

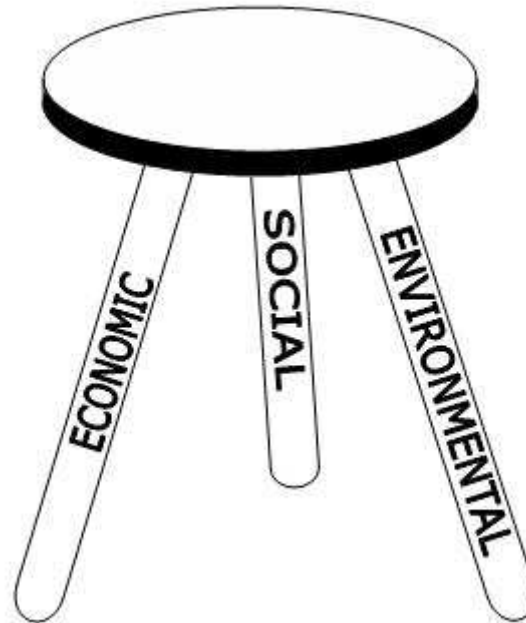
**2009 SME ANNUAL MEETING**  
**TECHNICAL SESSION ON “MANAGING FOR SUSTAINABILITY IN THE**  
**MINERALS INDUSTRY”**

**February 24, 2009**

**SUSTAINABLE MANAGEMENT OF MINING**  
**OPERATIONS:**  
**AN OVERVIEW**

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# THE SUSTAINABLE MANAGEMENT STRUCTURE



## **THE CONCEPT OF SUSTAINABLE MANAGEMENT REFERS TO A MANAGEMENT APPROACH THAT:**

- **Efficiently integrates economic, environmental and social issues into the mining operations**
- **Aiming to secure the support, cooperation, and trust of the local community in which a mine operates and other stakeholders**

## THE BUSINESS CASE ON SUSTAINABILITY

*“MARKET VIEWS INTANGIBLE ASSETS SUCH AS REPUTATION, AS A GROWING PORTION OF A COMPANY’S VALUE”*

**MINING COMPANIES VIEW SUSTAINABILITY AS AN STRATEGIC ADVANTAGE TO:**

- *REDUCE THE FINANCIAL RISK*
- *ACCESS TO FINANCIAL MARKETS*
- *ACCESS MINERAL RESOURCES*
- *ACCESS HUMAN RESOURCES*

# SUSTAINABLE MINE MANAGEMENT

## DEALS WITH:

- *A STRATEGY FOCUS*
- *INTEGRATING SUSTAINABILITY*
- *MANAGING FOR SOCIAL LICENCE*
- *MANAGEMENT OF PRE-PREODUCTION, PRODUCTION & POST PRODUCTION*

**SUSTAINABILITY HAS BECOME A  
FUNDAMENTAL PILLAR OF THE  
COMPANY'S STRATEGY**

\* \* \* \* \*

**SUSTAINABILITY REPUTATION IS AN  
IMPORTANT INTANGIBLE ASSET IN MINING  
COMPANIES**

# SUSTAINABLE MINE MANAGEMENT

## DEALS WITH:

- *A STRATEGY FOCUS*
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# **THE ORGANIZATIONAL STRUCTURE OF ANY COMPANY RESULTS FROM THREE BUSINESS PROCESSES:**

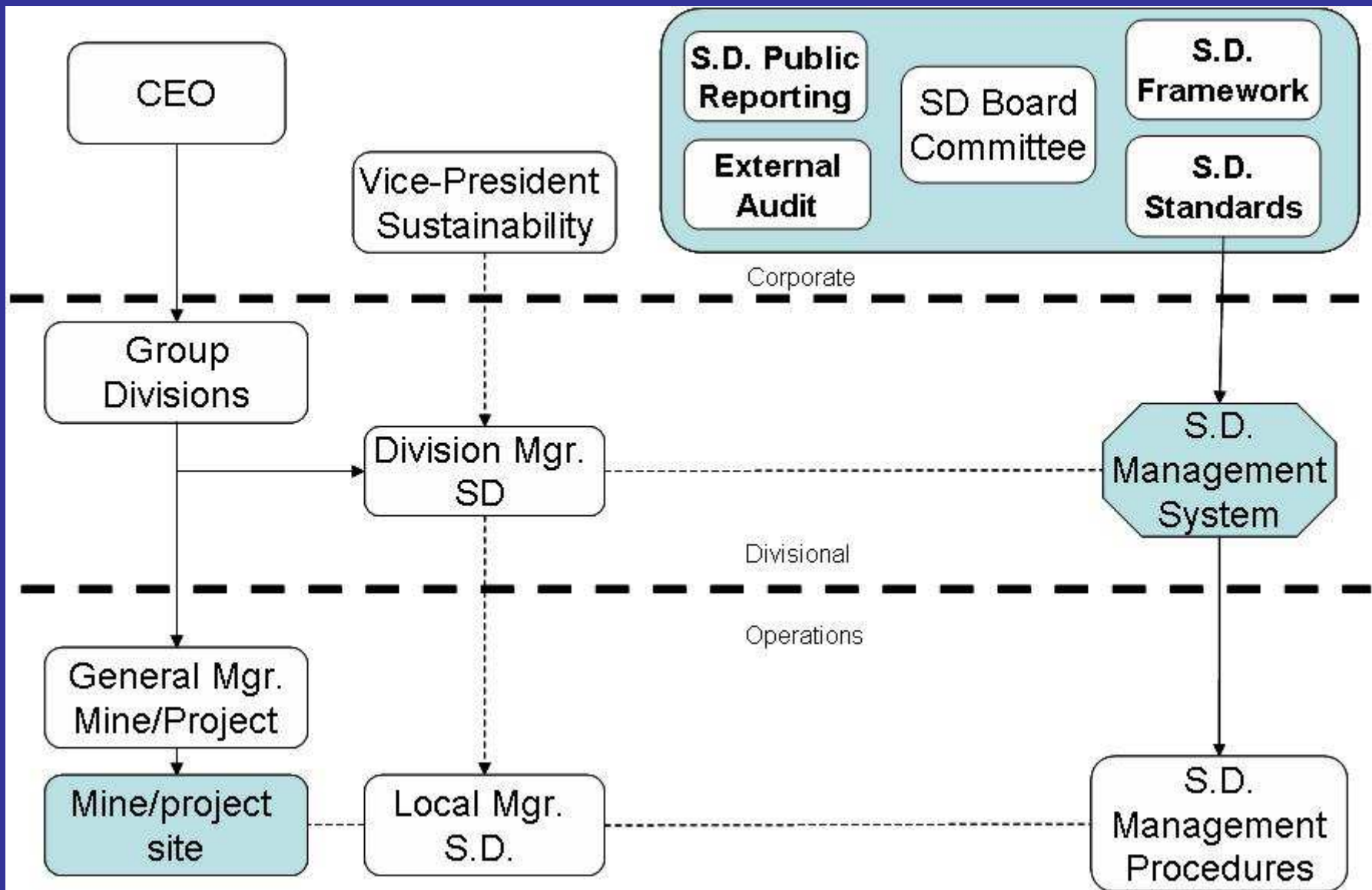
- **SEGMENTATION (Functions, business..)**
- **INTEGRATION MECHANISMS**
- **EMPOWERMENT (Decision rights/Culture)**

**“THE INTEGRATION OF SUSTAINABILITY REQUIRES OF SPECIFIC INTEGRATION MECHANISMS”**



**“THE INTEGRATION OF  
SUSTAINABILITY REQUIRES OF  
SPECIFIC INTEGRATION  
MECHANISMS”**

- ***POSITIONS, ROLES, AD-HOC COMMITTEES***
- ***STANDARDS AND SYSTEM***
- ***PUBLIC REPORTING & INDEPENDENT ASSURANCE***

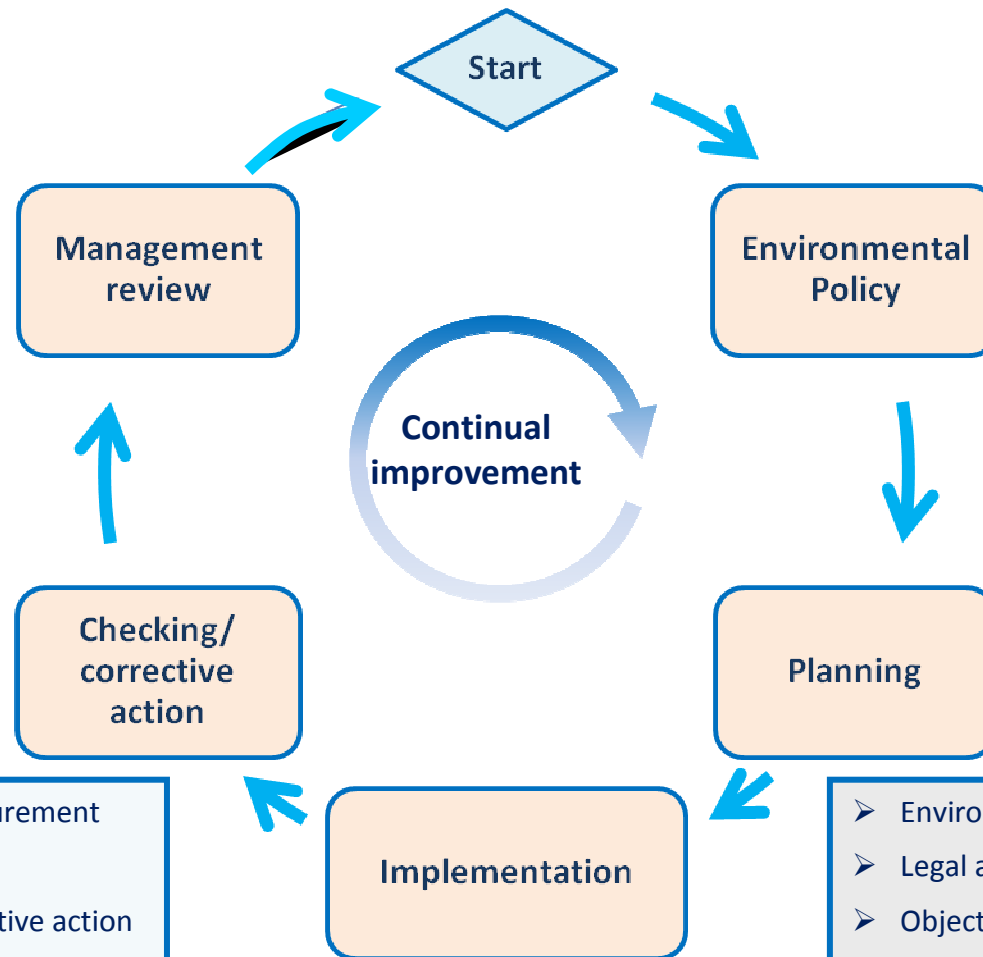


# TYPICAL LIST OF SD STANDARDS

- **Behaviour, Awareness and Competency**
- **Communication and Engagement**
- **Catastrophic Hazards**
- **Operational Integrity**
- **Health and Occupational Hygiene**
- **Environment, Biodiversity and Landscape Functions**
- **Contractors, Suppliers and Partners**
- **Social and Community Engagement**
- **Life Cycle Management – Projects and Operations**
- **Product Stewardship**
- **Incident Management**
- **Emergencies, Crises and Business Continuity**

# THE SUSTAINABILITY MANAGEMENT SYSTEMS

- Support a detailed SD planning processes
- Establish—for each SD objective—the measurement units, targets and responsibility
- Reporting system to all management levels
- Allow for analysis and decision taking



- Monitoring and measurement
- Non-conformance
- Corrective and preventive action
- Records
- EMS audits

- Structure and responsibility
- Training, awareness, competence
- EMS documentation
- Document control
- Operational control
- Emergency Preparedness/response

- Environmental aspects
- Legal and other requirements
- Objectives and targets
- Environmental Management Program

## EMS PROCESS & REQUIREMENTS

# SUSTAINABLE MINE MANAGEMENT

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# **THE SOCIAL LICENCE TO OPERATE**

- **IS THE PROCESS OF GAINING THE ACCEPTANCE OF THE HOSTING COMMUNITY TO CONDUCT MINING OPERATIONS**
- **SOCIAL LICENCE IS BASED ON TRUST AND OFTEN WON OR LOST THROUGH THE INITIAL INTERACTIONS BETWEEN LOCAL COMMUNITIES AT THE EXPLORATION AND PROJECT DEVELOPMENT STAGES.**
- **TRUST AMONG STAKEHOLDERS REQUIRES OF THEIR EFFECTIVE PARTICIPATION IN THE DECISION MAKING REGARDING ENVIRONMENTAL AND SOCIAL RISKS AND EXPECTED BENEFITS.**

# HR MANAGEMENT IS FUNDAMENTAL TO THE INTEGRATION OF SUSTAINABILITY AT OPERATIONS LEVEL SINCE EMPLOYEES:

- ***PLAY A CRITICAL ROLE IN FACILITATING THE SOCIAL LICENSE.***
- ***SERVE AS THE COMPANY'S PORTAL TO THE COMMUNITY.***
- ***SAFETY CULTURE*** (*most efficient mines are also the safest ones*)



# SUSTAINABLE MINE MANAGEMENT

## DEALS WITH:

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# **THE SD CHALLENGE AT PRE-PRODUCTION STAGES RELATES WITH:**

- ***PERMITTING AND MINING REGULATIONS AND STANDARDS***
- ***THE SOCIAL AND ENVIRONMENTAL RISKS AND BENEFITS FROM MINING***
- ***MANAGEMENT OF STAKEHOLDERS***

# ***SUSTAINABLE MANAGEMENT: PRODUCTION AND POST-PRODUCTION STAGES***

## **SOME KEY MANAGEMENT AREAS:**

- ***ROCK FRAGMENTATION***
- ***LOADING AND HAULING***
- ***GROUND CONTROL***
- ***MINERAL PROCESSING***
- ***MINED ROCK AND TAILING***
- ***MINE CLOSURE***

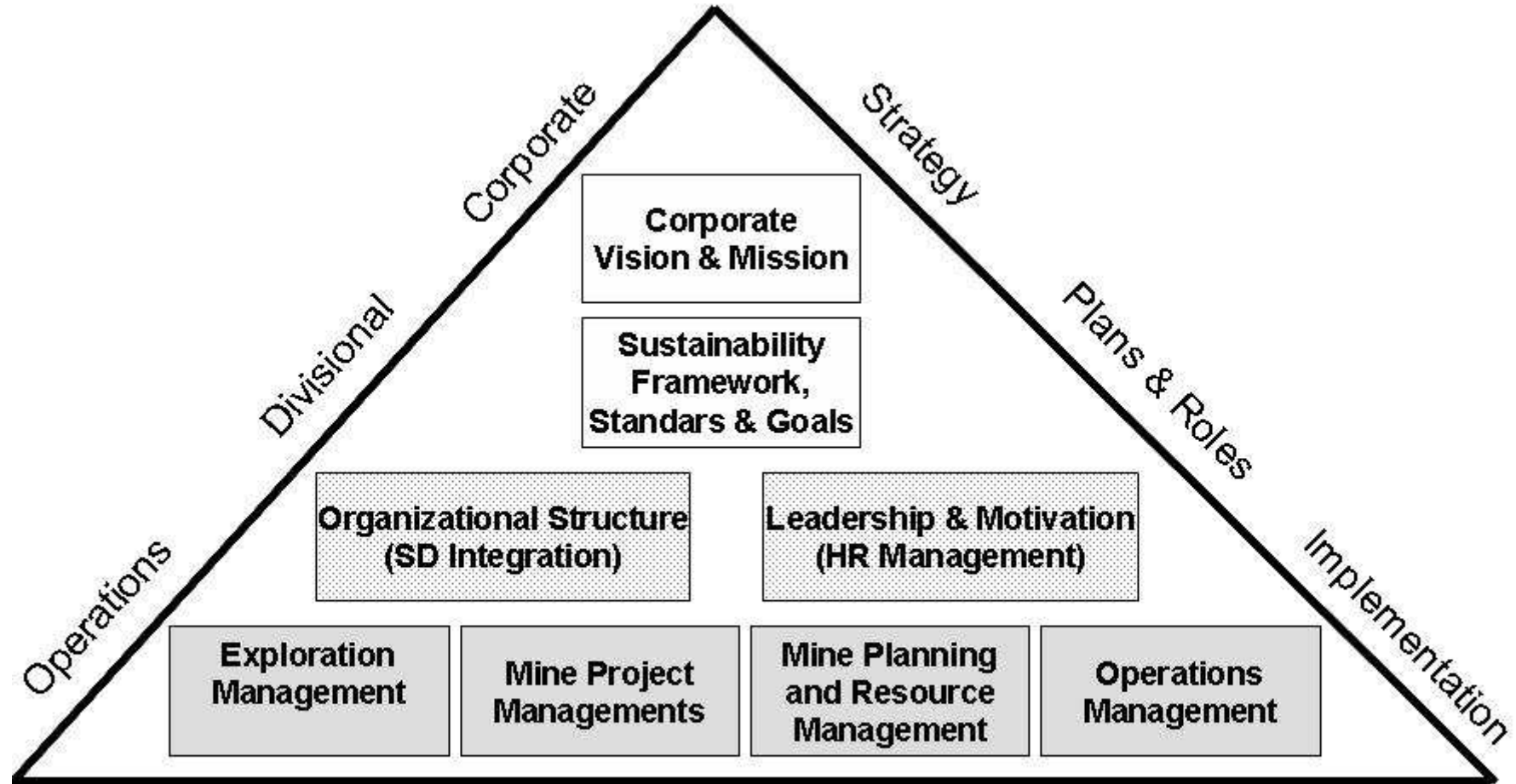
# CONCLUSSIONS

**INTEGRATING SUSTAINABILITY INTO OPERATIONS IS A MANAGEMENT RATHER THAN AN ENGINEERING TASK**

**THE CONCEPT OF SUSTAINABLE MANAGEMENT REFERS TO THE MANAGEMENT APPROACH THAT INTEGRATES SUSTAINABILITY AT:**

- *ALL ORGANIZATIONAL LEVELS (CORPORATE, DIVISIONAL AND OPERATIONS)*
- *ALL FUNCTIONAL LEVELS (STRATEGY, PLANNING AND IMPLEMENTATION).*
- *ALL STAGES OF THE MINE LIFE CYCLE (EXPLORATION, PROJECT, PRODUCTION, AND POST POST-PRODUCTION)*

# THE SUSTAINABLE MANAGEMENT STRUCTURE



# CONCLUSSIONS

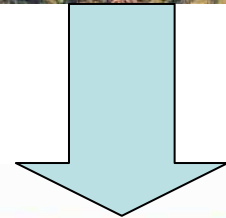
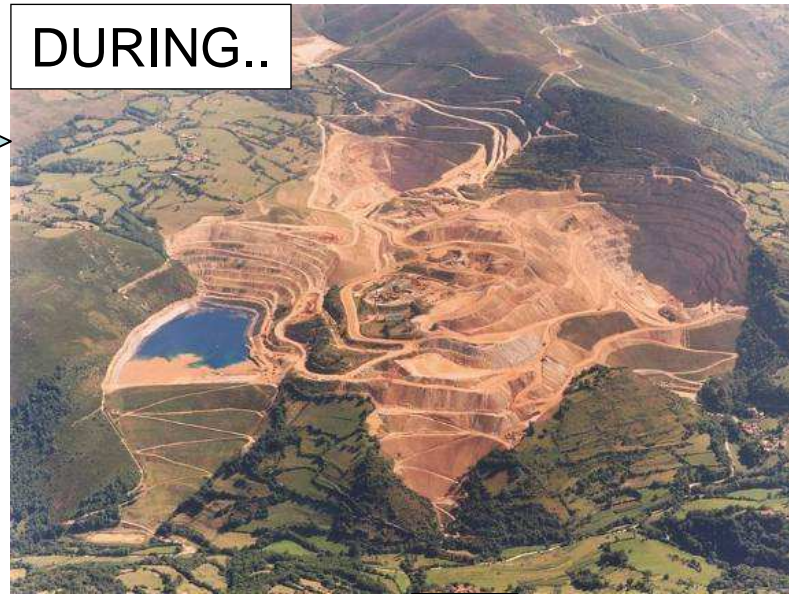
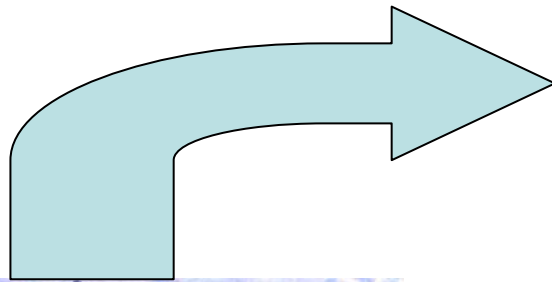
**SUSTAINABLE MANAGEMENT MUST BE DRIVEN  
BY BUSINESS CONSIDERATIONS I.E. TO SEEK  
LONG TERM COMPETITIVE ADVANTAGES**

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**THE BENEFITS OF SUSTAINABLE MANAGEMENT  
HAVE AN ASSOCIATED COSTS RELATED TO  
EARNING AND MAINTAINING THE SOCIAL  
LICENCE TO OPERATE**

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**MANY MINING COMPANIES HAVE  
SUBSTANTIATED A BUSINESS CASE FROM  
SUSTAINABILITY AND ARE ACHIEVING  
COMPETITIVE ADVANTAGES**



THANK YOU