



“The Metals industry in the sustainable operations era”

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- **A unique honour and opportunity for a representative of the industry**
- **Share an experience, convictions, a vision**
- **Special positioning from various viewpoints:**
 - The enterprise: ERAMET, a mining and metallurgical group
 - Trade organisations: FEDEM and A3M
 - Public consultation and engagement structures: Conseil National de l'Industrie, Comité stratégique de Filière
 - Multi-participant national consultative body: Economic, Social and Environmental Council (CESE)
- **National, European and global issues**



- **An inherently globalised industry**
 - Location of primary resources
 - Complex processes and technologies from mining through to finished products

**An essential industry serving strategic downstream sectors,
e.g. construction, aerospace, defence, transport, energy,
chemicals**

- **A global context characterised by:**
 - Growing demand driven by emerging countries
 - Harsh competition

- **For Europe and France in particular:**
 - Awareness of the raw materials issue
 - Conserve access, secure supplies
 - Develop recycling → an industry already participating in the circular economy
 - Support the durability and development of European and French industrial players

▪ Urbanisation of emerging countries

Construction of developing economies

- Infrastructure
- Transport
- Buildings

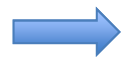


The ongoing industrial revolution in China, India and the other emerging countries

▪ Bearable mobility and growth

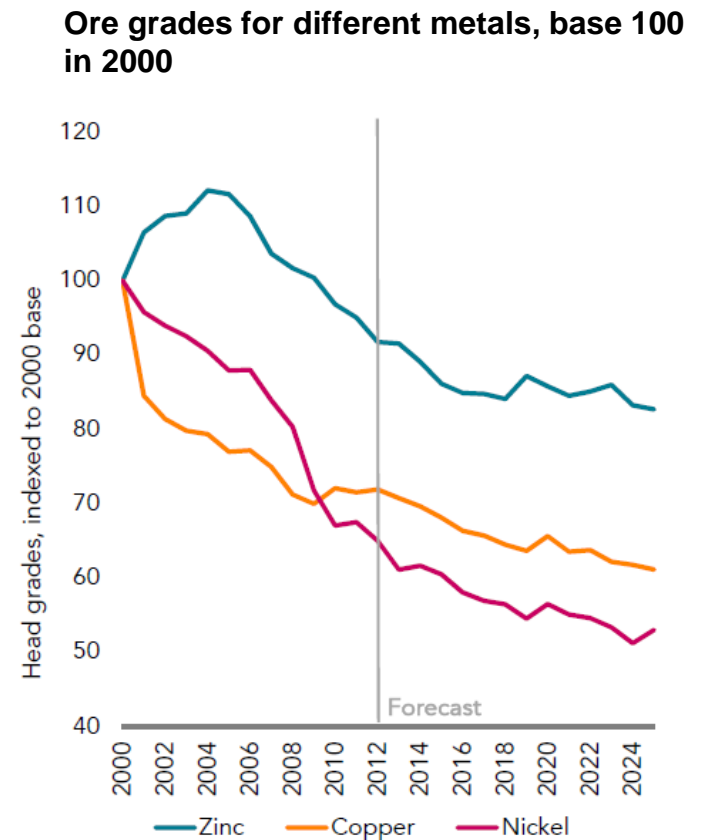
Reduction of environmental impacts in mature economies

- “Clean” energy
- Greater energy efficiency
- Energy storage
- Reduction of harmful emissions from human activity



Implementation of advanced materials and cutting-edge technologies

- **Current mines are on the way to exhaustion and suffering from the decrease in ore grades: the best deposits have already been exploited**
- **Deposits are more and more complex (more remote/isolated deposits, more infrastructure required, polymetallic deposits, complex processes)**
- **This higher complexity often means projects go over budget and schedule.**



Indonesia Imposes New Taxes on Metal Exports
The New York Times, May 4th, 2012

South Africa mulls \$75 per tonne chrome export tax

Metal Bulletin, 22 juin 2012

Western Australian Premier Colin Barnett has threatened BHP Billiton will not be able to expand its iron ore operations unless it agrees to pay the state government's higher royalties.

Mining Australia, 13 septembre 2011

India was formerly the biggest exporter of raw chrome to China until the Indian government clamped down on raw ore exports to facilitate local beneficiation,
Mining Weekly, March 7th, 2012



1. Dependency on monopolies in mineral resources is not desirable.
2. Need to develop resources to diversify supply sources
3. Long-term strategy of Japan or Korea:



- **European Union level:**

- 2008: raw materials initiative
- 2013: European Innovation Partnership for Raw Materials
 - ↳ R&D: a major issue for our industry
 - ↳ high French involvement



- **French level:**

- January 2011: strategic metals committee (COMES)
- June 2014: strategic contract for mining and primary conversion industries (CSF IEPT) signed
 - ↳ an approach involving private, state, academic, industrial, union participants
 - ↳ reciprocal commitments



- **Groups together players in the mining, quarries, metal production and processing, ceramics, cement, concrete and glass industries**
- **A sector contract organised along:**
 - **5 main lines:**
 - Line 1: strengthen and secure supply of primary raw materials for the entire industrial value chain
 - Line 2: continue developing a more efficient industry in terms of resource use from a circular economy perspective
 - Line 3: stimulate investment and innovation
 - Line 4: provide an ecosystem that is conducive to the sector's development
 - Line 5: improve the sector's image and increase its attractiveness
 - **34 operating actions**
- **A common goal: build a future for these industries, which play a decisive role in the industrial value chain**

- **An industry that is particularly concerned by the environmental side of sustainable development**
 - Extraction and consumption of natural resources
 - ↳ the post-mine issue
 - Use of potentially polluting processes
 - Production or use of possibly hazardous products

- **A little-known but far-reaching cultural revolution:**
 - The new issues in the license to operate
 - The birth of a new responsibility as regards products
 - ↳ license to market
 - ↳ new relations with customers across the value chain
 - ↳ higher scientific standards

- **For a mining-industrial player in the sector:**
 - Comply with host country laws
 - European Union and member states leading on high standards
 - ↳ Make sure the playing field is level
 - But extensive regulatory developments in all countries in recent years

- **Strict principles set down by major international financial organizations:**
 - World Bank group
 - ↳ performance criteria (SFI)
 - ↳ major project issues
 - ↳ prerequisite to financing
 - Major international banks
 - e.g.: financing coal-fired power stations

- **Performance criterion 1:**
 - **Assessment and management of environmental and social risks and impacts**
 - A full health, social & environmental impact study will be required for projects likely to have significant negative consequences
 - Produce a set of prevention, mitigation and management measures

 - Since the 2012 revision:
 - Emphasis on assessment and management of social and environmental risks and impacts.
 - Human Rights-related aspects enhanced
 - Clearer definition of stakeholders' expectations
 - More expectations concerning consultation needs and complaint settlement
 - Additional points on preparing for and responding to emergency situations.

- **Performance criterion 2:**

- **Labour and working conditions**

- In line with UN and ILO conventions (...)
- Mandatory conditions for workers (prohibition of child or forced labour, equal, opportunities).
- Health & safety monitoring.
- 2012 revision:
 - Clearer language overall.
 - No difference between migrant/non-migrant workers



- **Performance criterion 3:**
 - **Fight against pollution, responsible use of natural resources:**
 - Conservation of water resources and energy efficiency
 - Waste disposal
 - Preparation for and response to emergency situations
 - Greenhouse gas emissions.
 - 2012 revision:
 - New notions concerning “Responsible use of resources”, particularly for energy and water.
 - Close tracking of greenhouse gas emissions and carbon footprint.
 - Closer restrictions on the use of pesticides (WHO).

- **Performance criterion 4:**
 - **Community health, safety & security**
 - Cause no danger to neighbouring communities (infrastructures, facilities, hazardous substances).
 - Consider potential impacts and exposure to diseases (e.g. water-borne or contagious).
 - Have an emergency plan to protect people, particularly when local governmental agencies do not have this capability.
 - 2012 revision:
 - Connection with impacts on services provided by ecosystems
 - Effects made worse by climate change
 - Emphasis on notion of risks

- **Performance criterion 5:**
 - **Acquisition of lands and involuntary displacement**
 - The project must analyse the alternatives and make sure displacements are avoided or kept to a minimum
 - The project must avoid forced displacements.
 - Survey of affected population (and lands and property) and consultation.
 - Mandatory resettlement plan
 - 2012 revision:
 - No more reference to impacts
 - Plan for restoring means of subsistence resources in cases of economic displacement



- **Performance criterion 6:**
 - **Biodiversity conservation and sustainable management of living natural resources**
 - Necessary assessment of biodiversity impacts in the project's zone of influence
 - Defines notion of critical habitat
 - Generally requires mitigation measures to be designed to achieve zero net loss of biodiversity.
 - 2012 revision:
 - Better assessment of ecosystem services
 - Revised definition of Cat. 1 and 2 critical habitats; Cat. 1 generally prohibited zone for projects
 - Expected biodiversity offset to achieve gain
 - Offset to be examined and set up on site



- **Performance criterion 7:**
 - **Indigenous peoples**
 - Obligation to organise constant consultations with indigenous peoples and give them special attention
 - If a displacement is necessary, special considerations are required.
 - 2012 revision:
 - Prior informed consent now required in the event of significant residual impacts.
 - Traditional land claims (customary laws) cannot be recognised by national legislation.



- **Performance criterion 8:**
 - **Cultural heritage**
 - The project must support cultural heritage through internationally recognised practices for the protection, field study and documentation of cultural heritage.
 - There are specific requirements for “critical cultural heritage”.
 - 2012 revision:
 - Need for the community to have access to its cultural heritage.
 - Informed prior consent needed for a cultural heritage mitigation plan.
 - Offset options added.

- **Context and issues**

- **Industrial and mining activities** can have significant, irreversible impacts on local populations and the environment; they are the focus of **impact and hazard studies** (risk assessment).
- These studies are **in proportion to the project's issues**, the severity of its impacts, the sensitivity of the environment and the control over employees and populations' exposure.
- They are sent to the relevant authorities (prefectures, ministries, etc.) and financial institutions for **operating or financing licences**.



HAZARD



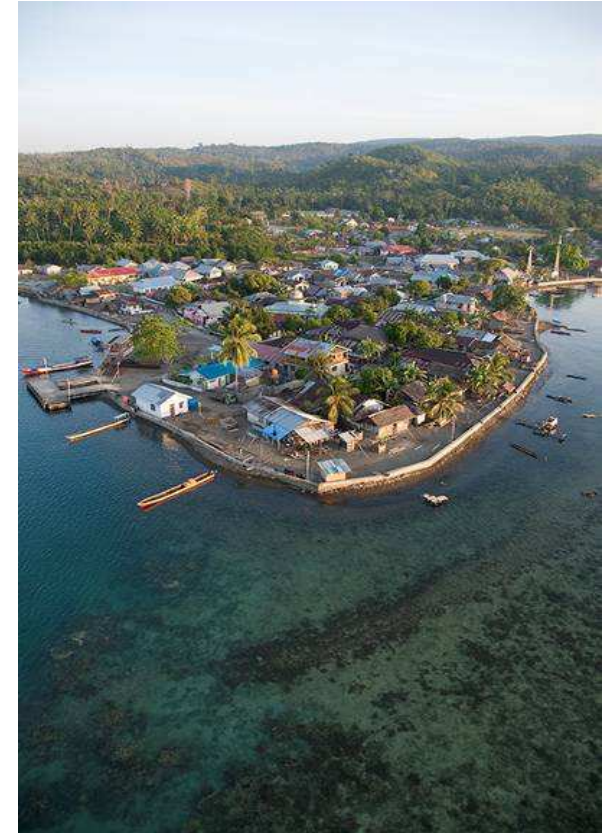
TRANSFER



TARGET

- **Baseline study**

- **Physical environment:** geo-morpho-climate context, erosion, hydrology, hydrogeology, landscape
- **Biological environment:** fauna and flora, land and marine (including ecosystem services), dust and noise
- **Human environment:** archaeology, socio-economic



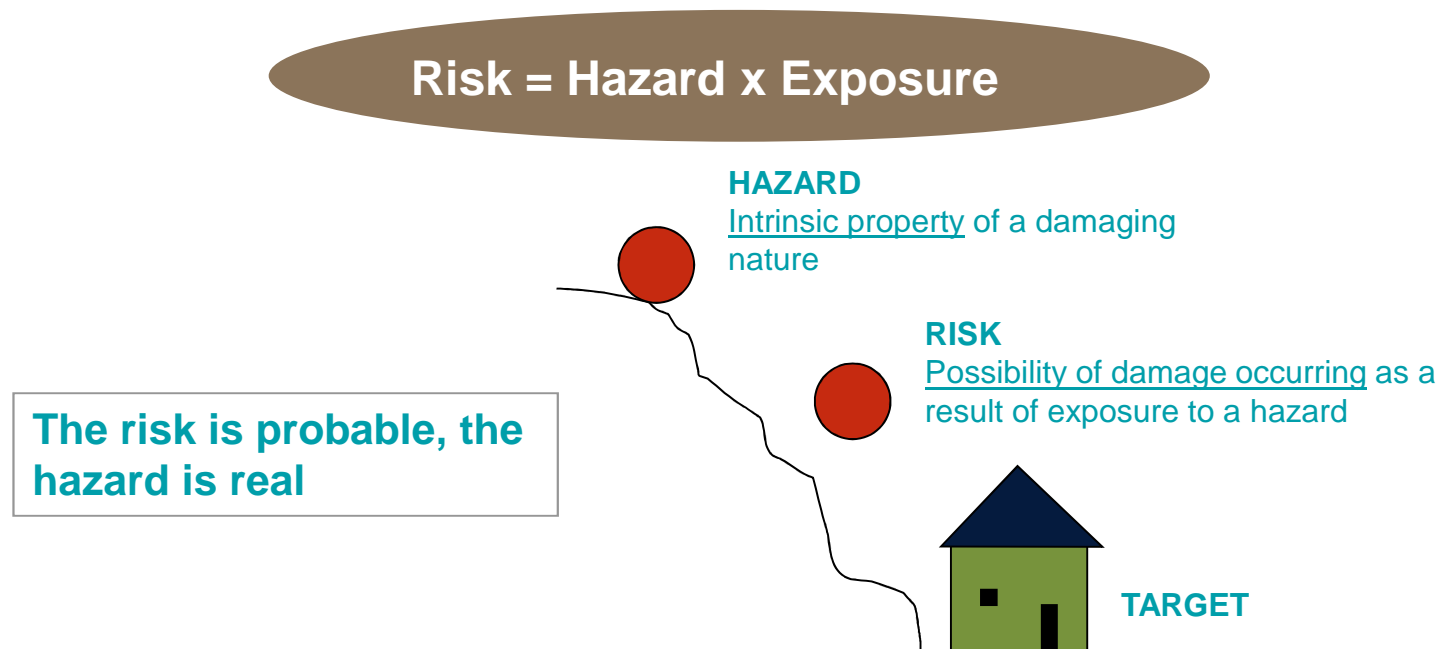
- **Health impact study**

- A tool used to assess a project's positive and negative impacts on **neighbouring community's health** (public health, sexually transmitted diseases, cancer, etc.).
- Can also be used to predict the consequences of the various options under consideration and make recommendations.
- “**Health**” under this study does not just mean **absence of illness** but also covers **wellbeing**.
- A population's health depends on various factors such as the country's culture, but also gender, living standards, air quality, noise pollution, access to work, medical centres, etc.



▪ Hazard study and industrial risk assessment

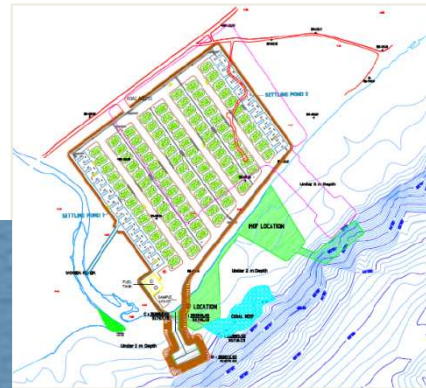
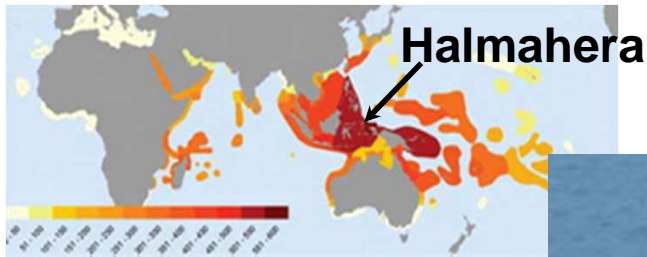
- **The hazard study** specifies the risks to which neighbours and the environment may be directly or indirectly because of the facility, whether for internal or external causes.
- This study gives rise to a **risk analysis** that takes into account the **likelihood**, **kinetics** and **severity** of potential accidents. Its content must be in line with the size of the risks generated.



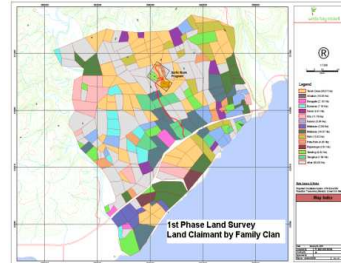
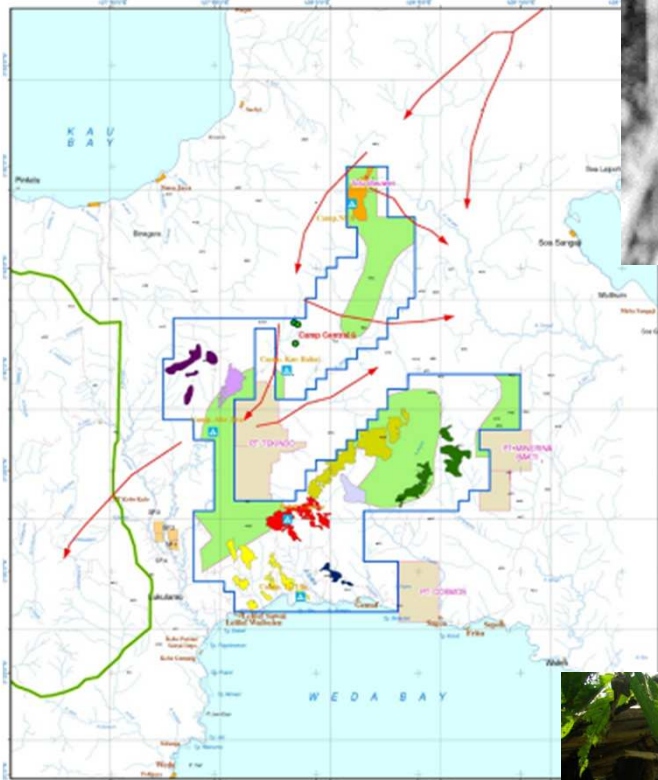
Environmental issues

Key zones of land, aquatic or marine biodiversity:

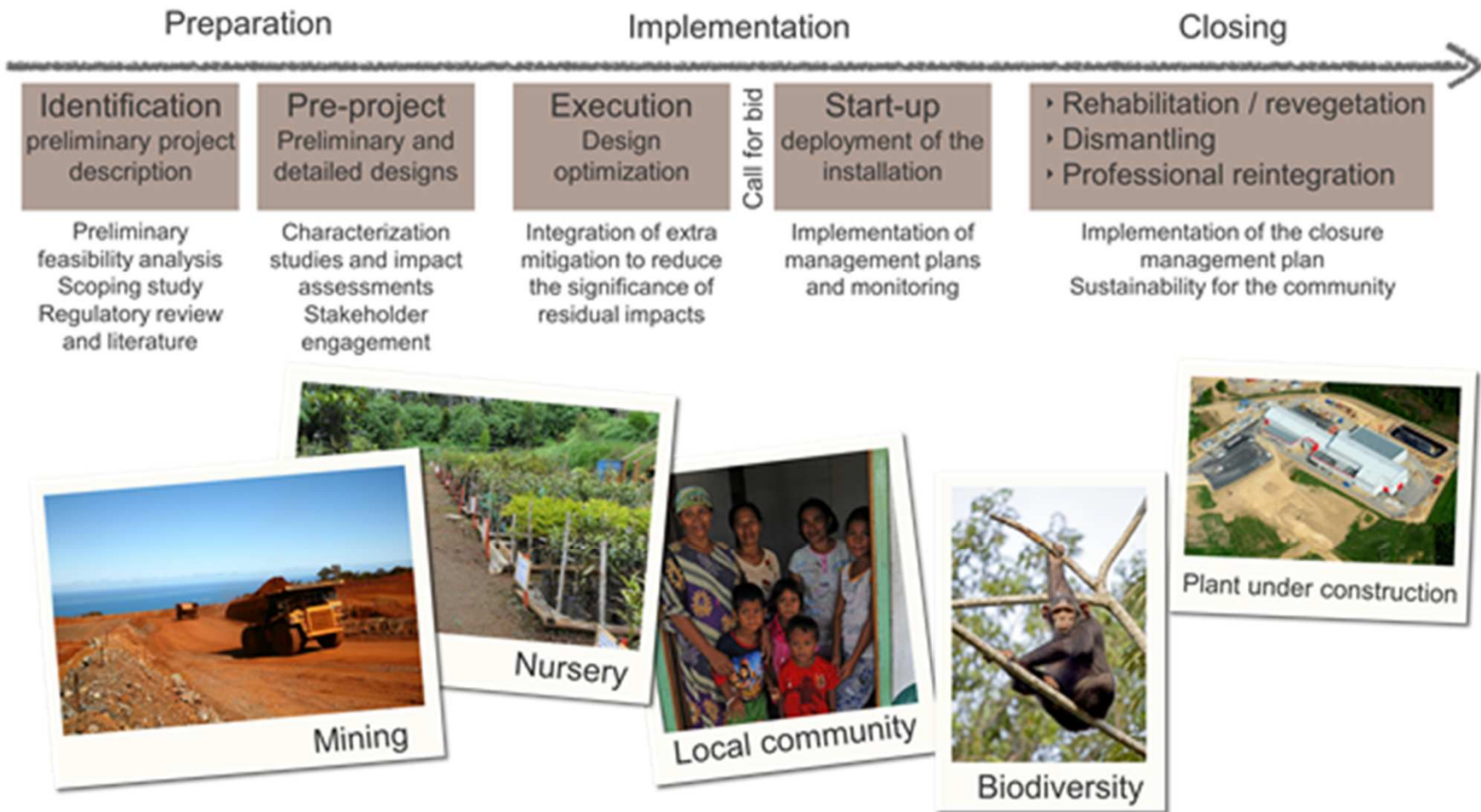
- Remarkable, endemic, threatened or endangered species
- Natural or critical habitats



- Social issues
 - Vulnerable populations and indigenous peoples



Successful project implementation: an integrated Sustainable Development approach

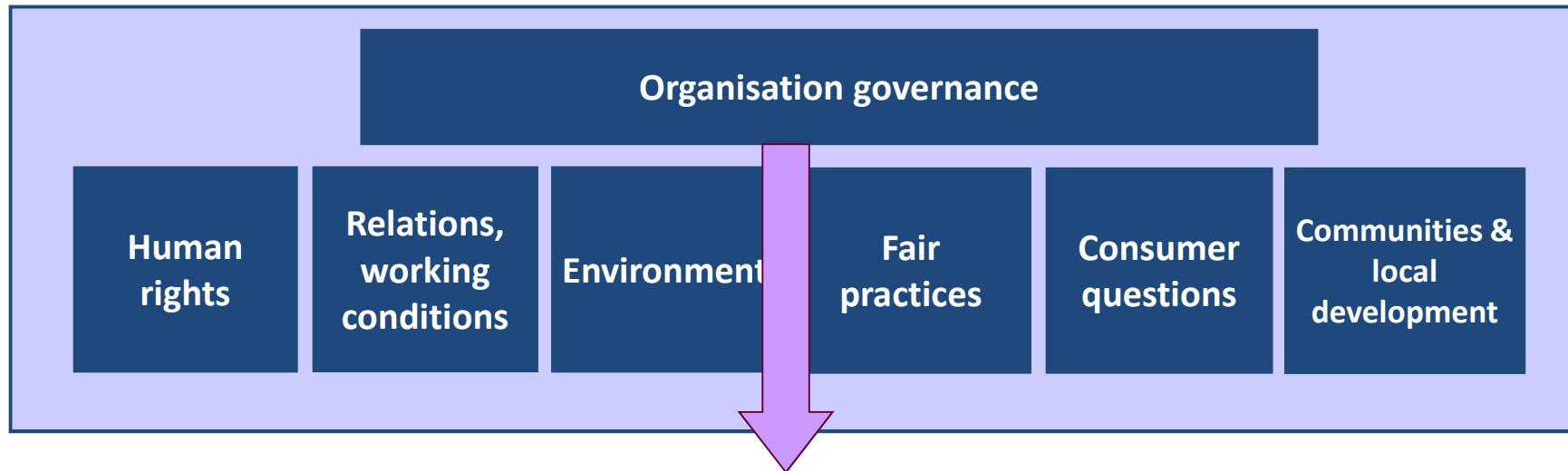


- **Compliance with the most demanding standards does not guarantee project acceptability**
- **The issue of fitting into the local environment**
 - Involve communities in value creation
 - Shareholding
 - Jobs
 - Taxation
 - Local content
- **Two risks to be managed:**
 - Hostile associations → the limits of dialogue
 - Excessive demands of host countries?



Social responsibility: 7 core subjects





- 1. Accountability**
- 2. Transparency**
- 3. Ethical behaviour**
- 4. Recognition of stakeholder interests**
- 5. Compliance with principal of legality**
- 6. Taking international conduct standards into account**
- 7. Respect for human rights**

Source: AFNOR

- **CSR principles are legitimate, provided that:**
 - **The rules of the game are comparable for all players**
 - ↳ non-financial reporting
 - ↳ transparency of payments
 - ↳ responsible purchasing
 - **Build trust through dialogue and listening**
 - ↳ don't try to regulate everything
e.g. duty of vigilance
 - **Adapt requirements to the context**
 - ↳ principle of proportionality
 - ↳ principle of subsidiarity
 - **Draw on best practices and voluntary initiatives**

- **A living, creative, adaptable industry, rooted in the challenges of our time**
- **A risk of impoverishment or even disappearance in developed countries**
- **The need to spread knowledge, understanding and acceptance of our industry**

Thank you, Collège de France!



ALLIANCE DES MINERAIS, MINÉRAUX ET MÉTAUX