

ESG

An overview for CRIRSCO

Opportunities and challenges for trustworthy and relevant minerals reporting

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INTRODUCTORY REMARKS

We are here to provide an overview and opportunity to discuss how best to empower and support CPs to deal properly with ESG.

Currently PERC is moving towards clearer integration of ESG in the standard and clarification of the roles and responsibilities of CPs in this area. SAMCODES has developed SAMESG which provides guidance to CPs on how to report ESG issues effectively, and is working to build on that. PERC and SAMESG are aware that other NROs are having similar discussions and we are all drawing informally on each other's experience.

It's timely to widen and formalise that conversation within CRIRSCO and we hope that this presentation and the discussion we're going to invite you to participate in at the end will be a springboard for deciding how we go forward with this. CRIRSCO is an established 'trusted brand' for mining companies making public disclosures and those that regulate those disclosures. But CRIRSCO needs to retain and develop that 'trusted brand' status by responding to changing needs and risk appetites amongst investors and calling mining companies to account by reference to the standards to which they aspire.

Outline

- What are Environment, Social, Governance (ESG) issues and what do investors reasonably want to know about ESG performance?
- ESG is all there in the current CRIRSCO Modifying Factors; CPs are already considering this, so why the song and dance?
- Building on SAMESG – what further guidance, support and awareness building about ESG is needed for CPs, investors and companies?
- Discussion:
 - What are the opportunities for CRIRSCO to further drive best practice reporting standards to meet current and future investor expectations?
 - What's the plan....?



<https://www.bbc.co.uk/news/business-53885695> (article 24th August 2020)



The image on the right of the picture was part of an article on the BBC website on 24th August 2020 with the caption: “Juukan Gorge cave site before and after mining works”. In fact the bottom picture was after stripping but before the blast that destroyed the rock shelters – it represents the point of no return in the destruction of a site with evidence of human habitation 46,000 years ago.

Pyramids – 4,500 Stonehenge years ago 5,200, Machu Picchu 600, Great Wall of China 2,250, first human settlement at Uluru 10,000 years ago.

Other than that it is clear that this reputational, cultural and social performance disaster came about through a colossal failure of governance, this case history is still unfolding. However, it seems to us to represent as significant a source of wake-up calls and lessons as Bre-X did in the 1990s and the Brumadinho dam disaster in 2019. There are hard lessons for mine companies (not just Rio) to learn around trust and living up to their own policies and standards, rather than just falling back on doing the minimum that is legal. There are lessons too for ‘brand CRIRSCO’ not only in development of the reporting codes and standards to better guide the CPs to meet the core principles whilst meeting the needs of companies and investors, but also in the areas of awareness raising, guidance, education and training of CPs on ESG issues.

What is ESG?

How is it relevant to mining project risk?



Environment

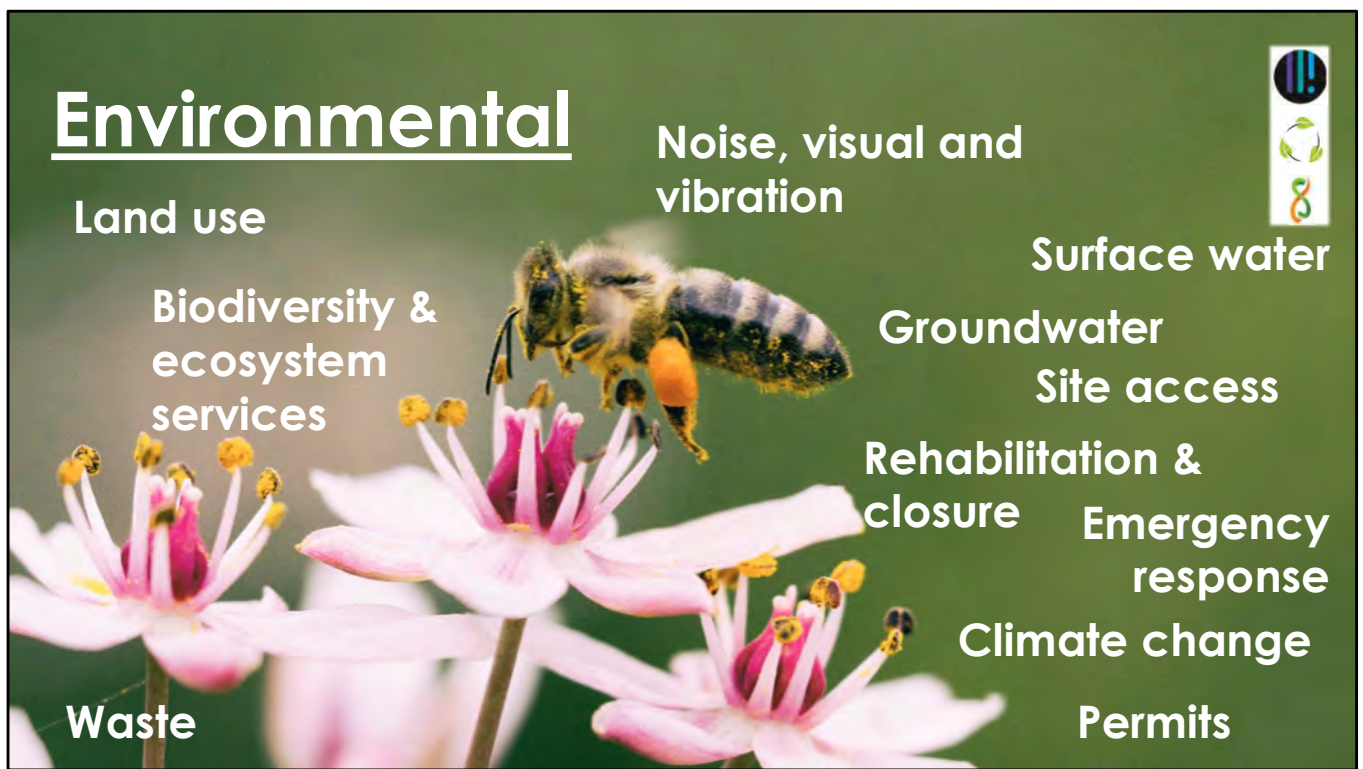
Social

Governance

Environmental, social and governance issues seldomly fall exclusively into one bucket. They are reflected here as an intertwined rope to demonstrate the interconnectedness between the disciplines.

Governance is viewed as the third strand as it is a critical driver of performance in the environmental and social space.

ESG as a concept has been around for decades but it has been called various names – from Corporate Social Responsibility to Sustainability and now ESG.



Environmental typically includes the aspects listed here. Some examples that particularly interface with society include water resources, whether these are surface or groundwater resources (and the associated quantities and qualities) and rehabilitation and closure which drives the range of viable land uses once mining has ceased.

The mining community is intimately familiar with the challenges presented by management of wastes and the consequences of failure to do so effectively.

Biodiversity is the variety of life on earth and the resulting services that natural capital provides for our existence and desires. Ecosystem services provide a range of benefits for local and more removed communities – a clear illustration of the overlap between environmental and social.

Noise, visual and vibration impacts are usually considered under the umbrella of an environmental impact assessment and impact human as well as local faunal receptors.

Ground and surface water availability, quality and potential for use and likely impacts.

Site access can cause a number of impacts to various environmental aspects

Climate change considers not only how a project could contribute to climate change but also what changing climate means for the environmental attributes in the project's host environment.



In the social space impacts are largely related to the proximity of people to a specific activity. Close contact manifests in health and safety concerns for employees or the need to resettle communities in order to access mineral deposits.

Stakeholder engagement and the manner in which this is undertaken often defines the relationship between the company and surrounding stakeholders

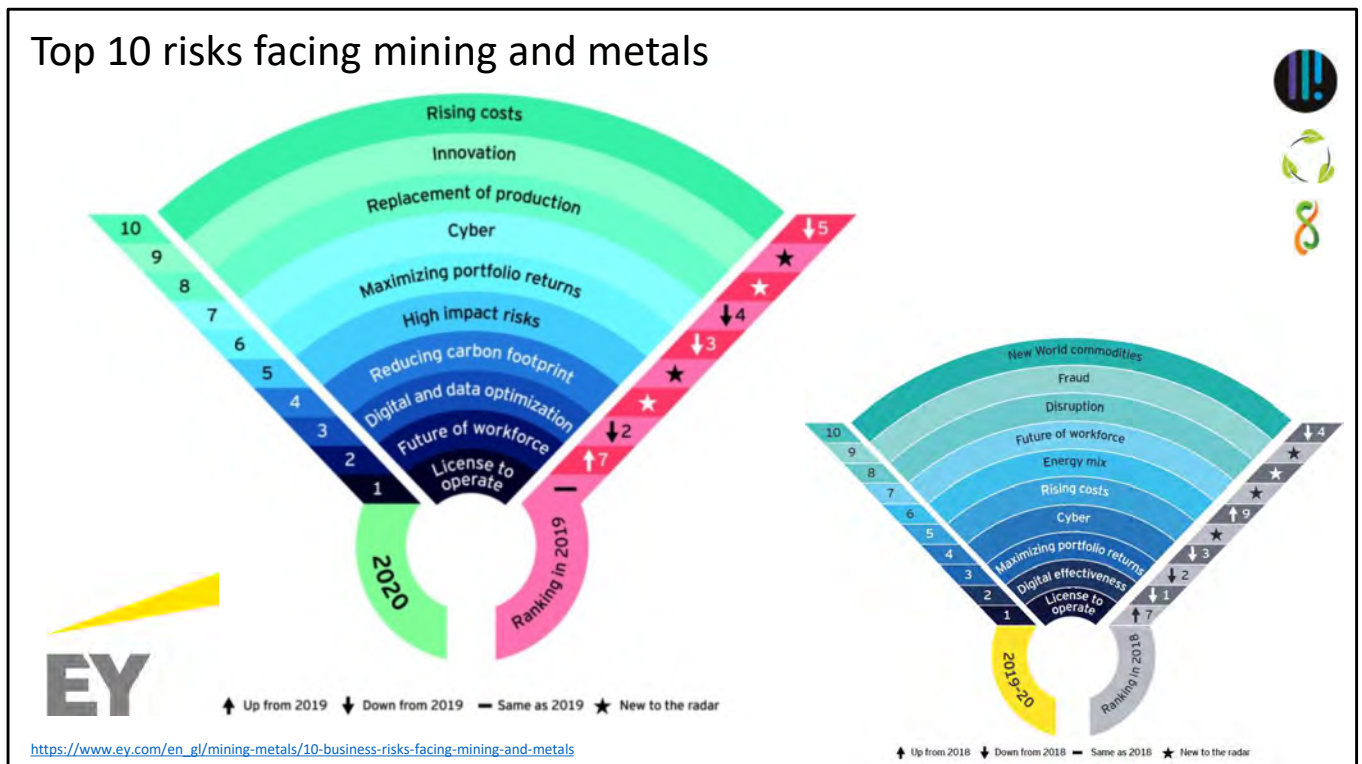
Emergency response is another overlap with environmental – what impacts could a mine emergency have on local communities?



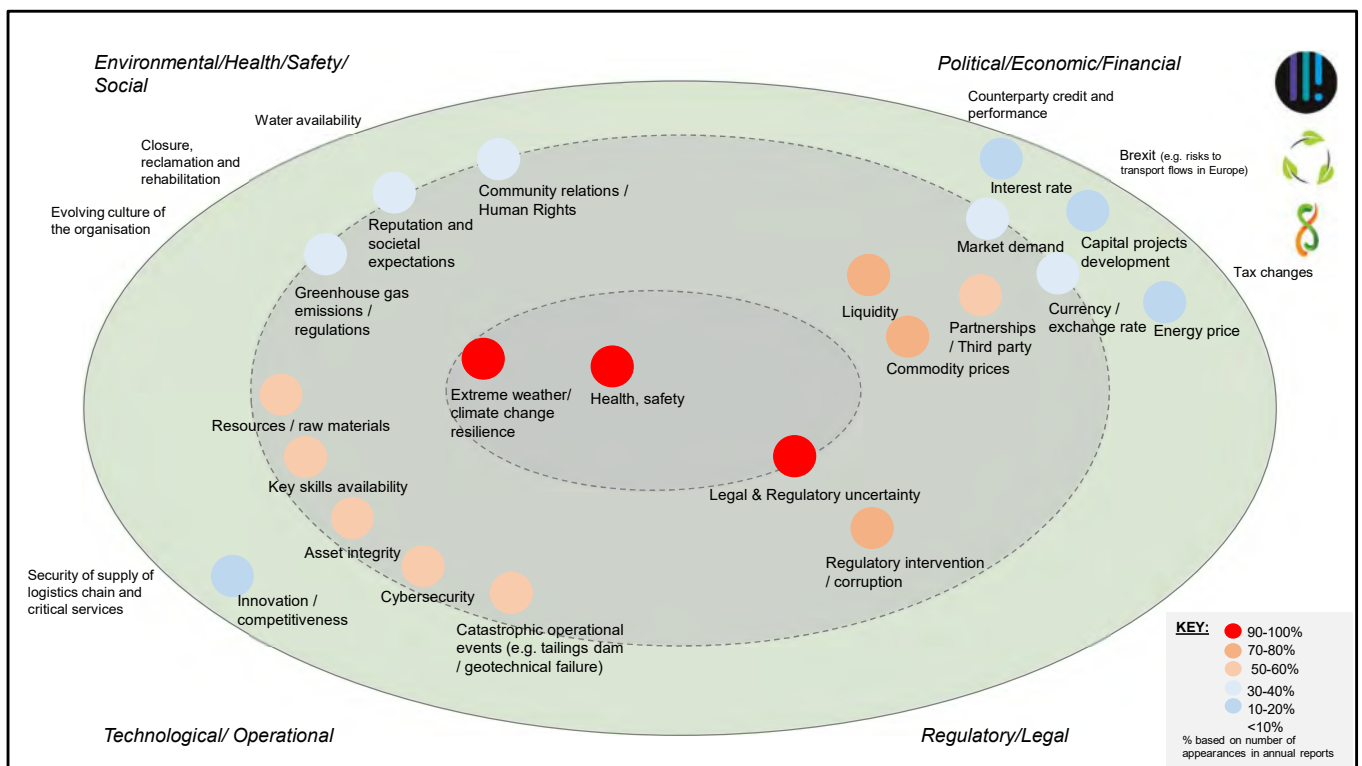
Governance considerations determine the DNA of the company and usually its policies in respect of E and S. how a company is governed and the manner in which it conducts its business directly relates to the confidence that investors will have in the ability of that company to be good caretakers of its investment.

Internal company controls, ethics and compliance status including in respect of environmental and social aspects drives the reputation of the company as a good neighbour and worthy investment.

Top 10 risks facing mining and metals



EY regularly prepares a report detailing the top risks facing the mining industry. Many of these are directly or indirectly related to topics typically falling within the ESG banner. It is notable that Licence to Operate has remained in the top spot for the last 2 years. Interestingly this risk shot up from number 7 in 2018 to take the top spot. A new risk relating to the need to reduce a mine's carbon footprint arrived this year and is related to the energy mix risk raised previously.



This is a collation of risks as reported by some of the larger mining companies in their most recent annual reports (2018 / 2019). (Source: Satarla 2020)

Whilst there is much congruence, there are still many risks which should be more common across all companies. Typically the industry is reactive in the risks included on risk registers so it would be interesting to see what is reflected in a years' time.

Rio Tinto
 South32
 Glencore
 Anglo American
 BHP
 LafargeHolcim
 Boliden



“The growing palpability of shared economic, environmental and societal risks signals that the horizon has shortened for preventing – or even mitigating – some of the direct consequences of global risks”

Børge Brende, President, World Economic Forum

2020



■ Economic ■ Environmental ■ Geopolitical ■ Societal ■ Technological

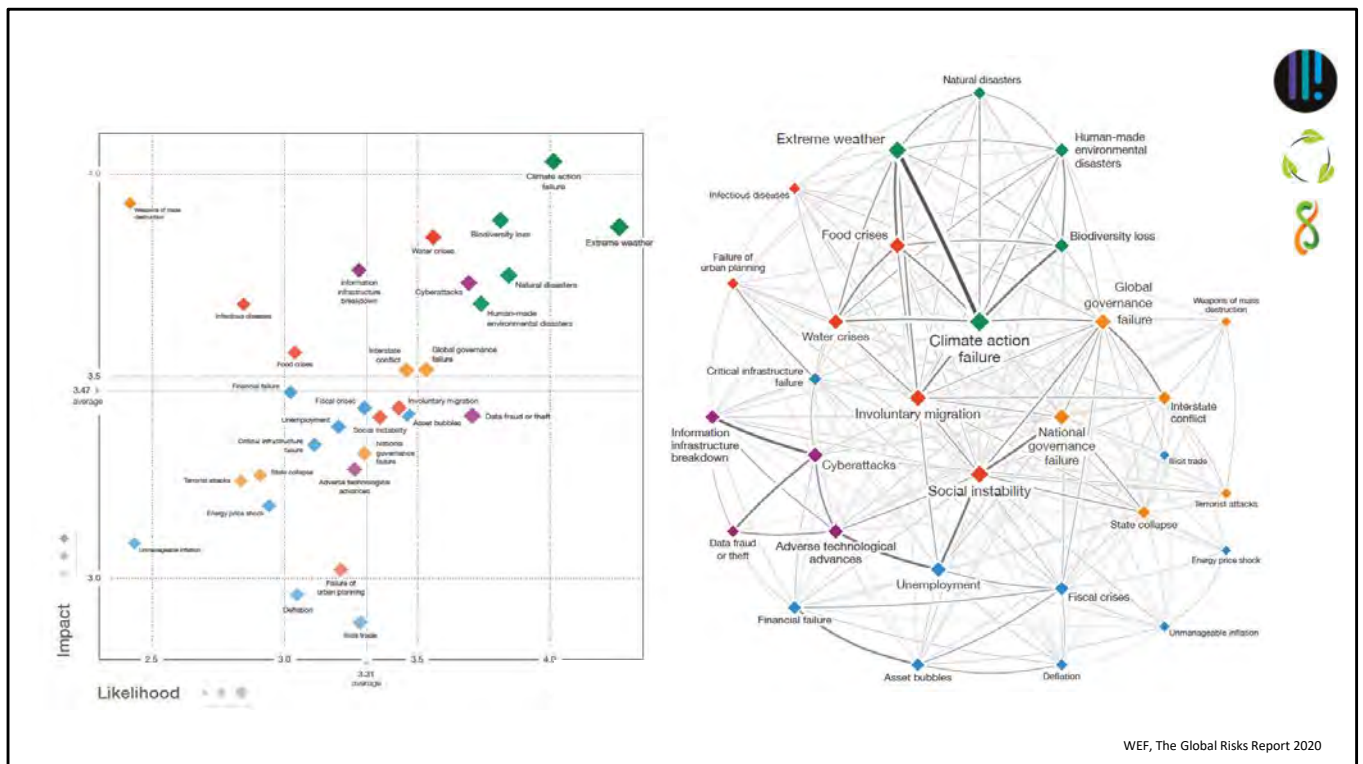
Top 5 Global Risks in Terms of Likelihood



WEF, The Global Risks Report 2020

For the first time in the 15 years that the World Economic Forum has been presenting their Global Risks Report, respondents to the Global Risks Perception Survey have ranked all of the top 5 risks in terms of likelihood from a single category. Whilst these risks are presented here as all being of an environmental nature, the interconnectivity of risks (next slides) illustrates that these risks do not exist in isolation of each other.

As the WEF President points out, time to address many of these risks is fast running out and collective action is required to address these.



The first image depicts the detailed ranking of the top risks identified in the WEF GRR in terms of expected impact and likelihood. This figure confirms that the environmental risks that responders to the survey believe are the most likely to occur will also have significant impacts if they materialize.

These risks, which are classified as environmental (green) do not exist in isolation. They are interconnected to a greater or lesser extent with the other risks identified in the report. The thickness of the lines indicates the strength of the connection between risks. As with all risks, each individual risk may be a contributing cause to or a consequence of the manifestation of other risks – for example failure to address climate change can result in increased loss of biodiversity or increased frequency and intensity of extreme weather events.



Investors and shareholders are demanding more from companies than simple legal compliance. They have significant influence over companies with whom they've entrusted their money. So what do they think of ESG?

OUTPERFORMANCE

THE RISE AND RISE OF ESG INVESTING

The pandemic has accelerated the momentum of sustainable investment strategies, but widespread adoption will depend on proving that socially responsible investment returns are superior over the long term



INTEREST IN RESPONSIBLE INVESTING HAS GROWN

The last few years have been explosive for ESG investing. Investor interest in sustainability strategies has led to a record number of related assets under management expected in 2020



15%

more investment per month recorded in companies with good sustainability ratings than those with poor ratings between 2016 and 2019

ABN AMRO/Saïd Business School 2020

Investors have been interested in the ESG performance of companies (not only mining companies) for some time. This focus has increased in recent years and has been somewhat catalyzed as a result of the Covid-19 pandemic. Morgan Stanley reports that there has been a 14% increase in investor interest in sustainability strategies in just the last 4 years. Companies looking for investment are seeing the benefit of good sustainability ratings in that they're able to attract more investment.

Investors are concerned about Environmental, Social and Governance (ESG) performance...

We see sustainability as a macro thematic trend that is fundamentally reshaping the competitive landscape across all sectors

Old Mutual

ESG issues have become much more important for us as long-term investors

CEO of State Street Global Advisors

In several instances, rating downgrades and Negative Outlooks have followed major ESG controversies. Growing scrutiny of ESG risks could lead to a higher cost of capital for issuers deemed to have insufficiently managed these risks, particularly those that lack country and business model diversification.

Fitch Ratings

More than half of global asset owners are currently implementing or evaluating ESG considerations in their investment strategy

FTSE Russell survey

“Over the long run, COVID-19 could prove to be a major turning point for ESG investing, or strategies that consider a company’s environmental, social and governance performance alongside traditional financial metrics,”

J.P.Morgan



These are a selected consolidation of quotes from a number of investment institutions on their views about the relevance and importance of ESG considerations in their investment approach and / or decisions.

In essence investors are extremely interested in the ESG performance of companies and this interest is growing at a rapid rate.

- Sustainability is seen as a macro thematic trend that is reshaping the investment landscape
- More than half of global asset owners have or are busy integrating ESG into their investment strategies
- Long-term investors have recognised the importance of ESG issues
- Insufficient management of ESG risks could lead to higher cost of capital especially following major ESG controversies

But there is a lack of accessible data to inform their opinions and decisions

Many mine-sites do not disclose site-level data on issues of strong public interest for communities, workers, governments and investors



Responsible Mining Index

Investor dissatisfaction with the information they receive on ESG risks has increased ... Investors surveyed feel more should be done by corporates to provide robust insight into how they identify, assess and manage key climate and other ESG risks

EY

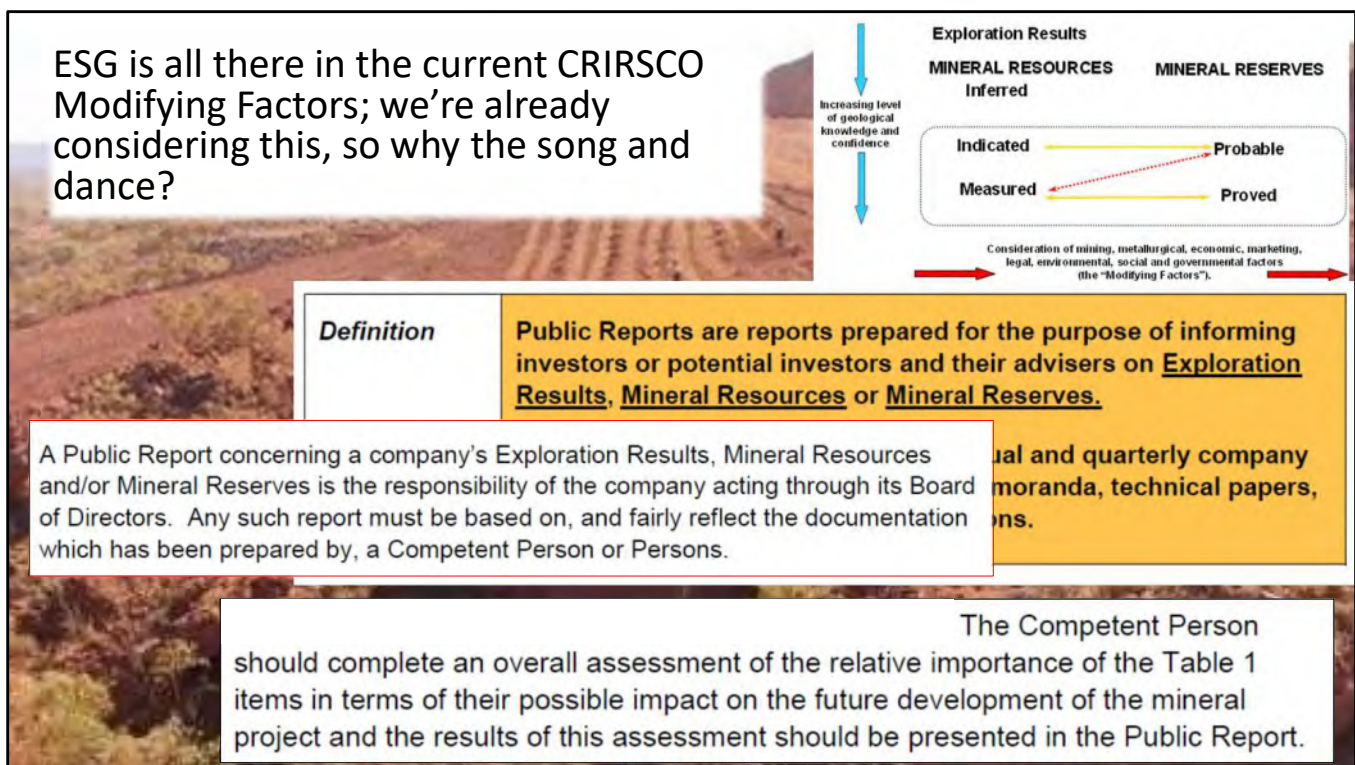
One snag with sustainable indices is they rely on ratings agencies ... to grade companies on their ESG performance, and those scores are largely subjective

Financial Times

But as the interest in ESG grows, there has come a realization that the information to inform investor opinions of ESG performance is lacking. They're looking for more data that is accessible and at the right level of detail.

Investors are only able to reward companies with solid ESG performance if they can access the right information to inform those assessments. A lack of mine site data or of adequate ESG data in general means that investors rely on third parties to inform their decisions and those third parties are relying on scarce information and their own interpretation thereof.

The plethora of sustainability reporting frameworks aims to address this gap however these are voluntary frameworks and do not always ask the right questions enabling organisations to “green wash” their performance.



I just want to bring us back to the CRIRSCO reporting codes and standards and the roles and responsibilities of CPs. You've heard that there is increasing concern that public reports and other disclosures are not providing investors with the information they seek on ESG matters and/or not considering ESG early enough in the project timeline to identify significant risks that simply cannot be designed or managed away at the operational stage. These public reports must be based on and fairly reflect documentation prepared by CPs. It must follow that we should do everything we can to ensure that CRIRSCO continues to be a 'trusted brand' for this purpose and that we are fearless in holding ourselves and mining companies to account in accordance with the reporting principles and the ethical codes to which we are all subject.

With respect to the recent Rio Tinto scandal, we in the CRIRSCO community seriously have to ask ourselves how on earth iron ore that could only be extracted by blasting through the Juukan rock shelters could have been classified even as a resource, let alone a reserve in a CRIRSCO-compliant CPR upon which Rio's public disclosures of reserves and resources at this mine have been based for years. Rio's own inquiry (now challenged by investors as not being independent) provides a time line from 2013 describing successive archaeological studies and close and careful consultation by experts in the field with the local indigenous people for whom the caves are sacred states. The declared cultural and archaeological significance of this site grew over time, and yet somehow there was no connection of these findings to the status of the reserves and resources.

It is also reported that there were 4 alternative mine plans considered only months before the blast, of which only one (that chosen) involved removal of the caves. Rio has a reputation as an international leader in social and environmental performance, and as having robust and responsible attitudes to project development, risk management and excellence in minerals reporting. And yet it failed so spectacularly to live up to its own standards to protect a site that it identified as having huge archaeological and cultural site and literally blew a hole in its hard-won reputation for going beyond just legal requirements. CPR reports are integral to mining company governance – how can CRIRSCO contribute to avoiding such disasters in the future?

CRIRSCO^[1] classification scheme for reporting of solid minerals

MODELLING AND UNDERSTANDING THE MINERAL DEPOSIT

Geologists with appropriate
experience and professional
credentials responsible for
progression along this axis

Exploration Results

MINERAL RESOURCES

"A Mineral Resource is a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction".

MINERAL RESERVES

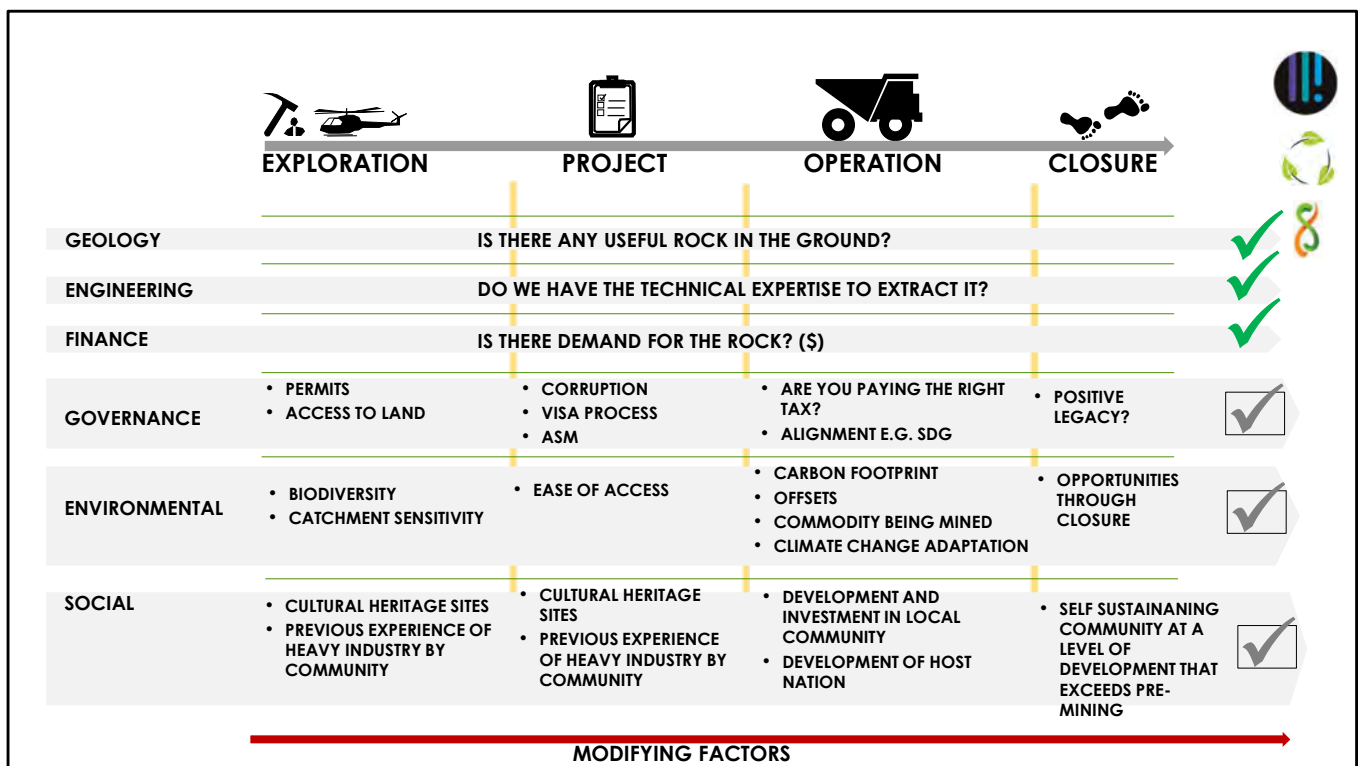
"A Mineral Reserve is the economically mineable part of a Measured and/or Indicated Mineral Resource. ...studies at Pre-Feasibility or Feasibility level as appropriate demonstrate that, at the time of reporting, extraction could reasonably be justified".

CONSIDERATION AND OPTIMISATION OF MODIFYING FACTORS THROUGH OPTION SELECTION, RISK ASSESSMENT AND MINE DESIGN

Many appropriately qualified professionals (e.g. geologists and mining engineers, geotechnical engineering and specialists in all aspects of ESG, engineering, mineral processing, valuation etc) must be involved in this



Let's remind ourselves of the classification scheme that underpins all the CRIRSCO codes and standards. I have shown the consideration and optimisation of modifying right along the horizontal axis to underline that resources cannot be declared unless there are 'reasonable prospects for eventual economic extraction'.

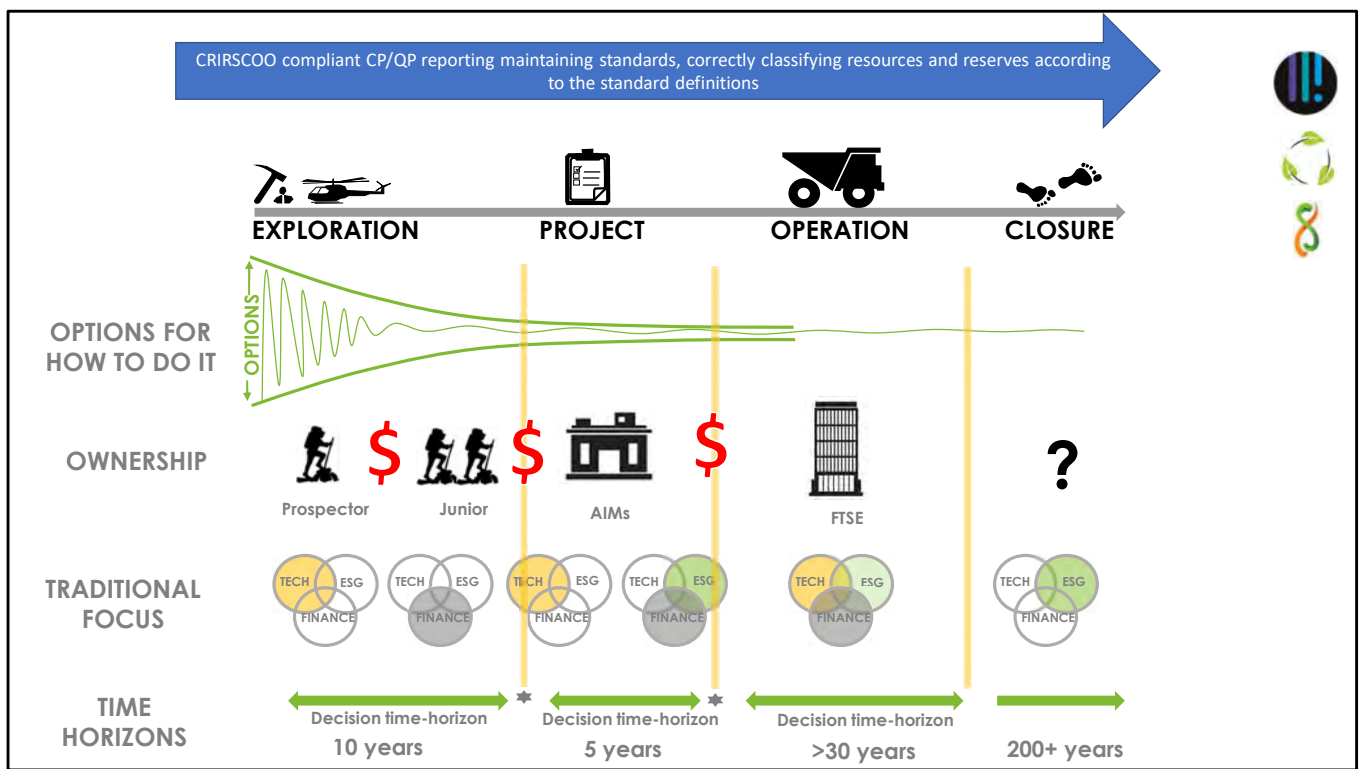


Consideration of Modifying Factors are important throughout the project’s lifecycle, initially to narrow down options and support ‘go’ and ‘no go’ decisions and, later, to underpin questions of feasibility and operations, but their relevance and the level of detail relevant at each stage will change.

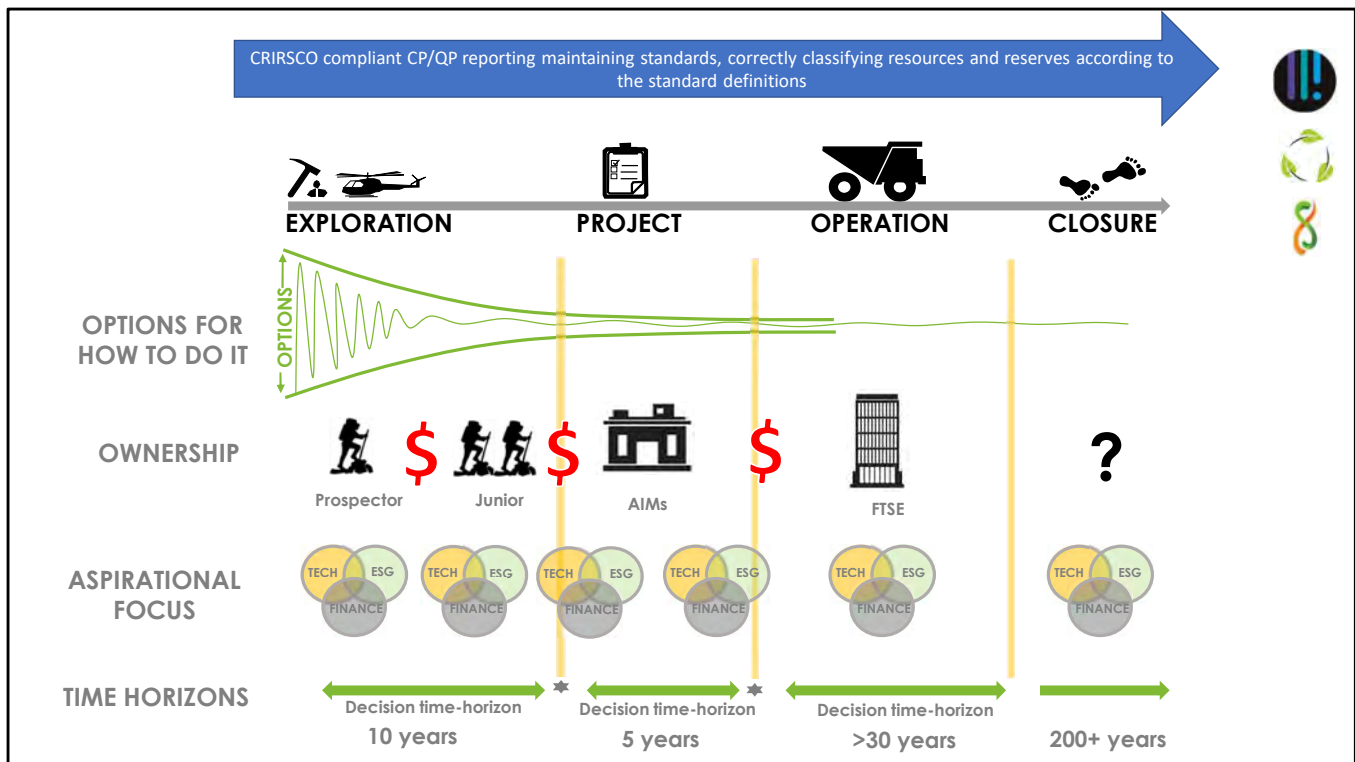
I’ve added the green ticks next to geology, engineering and finance – these are aspects that we feel very comfortable with as CPs – it’s where most of our technical expertise lies.

Slightly more detail is provided here regarding ESG, just to give an insight to SOME (by no means all) of the aspects that need to be considered as you progress through the mining life cycle. Note – that positive legacy and everything that comes with closure needs to be considered before you have even touched the ground.... So just because it is only a risk that tends to be realised at the end of a mine’s life, doesn’t mean to say that it isn’t important at the beginning (or nothing to do with an exploration or resource geologist at the earliest project stages).

The grey ticks in boxes signify that these issues currently represent perhaps a less comfortable place for us as CPs and that there can be a tendency for box ticking in CP reporting (especially at the earliest project stages) rather than integrated consideration and communication of these types of modifying factors alongside geology, metallurgy, engineering, economics etc in terms of impact on value, viability and reputation.



Mining life-cycle – key point is are ownership change points are areas where value may be influenced by incomplete assessment because assumptions get built in and risks and modifying factors get forgotten. Pressure to succeed builds – if we report more fully, that is less likely to happen. Those important project transitions also represent opportunities to avoid these problems and build a project trajectory that builds value and minimises downside risk.



Geology is fundamental but RPEEE (including demonstration of 'responsibility' generally) is a key consideration for investors.

As more information is gathered and analysis is undertaken throughout the process:

- 'given the changes that have been made to the assumptions or design to mitigate environmental, planning or health and safety constraints, **or to provide community benefit/respond to community concerns** can we still meet our business objectives at this site (is it still an attractive investment proposition)?'
- 'if not, is it still worth continuing?' or
- 'what are our revised commercial objectives?'

CPs/CRIRSCO reporting is there throughout but the most significant impact of holistic consideration of all relevant factors (including ESG) is at the start where the options are many and we can make assumptions which we find it difficult to challenge and therefore miss opportunities that may bite us later:

Missed early opportunities to identify and 'design out' non-geological risks that, on their own or in combination, may impact on value and reputation

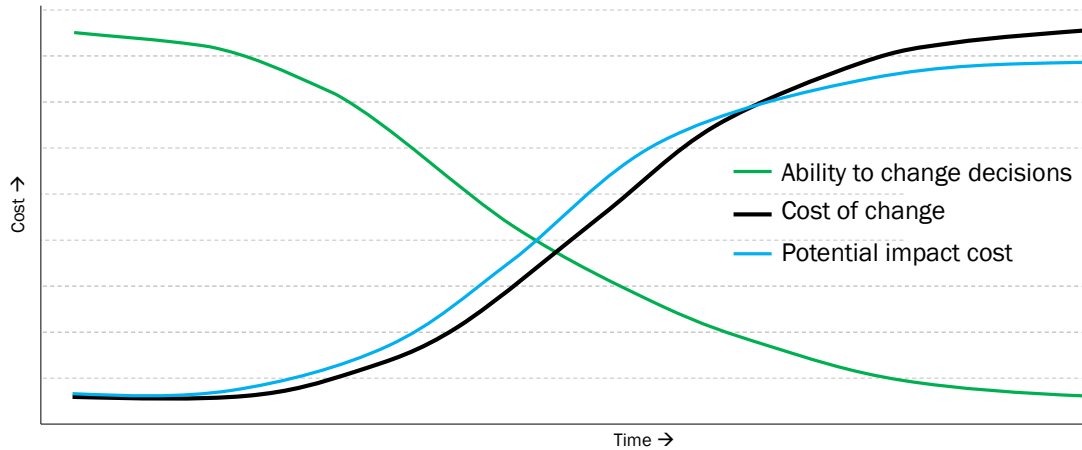
Missed early opportunities to collect baseline data (especially environmental, geotechnical, social, hydrogeological) and establish long term monitoring alongside exploration activity

Missed early opportunities to engage with the public and establish trust, collaboration, and two-way communication to foster understanding of fears and needs

Increased risk of unforeseen (but not unforeseeable) physical, environmental, reputational disasters

Disconnect between corporate and site level – approved management plans and compliance requirements in conflict with each other or impossible to comply with in practice

Earlier identification of risks saves money and reputation



Key Message: We have the greatest ability and opportunity to mitigate risks at lowest cost early in the project lifecycle.

This chart is well sensitised and understood within mining, particularly in the project space. As time progresses, our ability to change plans or mitigate risks decreases significantly (green), and the cost of doing so increases (black). The potential impact of the risk increases as well, as we near execution / project completion.

Some of the causes of this could include

1. Not applying the same level of rigour to understanding ESG considerations as we do for other technical disciplines e.g. mine planning. Because Sustainability is not a clearly delineated discipline, and has an inherently high level of uncertainty – much of which is qualitative, it has not always received the same focus and input as more quantitative disciplines, where we can get a number and know that it's right or wrong to fair, or at least quantifiable, level of certainty.
2. Historically, ESG has been seen as a separate section of a project, aimed at providing some qualitative risk input. The financial impacts of the ESG risks have not always been quantified and the information used to determine appropriate action.
3. Due to a lack of rigour or possible uncertainties, the tendency is to be overly optimistic regarding ESG risk impacts to balance out risk conservatism in other areas, providing a “more spread” picture. Belief in the Board Room and amongst experts from more quantitative disciplines that all ESG risks can be mitigated at the operational phase.
4. ESG issues are often only considered as qualitative risks for too long and therefore projects are unable to mitigate or implement change once these evolve from risks to issues.
5. In many cases, ESG risks become issues that are often project stoppers or significant eroders of value. Earlier and better understanding of the risk case reduces the chances of this occurring, and allows for better up-front decisions to be made.

The SAMESG Guideline –

Providing guidance
and support to
Competent Persons



**The South African Guideline For The
Reporting of Environmental, Social and Governance
Parameters Within the Solid Minerals and Oil And Gas
Industries (SAMESG)**

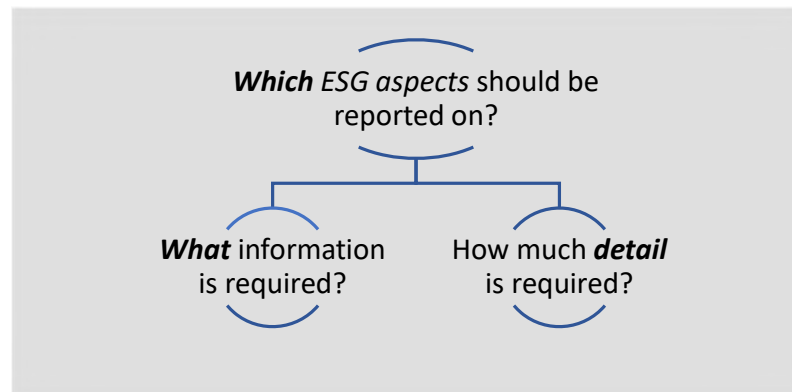
The SAMESG Guideline supports the various SAMCODES, particularly SAMREC and SAMVAL. Inclusion into SAMOG is in progress.

The Guideline was developed in order to ensure that ESG “modifying Factors” are considered in the financial valuation of mineral projects and not only as qualitative descriptions as ESG factors have the potential to materially influence the value of a minerals project.

SAMESG was explicitly developed as a guideline under the SAMCODES as it provides the flexibility for the working group to update it regularly and supports the objective of ensuring that ESG considerations are **integrated** in CP and CV reports and not treated as separate, standalone reporting requirements.

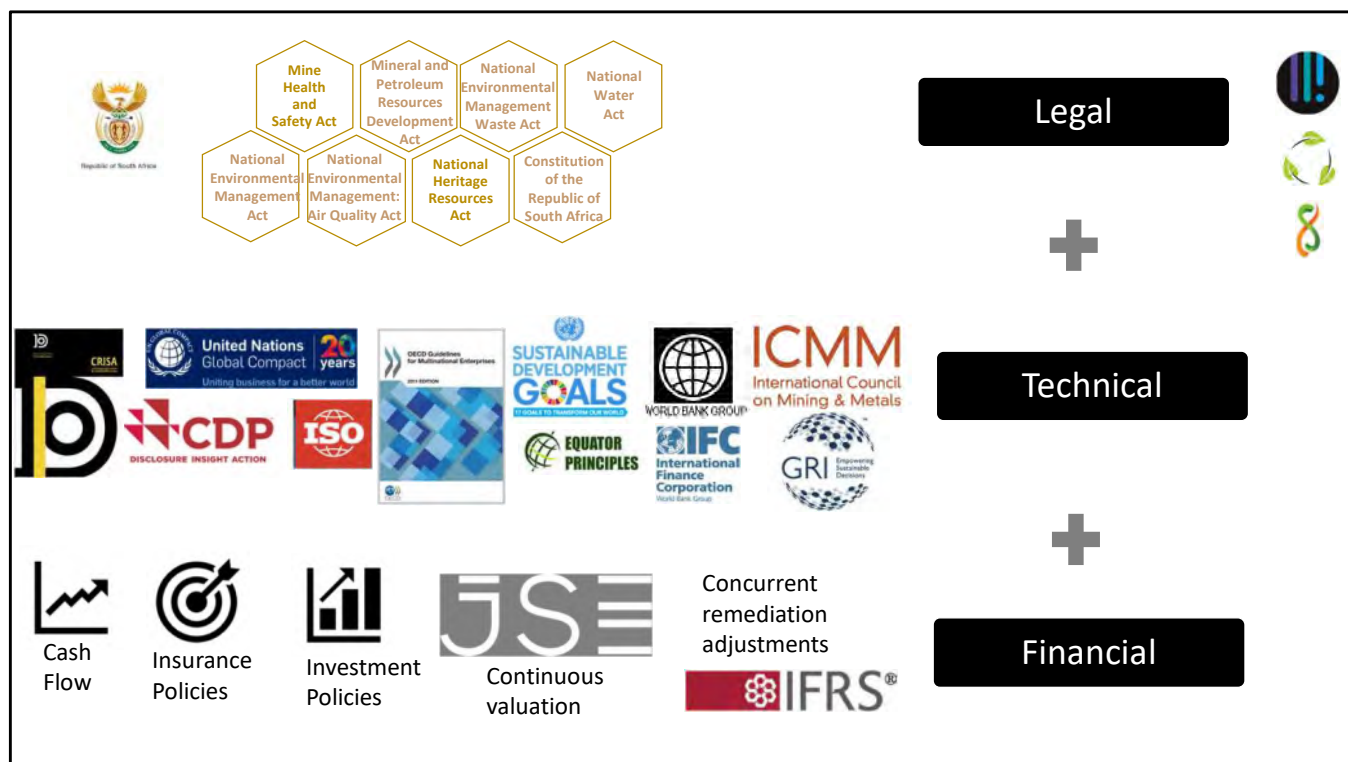
How does SAMESG relate to the SAMCODES?

It is a guideline that provides additional detail on the information to be considered for environmental, social and governance Modifying Factors



The Guideline follows the structure of SAMREC and describes the information to be reported on during each of the Exploration Results, Mineral Resource and Mineral Reserve reporting phases.

It is based on 9 components describing the aspects to be included in the reports and seeks for entities to increase the detail of the information reported as they progress through increasing geological confidence in the deposit.



SAMESG was compiled in recognition that there is a wide range of existing performance and reporting standards to which mining companies subscribe – either voluntarily or as a result of conditions from investors. A number of these standards, for example the Equator Principles, IFC Performance Standards, OECD Standards describe the performance results expected of mining companies in respect of ESG issues. They are not reporting frameworks although of course companies are expected to report on their status of compliance to the standards in order to satisfy lender or investor requirements. The Global Reporting Initiative is widely adopted across the mining industry as the benchmark of sustainability reporting. It however does not go far enough in guiding companies on how the information presented in compliance with the performance metrics should be quantitatively assessed to evaluate the financial implications of the aspects on business viability. SAMESG asks for the reporting entities to consider the information that would be presented in, for example a GRI Report, but to then integrate the implications of that into the Competent Person and Competent Valuator reports. It is the requirement to integrate the outcomes of the various other performance standards and reporting frameworks and to determine the financial implications thereof that is the central focus of SAMESG.

Whilst legislation varies across jurisdictions, a company’s own policies and procedures are the lens through which the SAMESG Guideline requirements should be viewed. Companies that operate across multiple geographies claim to set their own internal standards in order to ensure common performance standards at all their operations. Adherence to these standards is not always equal and investors need insight into the company’s DNA with respect to its approach to and performance levels in respect of ESG considerations. SAMESG calls on companies to review these inputs and assess the implications of the information on their declaration of Mineral Resources and Mineral Reserves.

SAMESG Timeline



SAMESG
Committee
created



2013/4



2015

Drafting and finalizing
SAMESG Guideline

SAMESG
Launched
with 2016
Codes



2016

SAMESG
guideline
effective



2017

New Chair
ToR



2018



ISAR
Honours
Award

2019

- CPR Review
- New members
- SAMREC Table 1
- SAMESG 2.0



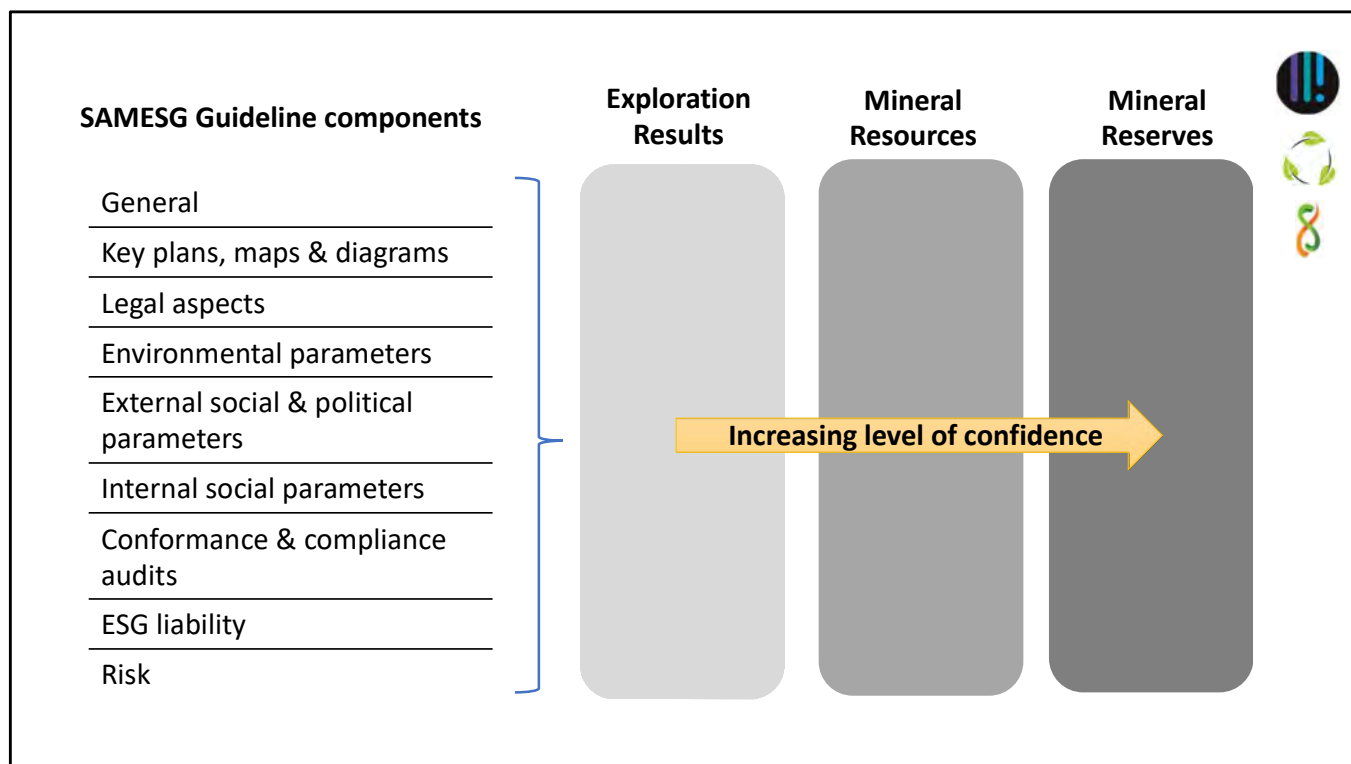
2020

Socialising the SAMESG
Guideline



The SAMESG journey began in 2013 when the SAMCODES Standards Committee sanctioned the creation of an ESG Working Group. The working group comprised of ESG professionals from the mining industry and consulting companies as well as representatives from SAMVAL, SAMREC and the SSC. The Guideline was finalized in 2016 and was officially launched as a mandatory guideline in support of the SAMCODES in January 2017 together with the updated versions of SAMREC and SAMVAL. A highlight for SAMESG and the SSC was the receipt of an Honours Award from the United Nation's International Standards of Accounting and Reporting committee in 2019 in recognition of the role that SAMESG plays in achieving the UN Sustainable Development Goals.

In 2020 we've initiated a process to update SAMESG to improve the way in which it gives guidance to authors of CP Reports who may not have access to specialized ESG professionals to contribute to their reports. We believe that the increased guidance will help authors of reports better integrate the information delivered by legally mandated regulatory approvals processes and application of internationally recognized performance and reporting standards into their reports.



This slide summarises the current structure of the SAMESG components. The level of detail for each reporting component is expected to increase from desktop level of accuracy when Exploration Results are reported through to detailed understanding supported by modelling and in-depth investigations when Mineral Reserves are reported. Much of the information that SAMESG asks to be reported on should be included in the PFS and FS studies required to support the declaration of Mineral Resources and Mineral Reserves. This information should be assessed by the CP to firstly determine an asset's RPEEE and secondly the extent to which the Modifying Factors influence declaration of Mineral Reserves.

Role of the Competent Person



All of the information arising from SAMESG needs to be distilled, assessed, interpreted and incorporated into the CPR or Public Disclosure. The role of the CP has always been to integrate information from a number of disciplines related to the Modifying Factors but the focus on ESG and requirements of guidelines such as SAMESG makes the need for CPs to act as the conductors of a large orchestra that much more important. As we're sure has been discussed at length over the course of these CRIRSCO deliberations, a CP needs to be competent in preparing CP Reports and all that that entails.

Each musician in the orchestra, however, is accountable for their own performance and this holds true for the disciplines contributing to a CPR. The CP holds overall accountability for the report but they should not unfairly carry that accountability alone.

Just as in an orchestra, the role of the CP conductor includes:

- Unifying specialists towards a common objective
- Setting the tempo or approach to the Report
- Ensuring adequate preparations take place in support of delivering the final product / performance
- Listening critically and carefully to what the orchestra members are telling you
- Shaping the tone and overall ethics and transparency of the Report

The overall performance of the orchestra is dependent on the skill of the conductor. Similarly the quality of the CP report and manner in which ESG considerations are included and quantified is dependent on the skill of the CP.

Q&A/Discussion



- What are the opportunities for CRIRSCO to further drive best practice reporting standards to meet current and future investor expectations?
- What are the next steps?

