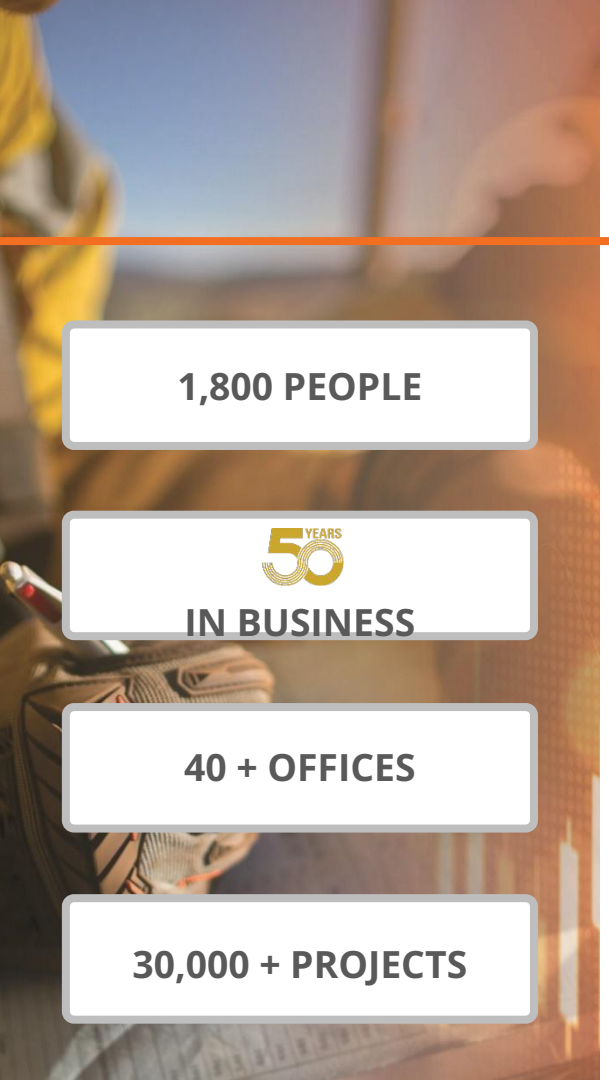

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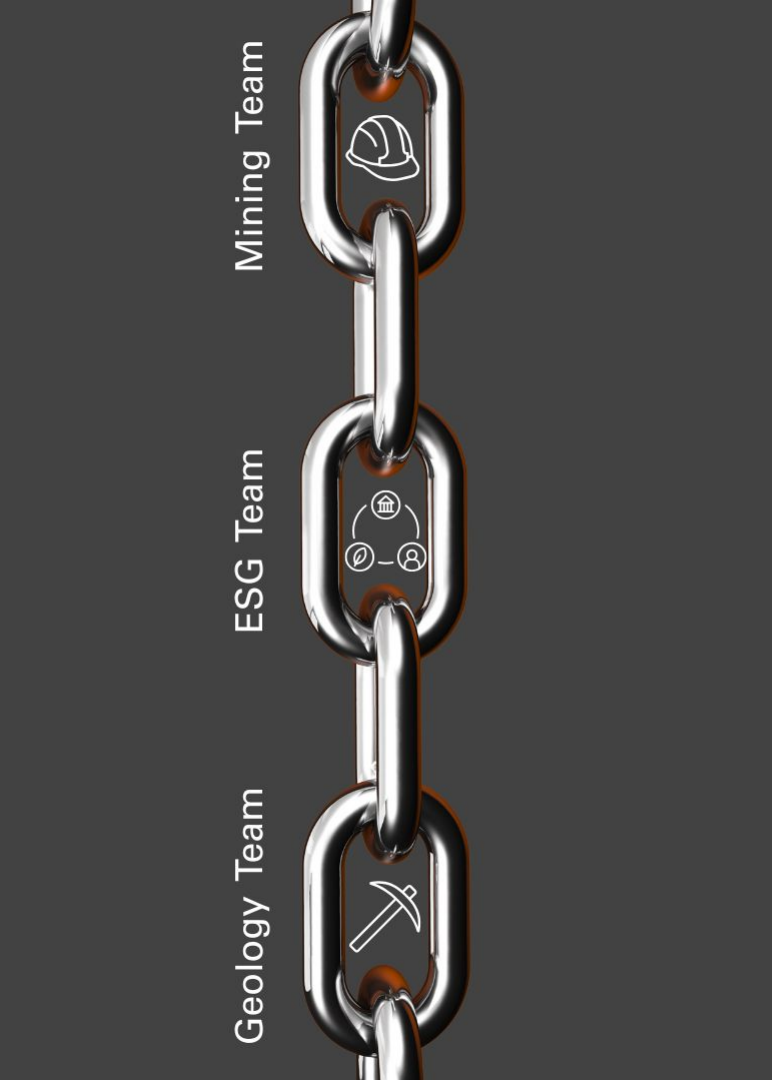
An independent, international group providing specialised consultancy services to the earth and water resource industries.

These services cross the mining project life cycle from early-stage exploration through development and operations to closure.



The Importance of Aligning Technical, Environmental and Social Studies – perspectives from Asia and Africa

Mrs. Anne Gimonet
Principal Consultant (Environment), SRK China

Mr. Wouter Jordaan
Principal Consultant (Environment), SRK South Africa

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Technical studies, Environmental and Social Studies: An Interconnected Process

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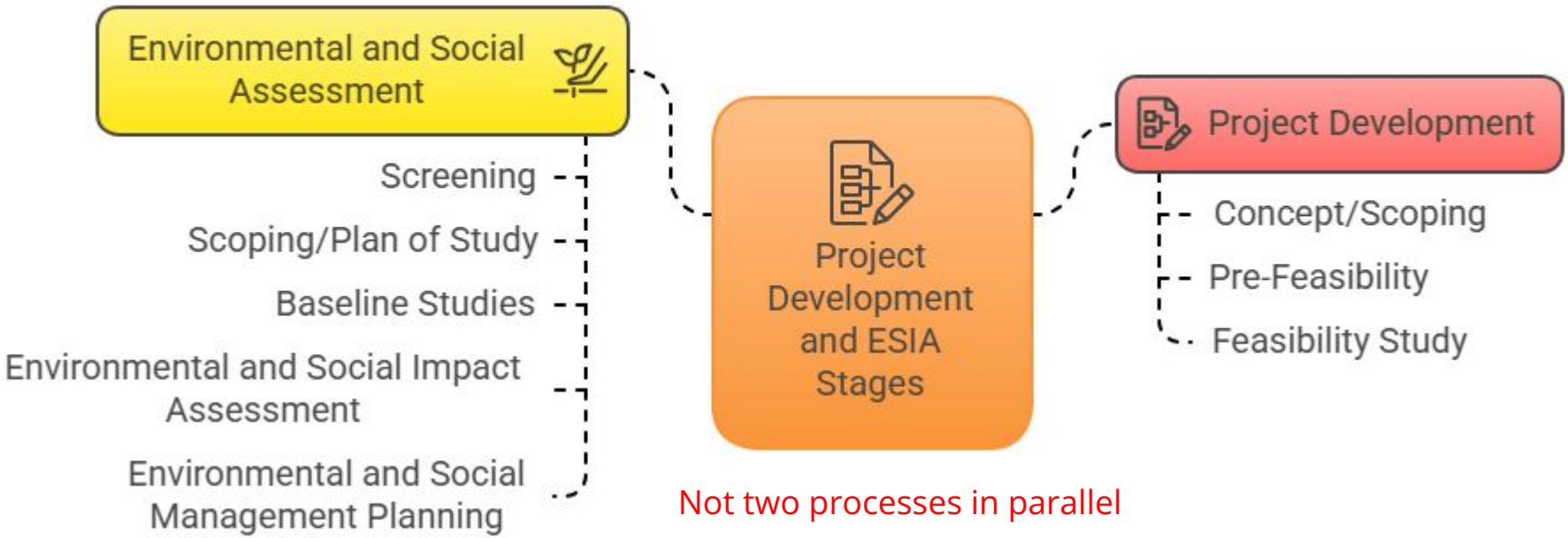
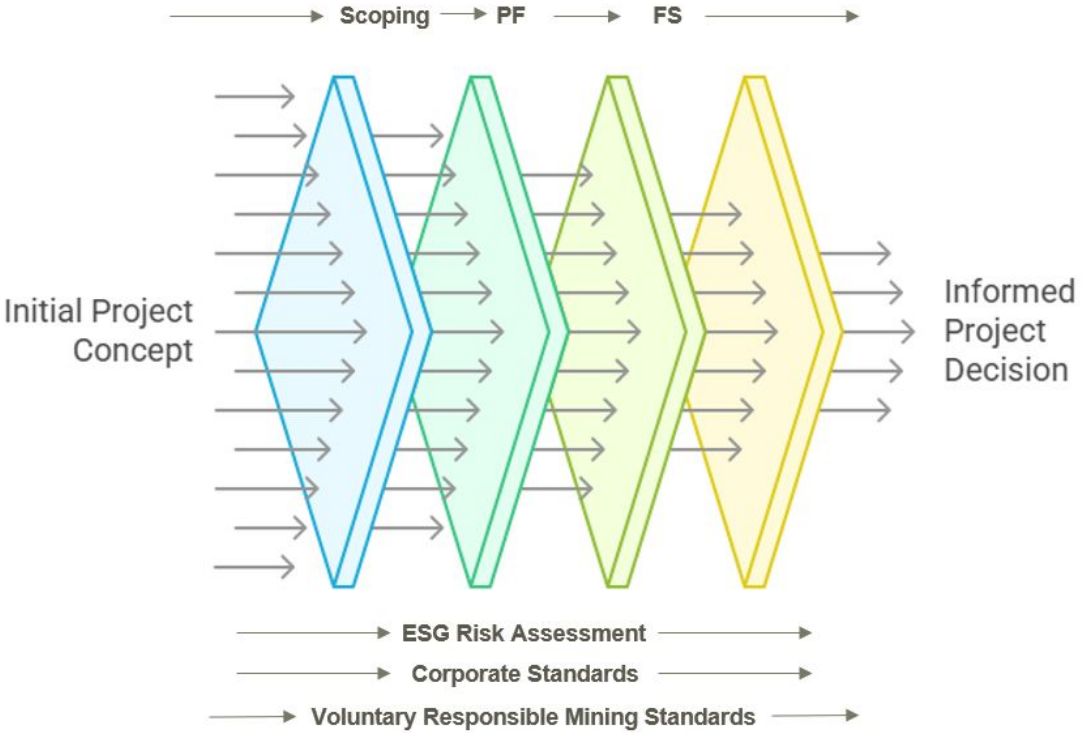
Mining project development

Mining project development decisions are informed by Feasibility Studies (PFS – FS)



How are Project decisions made?



Is the project feasible if you consider all material risks?

Which project scenarios will be left to work with?

Aligning Technical, Environmental and Social Studies

Why is it critical?

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Regulatory compliance

Alignment **required** by regulators in some jurisdictions

Regulatory bodies often mandate that economic, technical, environmental, and social factors be considered together

Regulators assess whether the ESIA aligns with the project's technical and financial feasibility

Include environmental mitigation and reclamation costs within the FS to ensure compliance

Avoid regulatory delays

Stakeholder requirements compliance and disclosure

- Feasibility Study required by lenders
- International Standards require feasibility studies to address key environmental and social issues
- Blended finance (multiple lenders, multiple requirements)
- Responsible mining standards and supply chains - uptake in Africa, advantage?

Optimised decision-making

- **Design out impacts** (operational cost reduction)
- **ESG data** – Use Baseline/ESIA findings to optimise FS, mine design, tailings management, water usage, etc.
- **Management** – Incorporate adaptive/innovative management strategies to mitigate project risks
- More **realistic 'feasibility'** and early fatal flaw identification

Aligning Technical, Environmental and Social Studies

Three key elements

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Aligned project description

Project description in ESIA **must match** the FS

Ensures **accurate impact evaluation** and appropriate management plans

Impact assessment depends on the **final** project description

Addressing all **material issues (valuation)**

Timeline alignment

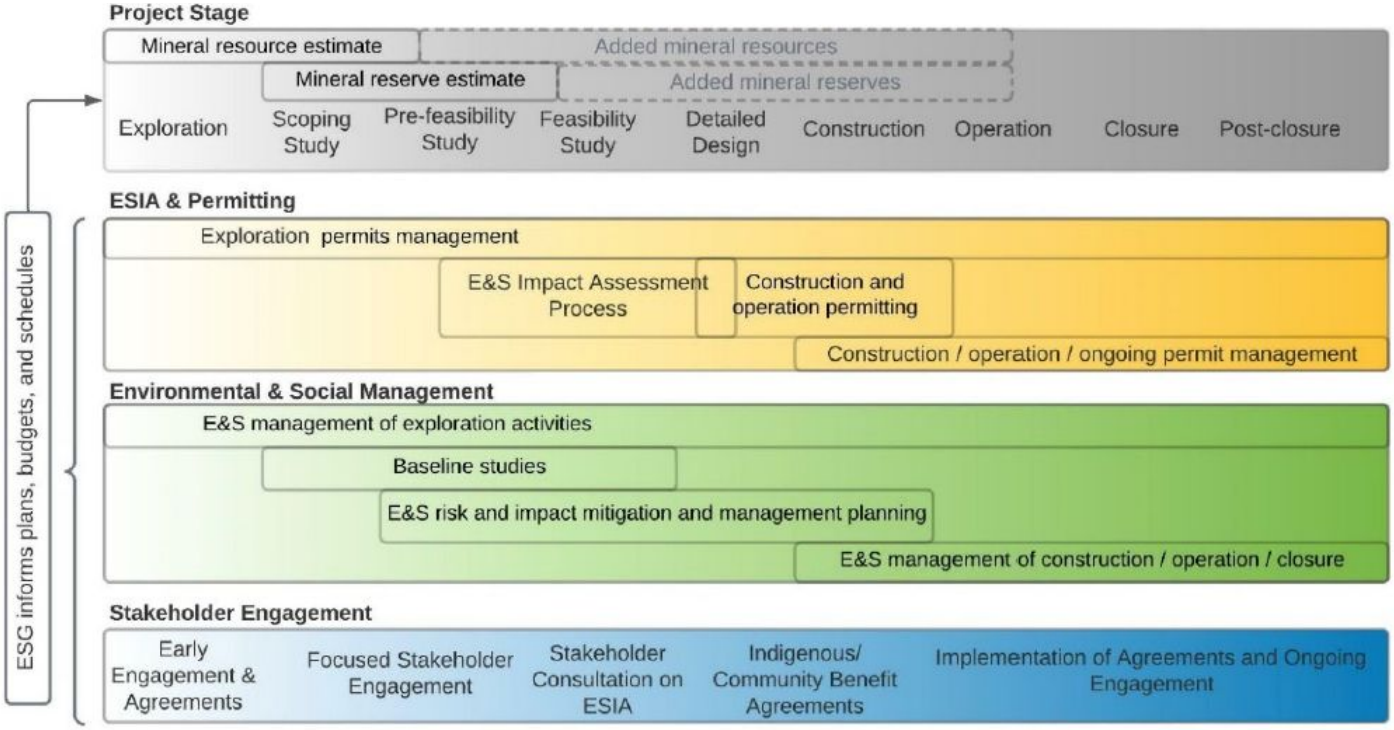

FIGURE 1: GENERAL ALIGNMENT OF ENVIRONMENTAL AND SOCIAL ACTIVITIES WITH PROJECT STAGE

- East and West approach timelines and risk differently
- Linking corporate and mine
- Geopolitics – rapid decision-making
- Acquisition induced time misalignment
- Type of financing (self / external)

Source CIM ESG Guidelines for Mineral Resources and Mineral Reserve

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Social Licence to Operate (LTO) in Valuation

- Early Stakeholder Engagement and throughout the process
- Risk associated with lack of engagement
- Insufficient financial provisioning to meet commitments made to communities
- Impacts on community (dust, water, noise, …) can be designed out if understood early on
- Potential conflicts with the community

Aligning Technical, Environmental and Social Studies

Learnings

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Key Aspects Affecting Valuation

- Material risks from Baseline Studies
  - E&S constraints that may influence mine design – design out risks
  - As a safeguard against future liabilities
- Acquisitions: Pre-existing, current and latent liabilities (from Environmental and Social due diligence)
- E&S impact assessment, risks and mitigation measures/monitoring
- Social commitments/cultural heritage and management costs

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Key Aspects Affecting Valuation

- Groundwater modelling of pit dewatering to inform stormwater design
- Geochemical results and contaminant transport model inform ARD measures
- Air, noise, vibration, blasting modelling -> identify communities that may be affected -> resettlement
- Risks such as radiation, asbestos etc.
- Land Tenure

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Financial Aspects Affecting Feasibility

FS financial model considerations:

- Social: Cost of resettlement and livelihood restoration
- Cost of specialist studies and monitoring
- Cost of Environmental and Social permitting, licence, audit, standard compliance
- Closure and rehabilitation costs and guarantees

Adaptive Mine Planning

Tailings Management – Implement best practices for tailings storage, including dry stacking or filtered tailings to reduce environmental risks. Ensure long-term stability and integrate progressive rehabilitation strategies

Water Usage – Optimize water recycling and treatment to minimize freshwater withdrawal. Design systems for efficient stormwater management and prevent contamination of local water sources.

Biodiversity & Land Use Planning – Design mine infrastructure to minimize habitat disruption and support ecosystem restoration.

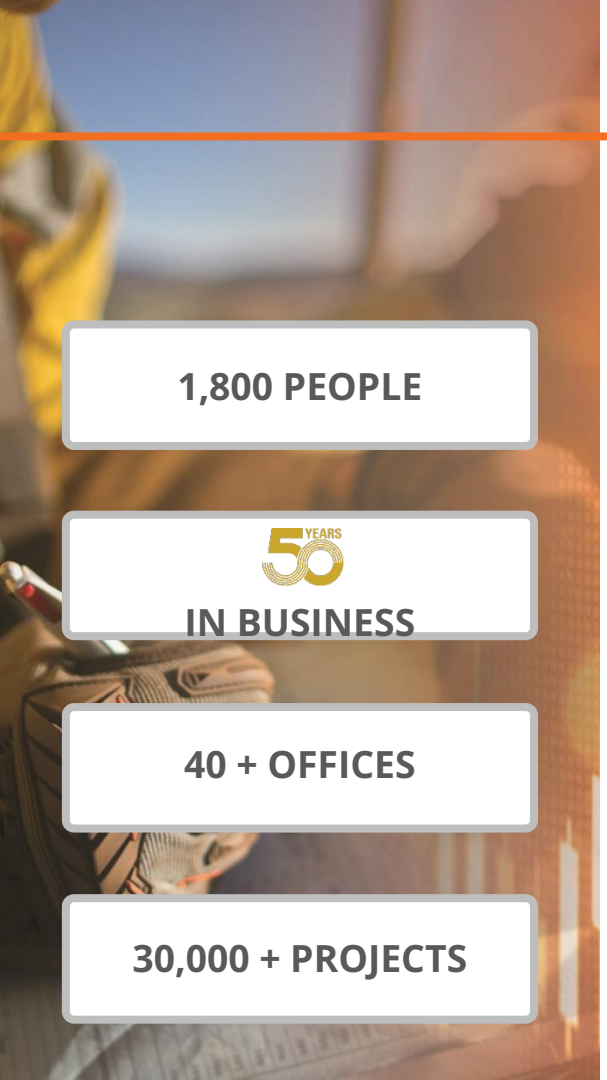
Adaptive Mine Planning

Energy Efficiency – Prioritize renewable energy sources (solar, wind, hydro) and integrate energy-efficient technologies to reduce carbon footprint

Community Engagement & Social Impact – Incorporate stakeholder feedback to enhance social acceptance and reduce conflicts. Design mine infrastructure to minimize community disruption & resettlement

Climate Resilience & Adaptation – Account for climate change risks, including extreme weather impacts on mine infrastructure and water availability

Mine Closure Planning – Embed post-mining land restoration strategies into early project design to ensure long-term sustainability



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Thank You

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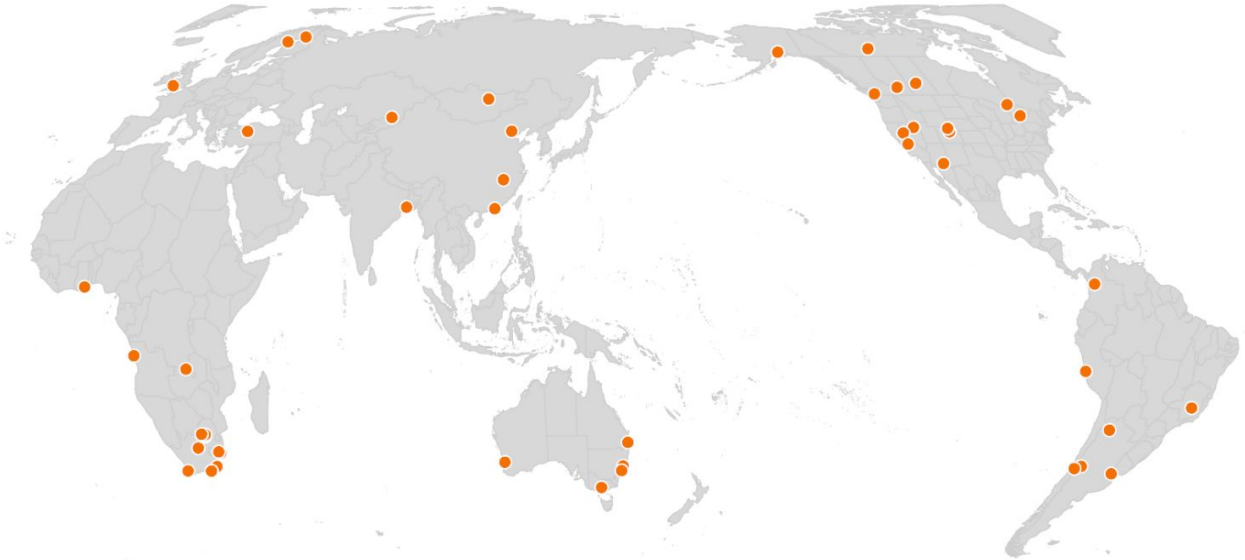

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