Economic (and other) Benefits of Investments in Health and Safety in Aggregates companies

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Approach to Health and Safety

- Ethical
- Legal
- Technical
- Economic
The ethical approach

- Workers **protection**
- Business awareness of the **importance of the human factor**
  - Worker
  - Family
  - Society (quarries in small local communities)
- **Corporate social responsibility**
- **Social aspects of Sustainable Development**
Sustainable Development and Competitiveness

- Quality
- Environment
- Health and Safety
- Social
- Economic
Critical factors of the aggregates sector

- High number of SMEs
- Extraction and treatment processes are complex
  - Technical
  - H&S
- Production chain is linear (1 - 2 workers by job)
- High legislation requirements vs small technical team
- OVERLAPPING of legislations (general, mining, quarrying)
  - Additional economic constraints
  - Accidents increase legal requirements
The EU-OSHA approach

• “Spending on workplace health and safety should be seen as an investment and not a cost”
  – Jukka Takala, Director of the European Agency for Safety and Health at Work (EU-OSHA)

• The strong economic advantages of good occupational health practice need to be highlighted continuously to organisations
Economic concepts in H&S

• Costs theory:
  – **Accident costs**: economic costs due to accident occurrence
  – **Accident prevention investments**: economic expenses related to H&S improvements
  – Inverse relationship between them
  – **Total H&S costs**: Accident costs + Accident prevention investments

• Benefits theory:
  – **H&S economic benefits**: economic savings related to accident avoidance
  – **Immaterial benefits**: other gains related to accident avoidance *not measurable in economic terms*

• Direct relationship between them
Common wrong approach to accident costs

• To only consider injuries and illness costs
• It could lead to a very serious underestimation of the costs with a deviation of a scale of:
  – From 1-5 to 1-50
  – We only see the top of the iceberg
• Then the overall picture of H&S in the company will be wrong
• It happens in many SMEs
Accident costs calculation

• Difficult to evaluate
  – Direct costs are very visible (medical, legal advice, insurance, time loss of the worker, ...)
  • Costs can often be predicted from past records
  – But we have indirect and hidden costs difficult to evaluate (time loss of other workers and of the staff, reduction of productivity, immaterial costs)
Accident direct costs

• Medical
• Insurance
• Time loss of the worker
• Prosecution by the regulatory authorities
• Sanctions
• Liabilities
• Legal advice costs
• Costs of shutdowns/site closures
• Investigation
Accident indirect (hidden) costs

• Resulting from accident, it will be necessary to consider a wider range of costs. For example:
  – **Interruption of production** immediately after the accident - Production losses
  – **Lowering morale** of other workers
  – Staff **time investigating** and **preparing reports** on the accident
  – **Recruitment and training** costs for replacement workers
  – **Reduced quality** of recruitment pool
  – **Damage to equipment and materials** (those not covered by insurance)
  – **Reduction in product quality** following the accident
  – **Reduced productivity** of injured workers on light duty
  – **Overhead costs of spare capacity maintained** to lessen the potential effects of any accidents
  – **Loss of or damage to capital items** on site such as plant or equipment
  – **Loss of shareholder confidence** and drop in share value
  – ...

  – **A hundred of different costs** that can appear in an accident
Accident reduction

Costs reduction

Benefits
Investments in H&S (1)

- Workers skills (H&S procedures, safe working, H&S behavior)
- Site design (quarry front, internal roads, ...)
- Mobile machinery improvements (CCTV for dumpers, ...)
- Treatment plant improvements (automation, safety devices, ...)
- Ancillary installations (workshops, laboratories, ...)
- Engineering process (re)design
- Work environment (re)design (dust control prevention measures, ...)
Investments in H&S (2)

- H&S management (organisation, responsibilities, ...)
- H&S monitoring (self controlling activities, ...)
- Exposure controls (dust, noise, vibrations, ...)
- Maintenance (mobile equipment, treatment plant ...)
- Health surveillance (dust exposure monitoring – silicosis, ...)
- Job / task (re)design (avoidance of the exposure, ...)
- Personal protective equipment (increasing efficiency, more human friendly, ...)
Accident costs vs prevention investments (1)

- Accident costs
- Accident costs + Prevention investments
- Prevention investments

Number of accidents

GOOD

POOR

Under a certain limit, accident reduction is very low.

Possible legal uncompliance

Not extra cost but legal compliance cost or other benefits

Accident costs

Accident costs + Prevention investments

Prevention investments

Optimum economic

Number of accidents
Accident costs vs prevention investments (2)

<table>
<thead>
<tr>
<th>Costs</th>
<th>Frequency index</th>
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<tbody>
<tr>
<td></td>
<td>0%</td>
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<tr>
<td></td>
<td>25%</td>
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<tr>
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<td>50%</td>
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<td>100%</td>
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</table>

Possible legal uncompliance

Not extra cost but legal compliance cost or other benefits

Under a certain limit, accident reduction is very low
• Accident costs > H&S Investments **CLEAR NEGATIVE SITUATION**
• Accident costs = H&S Investments **BALANCED SITUATION**
• Accident costs < H&S Investments **GOOD SITUATION (NORMAL)**
Cost benefit analysis

• **Direct costs** can often be *predicted* from past records
  – But we have *hidden costs* difficult to evaluate

• The **identification of benefits** is much **harder** and more open to question
Cost benefit analysis

• To express costs and benefits in monetary terms to make a comparison

• Provides a means of **weighing the investments of introducing measures to reduce risk** against the **benefits** that would result

• The technique allows the principle of reducing risks to a level that is as low as reasonably practicable to be formally tested
  – This is not the case of some legislative initiatives (RCS value of 0,025 mg/m³)

• It gives you the answer to the question: When a cost of a measure outweighed its benefits in order to justify a decision not to implement it?
Cost benefit analysis - Problems

• The quantification of all accident costs, safety related investments and benefits
• The assignment of monetary values to safety related outcomes
• The temporal incertitude of accident occurrence
• Accident occurrence is a multifactor question where a lack of one factor can affect the other factors:
  – Material
  – Human
  – Technical
  – Organisation
• Incorrect behaviour is often a crucial point for improvement
Business benefit of H&S

• The ‘business benefit’ argument is founded on a number of related assumptions, explicitly that:
  – business decisions are rationally determined by cost-benefit type analyses
  – businesses are principally motivated by productivity gains
  – businesses perceive the costs of injury and ill-health to be significant
# Typical Benefits of H&S investments

<table>
<thead>
<tr>
<th>Direct Benefits</th>
<th>Indirect Benefits</th>
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<tbody>
<tr>
<td>§ Lower accident costs and production delays</td>
<td>§ Enhancement of workplace safety</td>
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<tr>
<td>§ Reduced insurance premiums</td>
<td>§ Reduced absenteeism</td>
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<td>§ Reduced legal costs</td>
<td>§ Reduced staff turnover</td>
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<td>§ Reduced medical costs</td>
<td>§ Improved corporate image</td>
</tr>
<tr>
<td>§ Improved production and productivity rates</td>
<td>§ Improved chances of winning contracts</td>
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<tr>
<td>§ Reduced product and material damage</td>
<td>§ Improved job satisfaction and morale. Reduction of stress</td>
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<td>§ Integration of the concept H&amp;S is an integral part of being a ‘good business’ and a “good employer”</td>
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<td>§ Keeping within the law and avoiding punitive action</td>
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<td>§ Meeting client needs</td>
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<td>§ Maintaining reputation</td>
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Impact of a serious H&S accident in a SME

- More **difficult to recover** from any accident
- **Relative impact is greater** than on comparable large larger enterprises
- **Key workers cannot be easily or quickly replaced**
- Short-term **interruptions** of business can lead to **loss of clients and important contracts**
- **A serious incident** can lead to **closure of a business** due to:
  - The **direct costs** of dealing with the incident
  - The **loss of contracts and/or customers**
Other factors to promote H&S economic management

• Having a separate budget for H&S
  – SMEs do not routinely keep records of the costs of ill-health or accidents
  – This lack of data collection is attributed:
    • To their size
    • To the fact that these costs are not readily apparent and that this information is too difficult to understand

• Linking OSH and Insurance
Some H&S economic indicators

• H&S investments / Total H&S costs
• Accident costs / Total H&S costs
• H&S investments / Total turnover
• Accident costs / Total turnover
Recommendations for aggregates companies

• Better collect H&S economic data
• Having a separate budget
• Cost-effective interventions
• Use of H&S economic indicators
• Cost-effective tools and understanding that good H&S investments reduces the costs to the company:
  – Economic
  – Immaterial
  – Intangible
Thank you very much for your attention