

**Environmental and social acceptability
of mining activities:
the point of view of Veolia,
a service provider to mining companies**

Foreword

- 21st-century mining projects are conceived differently from their forbearers, due to environmental standards, the rise of civil society, the progress of technologies...
- However, despite measures to avoid causing damage, or offset unavoidable damage, major mining projects inflict profound wounds on the environment and transform local people's lives.
- Social and environmental problems are closely linked. When our Group is contracted to reduce mining companies' environmental footprint, it can also help consolidate their projects' social acceptability.
- Veolia's role in mining projects is modest yet essential.
 - *Modest, because we're not a mining group, merely one of many partners.*
 - *Essential, because by alleviating the environmental impacts of extractive activities and increasing their social impacts, we help to make them acceptable and accepted.*



– Part I –
The ambivalent impacts of mining activities



Regulated mining activities have significant positive impacts...

- **Job creation, employee training, skills transfer, the regularization of previously informal employment practices...**
 - *E.g.: > 4 million jobs directly and indirectly created by gold mining*
- **Stimulus for local and national economies, payment of taxes and royalties**
 - *With annual revenue of over \$700 billion, the metal and mineral extraction sector is one of the world's largest industries*
 - *Mining drives many developing economies, (e.g. Mauritania, Guinea, Mongolia...)*
 - *A net contribution to the country's foreign exchange balance*
- **Access to better-quality essential services for local people.**
 - *The financial resources of many social policies come from extractive activities*
- **Reduction in the prevalence of diseases among miners and their families**
- **Restoring the balance between urban and rural areas.**
 - *People most usually leave the countryside as a negative choice, driven by a lack of prospects for earning a living, and a lack of essential services.*
 - *Developing essential services and jobs in rural areas is vital, if we are to limit the influx of people into the ever-expanding and unmanageable megacities.*

... as well as negative impacts

A high environmental footprint

- Conflicts for the use of scarce resources, altering local economic activities (water: 20 % of the world consumption)
- Water and soil pollution (e.g.: Rio Doce 2015), leading to deteriorated public health and biodiversity destruction
- Land consumption
- CO2 emissions
- Dust emissions

Very diversified socio-economic impacts

- Movements of populations
- Alterations to lifestyles (eg. ethnic minorities)
- Destabilization of local communities, often vulnerable because of their isolation
- Larger impacts on poor communities, because these are the groups who live in the remote locations where deposits lie
- Disrespect of labor rules by subcontractors
- The state budget's exposure to mining cycles and collapses in mineral prices
- A structurally imbalanced economy, over-dependent on a single industry...

At local level

At national level

...

5

Mines often drive a bad image, which fuels resistance to new mine opening

While there is a wide dispersion in water use by major miners, even the least intensive use massive amounts of water

Equivalent to:



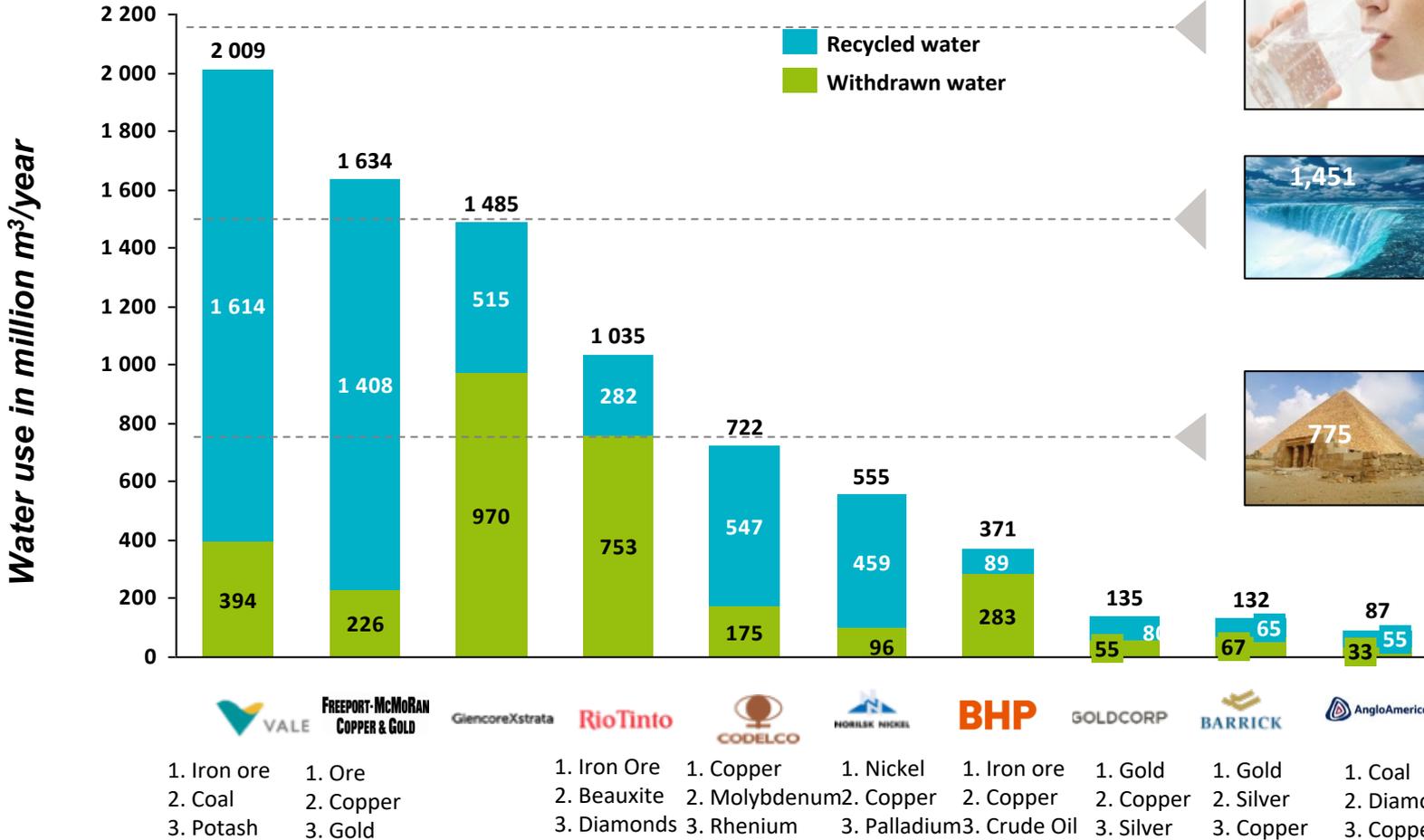
Domestic water consumption in EU per month



Total water flow Niagara falls per week



300x volume of Cheops Pyramid



Top commodities, ranked by tonnage

Alternative water resources reduce the environmental footprint of mines and conflicts for scarce freshwater

Source: Annual Reports, Annual Sustainability Reports, 2016

Unresolved environmental problems may transform themselves into social problems: the example of water

○ Water is essential to mining.

- *Mining industry: the second industrial water users*
- *70% of the Big Six's mining projects located in water-stressed areas*
- *Readily accessible deposits exhausted. Reaching new deposits requires higher quantities of water and energy / ton of ore produced.*
→ *Higher risks of conflicts with local people on access to water*

○ Conflicts surrounding the use of scarce water exacerbate social problems and opposition to any mining project.

○ A mine's bad water management may result in lower health standards, lower school attendance and higher costs for disadvantaged people.

○ Saving water is a key parameter in mining companies' business plans. It is among the criteria that govern the award or renewal of most licenses to extract mineral deposits.

- *Several mining projects delayed or suspended because of water pollution.*



Most of China's coal reserves are concentrated in water-stressed or water-scarcity areas

Towards alternative water resources



Source: China water risk (based on 2012 China statistical yearbook & CWR analysis)

For any government, giving the go-ahead to a new mine will always create a number of dilemmas.

○ Mines are both “a blessing and a curse”.

- *At the national level, they present many advantages, but locally they offer mostly problems!*
- *There is clear conflict between opposing visions of the general interest: overarching national interest versus grassroots local interest.*
- *So the question is how to find an optimal balance between these two opposing interests*

○ It brings with it the issue of governance, which is essential but sensitive:

- *Every mining project sits at the intersection of a wide range of legitimate yet divergent interests.*
- *Thus, it is hard to reach at a consensus acceptable to all stakeholders*

○ Major groups are subject to strong political, regulatory and media pressures

- *For mining projects, the social acceptability has become as important as the other criteria (technical feasibility, economic viability, environmental protection...).*
- *The way that they deal with pollution and protect the environment determines the level of acceptability from local people, as well as the granting of licenses to mine deposits.*
- ***“Avoid, reduce, offset,” the mitigation sequence used for managing environmental damage, can also be applied to social questions.***



Part II – Case studies:
minimizing environmental footprint
and amplifying positive social impacts

Ghana (1): the contract with AngloGold Ashanti, the world's number 3 gold producer



Context

- *Iduapriem open-pit mine produces 6.2 tons of gold per year*
- *Abrupt weather changes, both in terms of temperature and rainfall.*
- *During rainy seasons, it's vital to avoid flooding the installations and polluting rivers*
- *In the past, maximum discharge thresholds were regularly exceeded, leading the authorities to shut down the mine on several occasions*

Contract

- *Contract start: 2014 – Renewal: 2016*
- *Objectives: to optimize, operate and maintain the water treatment facility, and to guarantee the quality of process water and treated water discharges*
- *Strict environmental standards to be met, in particular for cyanide (0.2 mg/l free cyanide, 1 mg/l total cyanide)*

Achievements

2014-
2016

- *Water treatment process upgraded*
- *Creation of a laboratory for analyzing water quality*
- **100% compliance with EPA discharge limit**
- *100% plant availability*
- *81% water recycling rate*
- *All Veolia's employees trained*
- *Zero accidents*



Ghana (2): enabling mining to continue and to deliver positive social benefits

○ A limited direct social impact:

- *We only employ 22 employees at the mine*

○ A considerable indirect social impact:

- *By meeting the environmental conditions required by the public authorities, we enable AngloGold Ashanti to maintain mining activities, bringing with it the chance to deliver economic and social benefits to local people*
- *Avoiding closure of this mine means:*
 - ❖ saving jobs for employees and suppliers,
 - ❖ continuing to redistribute wealth and thereby to raise local people out of poverty,
 - ❖ maintaining infrastructure providing access to essential services to local people
- *This is critical as one of the largest difficulties facing local people is the lack of employment.*



Australia (1): a joint venture to embed mine related activities in local communities

- In 2013, Veolia set up a 50-50 JV with Our Country, an Aboriginal-owned entity in Pilbara, Western Australia.
 - Named North West Alliance, this JV has signed contracts for cleaning and for hazardous and non-hazardous waste management with most of the region's major mining companies (BHP, Rio Tinto, Roy Hill...).
- A project located in one of Australia's major extractive regions.
 - Its 2016 exports were worth AUS\$36 billion, essentially from iron ore mining, oil and gas
- A region with numerous Aboriginal groups:
 - 11 % of Pilbara population is Aborigine.
 - Some 45% of the JV staff are Aborigine.
 - 12 of its suppliers are Aboriginal companies or communities.
- Contracts with the JV facilitate relationships with the Aboriginal groups, and help develop mining activities.



Australia (3): a CSR policy, designed to ensure that local communities benefit from meaningful economic spin-offs

- **Companies from the extractive industries turn to the JV to help improve their activities' acceptability.**
 - *They look on the JV as a mechanism for redistributing wealth from mining activities and for investing socially and economically in Aboriginal communities*
 - *It's also a way to prevent conflicts with local people and manage reputational risks.*
- **The Aboriginal communities pay the greatest attention to environmental protection:**
 - *Indigenous communities enjoy close ties to their natural environment.*
 - *The JV provides them with further assurances that tailings, which are processed on their lands, will be treated in accordance with acceptable environmental standards.*



Part III – A few lessons learned
about the environmental and social acceptability
of major projects



Copper mine, Butte, Montana

1 - Develop a true partnership approach

Involve stakeholders
from the very beginning

Consult in good faith,
not just for show

Be transparent,
provide exhaustive
information

Be open to
alternatives

Carry out
independent
studies



Contractualize
undertakings

Share
governance

Pay attention
to vulnerable
groups

Limit environmental
damage and enforced
movement of people

Provide first-rate offset
arrangements and fair
compensation

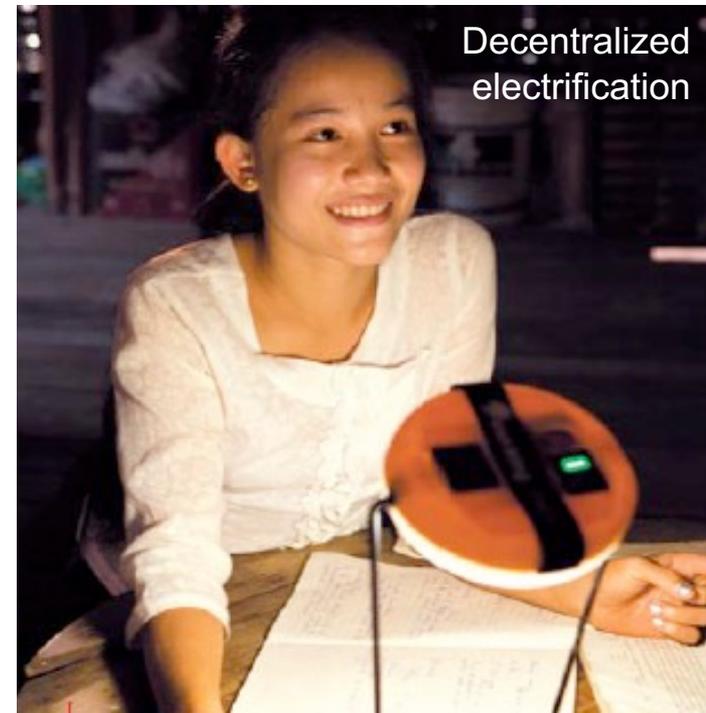
**The greater the collaboration,
the greater the acceptability of any mining operation**

Do you want a sincere dialogue, or are you trying to impose a decision that has already been made?

- **Some project owners try to push projects that have been tied up in advance, and are unwilling to make any substantive changes to them.**
- **The more a project is set up behind closed doors, the more likely it is to be judged illegitimate, and the higher the risk of encountering resistance.**
- **Strategic mining projects have one major advantage:**
 - *The support of the government, that have massive power compared to other stakeholders, including the ability to modify legislation to make it compatible with the proposed project.*
- **Proposals from the local community need to be taken into consideration as much as possible, even if this means modifying the initial project.**
 - *It's very important to obtain feedback from local people, so that the project can be fine-tuned and made more acceptable*
- **NGOs can play a crucial role in mining projects, helping to fine-tune project designs and facilitating appropriation by local people.**
 - *But, like major corporations, NGOs have to manage reputational risks!*

2 - From redistributed wealth to shared prosperity, from project acceptability to project appropriation

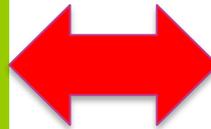
- **There is a gap separating beneficiaries (such as the State) from those who, on the ground, have to face the environmental disturbance.**
 - *But it's important to structure arrangements, so that those affected by negative externalities are also project beneficiaries, albeit in a different way*
 - *Inevitable environmental losses must be counterbalanced locally by economic and social benefits*
- **It's crucial to equally share the value created, making sure that a just share of the wealth created finds its way to local communities.**
- **Faced with a confrontation between opposing visions, the secret to social acceptability lies often in creating shared value**
- **Although this is never easy, it is nevertheless possible**
 - *The point is that everybody has their own idea of what is fair...*
- **One of the best way to share the wealth created is to share ownership of the project company.**



Finding a balance between extended wealth distribution vs risks associated

Various ways to share wealth

- Hiring local people as members of staff at the mine
- Using local suppliers and subcontractors
- Creating JV with local small businesses
- A health and education policy, targeting local communities
- Upgrading essential services in terms of availability and quality (water, electricity, roads...)
- ...



Various risks, which can revive opposition to a mining project

- High turnover among local staff, which lessens the economic impact per member of staff
- Recourse to a plethora of poorly supervised contractors (with the risk that a subcontractor's subcontractor fails to respect safety regulations...)
- Diversion to other regions (or other activities) of funding earmarked for local compensation
- Focusing on building infrastructure, not on services provided
- ...

3 - Make ambitious undertakings, and call in independent third parties to audit them

- **You cannot deliver strong policies with weak regulatory mechanisms!**
 - *Some countries, for instance Canada since 2009, have set out ambitious social and environmental strategies for the mining industry*
 - *But other countries, particularly emerging ones, lack adequate social and environmental legislation and effective governance structures*
 - *It's up to mining industry actors to make up for this shortfall.*
 - *This is something that major companies are usually keen to put in place. Being leading global companies, they cannot afford damage to their reputation,*
- **In setting up their own CSR charters, major companies contribute to fill the gap left by weak national and international rules.**
 - *Such initiatives have led to a number of environmental and social advances*
 - *Smaller companies may follow the lead set by larger companies*
 - *However, these undertakings are voluntary and self-selected*
 - *Credible audits carried out by third parties are probably the only way to prevent the suspicions of green washing or social washing*



4 - Maintain trust throughout the project

- **Although the acceptability of a project is determined at a very early stage, it remains in play throughout a mine's operational lifecycle**
- **Trust is vital during the full lifecycle of any mining project.**

Project preparation

Trust is a precondition for cooperation.

Legitimate institutions facilitate the establishment of trust.

No investment can be financed without trust.

Mine opening

The best way to win trust is action.

Immediate results strengthen trust with local people

Quick demonstration of the social added-value builds acceptance among local people

Mine operation

No partnership can last without trust.

Trust cannot be imposed, it has to be earned. It comes from listening to each other, matching words with deeds, respecting the undertakings made...

Community liaison officers have a key role, keeping in constant touch with locals, listen to their views, suggestions and complaints

Mine closure

Social impacts should include the post-mining period.

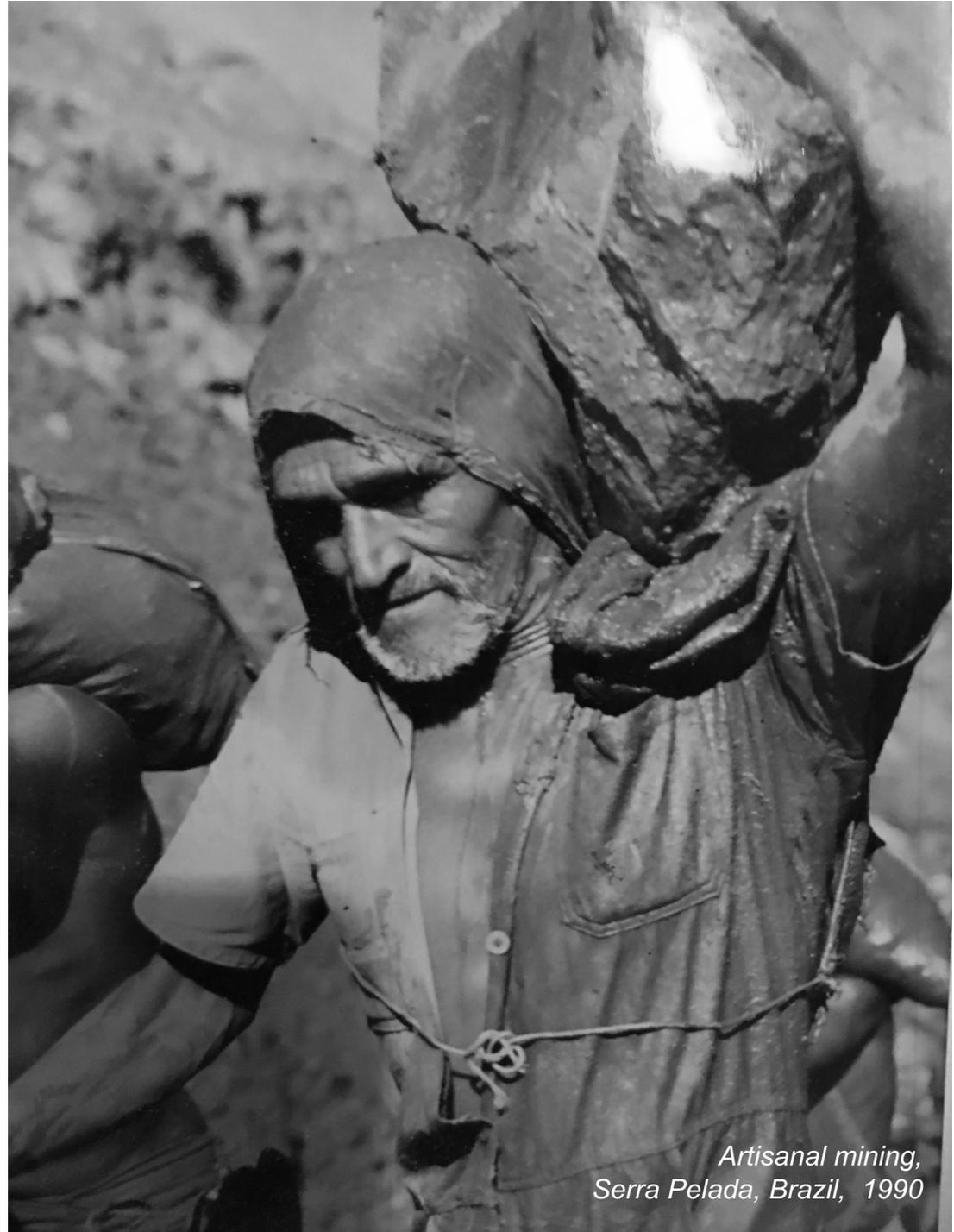
When the mine will stop, it will be a social drama for all those whose jobs depend on it, except if retraining programs are implemented

If the conditions for achieving social acceptability are known, why are some major projects still a source of great tension?

A large diversity of influencers and potential sources of opposition



Conclusion



*Artisanal mining,
Serra Pelada, Brazil, 1990*



Mine opening becomes more and more difficult: From geological scarcity to “social scarcity”?

o Artisanal mining ≠ major companies mining projects

- > 25 million artisanal miners, with 150-170 million people rely indirectly on artisanal and small scale mining
- A paradox and a key issue for regulation

o The question of orphan sites

- > 325,000 potentially contaminated sites in Europe, by mining and metal industries
- Orphan sites are environmental and sanitary bombs, ready to explode

o There always will be opposition to every open-pit major mining project.

- Because there will be social or environmental losses, that will attract criticism, no matter what offset mechanisms are planned.
- Facing opposition is part of the professional landscape for the extractive industries
- This applies more to major companies: **being questioned is a price of leadership!**

o More than any other, mining industry cannot ignore social issues.

- It is through the prism of how mining companies handle these questions, that the legitimacy of their right to operate a mine will be judged.
- Thus they must promote causes that seem to have little to do with their activities, but are in reality critical to its survival and development.



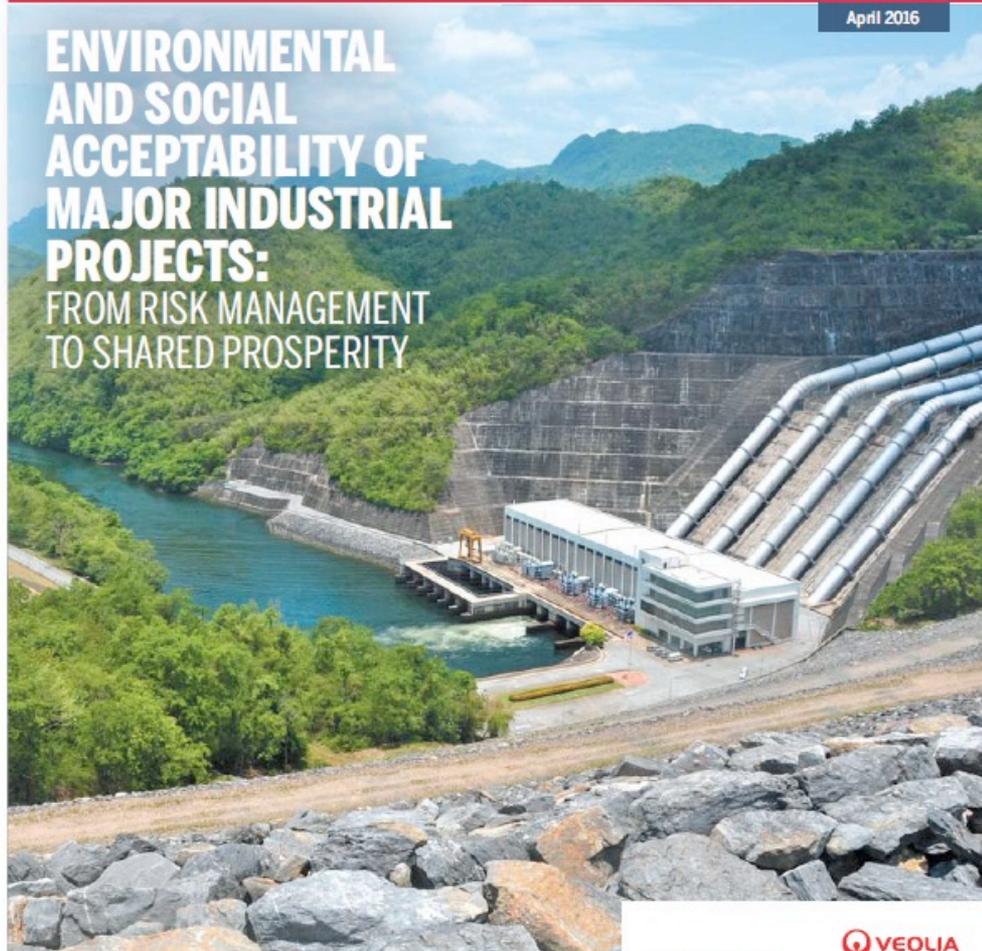
*Thank
you
for
your
attention*

FIELD ACTIONS SCIENCE REPORTS

**FACTS
REPORTS**

April 2016

**ENVIRONMENTAL
AND SOCIAL
ACCEPTABILITY OF
MAJOR INDUSTRIAL
PROJECTS:
FROM RISK MANAGEMENT
TO SHARED PROSPERITY**



Coordinated by David MÉNASCÉ

azao

**VEOLIA
INSTITUTE**

