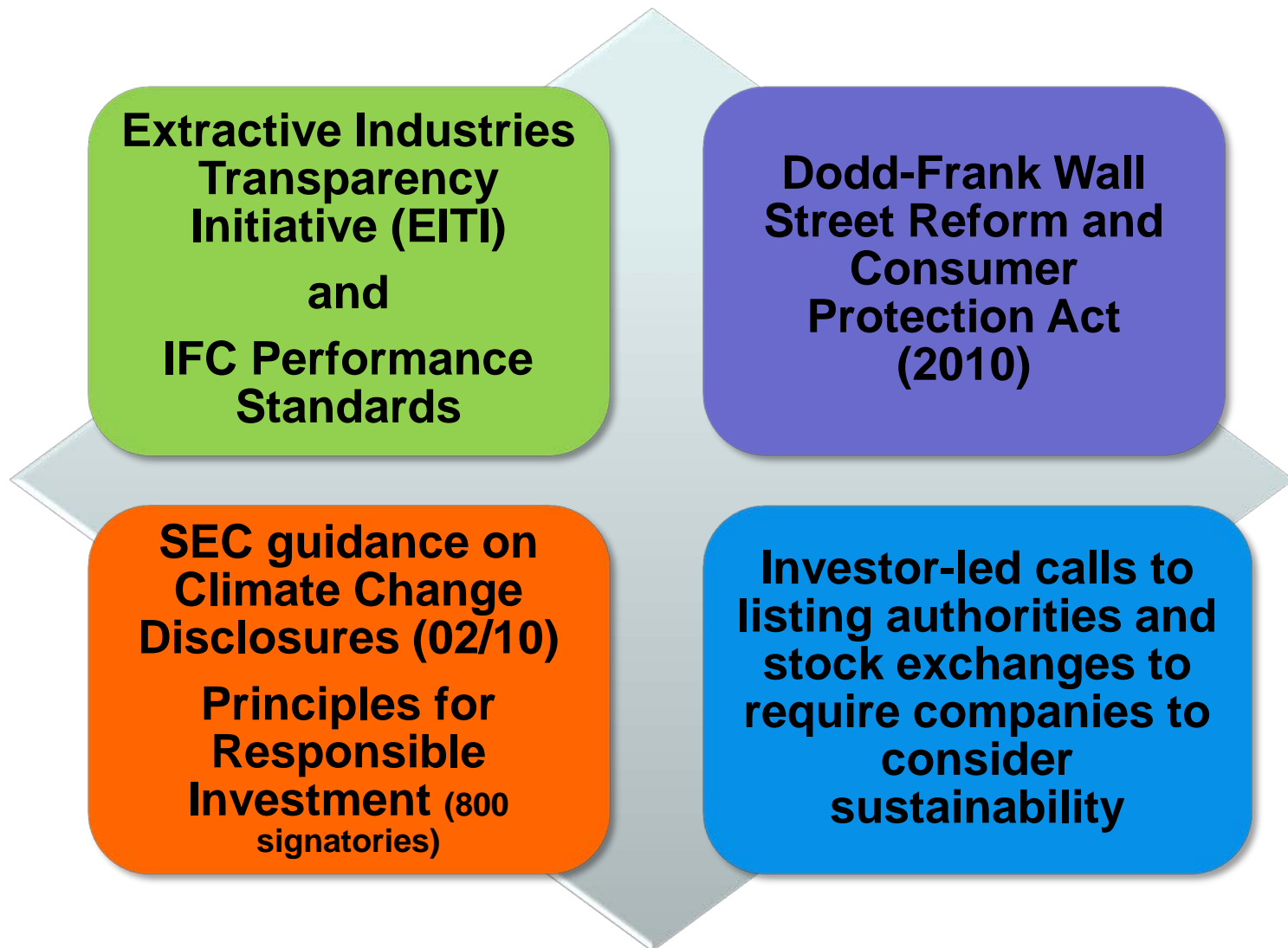
5

Increasing complexity and breadth of issues facing the industry

6

Growing recognition that no single interest can address issues effectively (growing need for multi-interest collaboration)

Growing pressure on disclosure and responsibility



The nature of the industry

category	approximate asset base, \$USD	approximate numbers of companies	comment
Global giants	Exceeds \$10 billion	50	global giants and seniors control the majority of available capital, their focus in on the industry; they have multiple operations
Seniors	\$3 - \$10 billion	100	
Intermediates	\$1 - \$3 billion	350	often on their way up; their focus is on growing their reserves
Juniors: small (often one mine) producers	\$500 million - \$1 billion	1,000	some growing, some shrinking; their focus is on their mine
Juniors: exploration	\$5 - \$500 million	2,000	volatile and market dependent; they are finders, not producers and their focus is on their exploration project
Junior juniors	Below \$5 million	2,500	Their focus is on accessing venture capital and manipulating their stock price

Spectrum of corporate behaviour



Hostile Avoiders
Opposers

Rearguard
Resistors

Corporate Couch Potatoes
Slow adapters

Vanguard of the Rearguard
Cautious innovators

Leading Edge Doers

For further information please contact
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