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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





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 ~~costs~~ 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, ...)

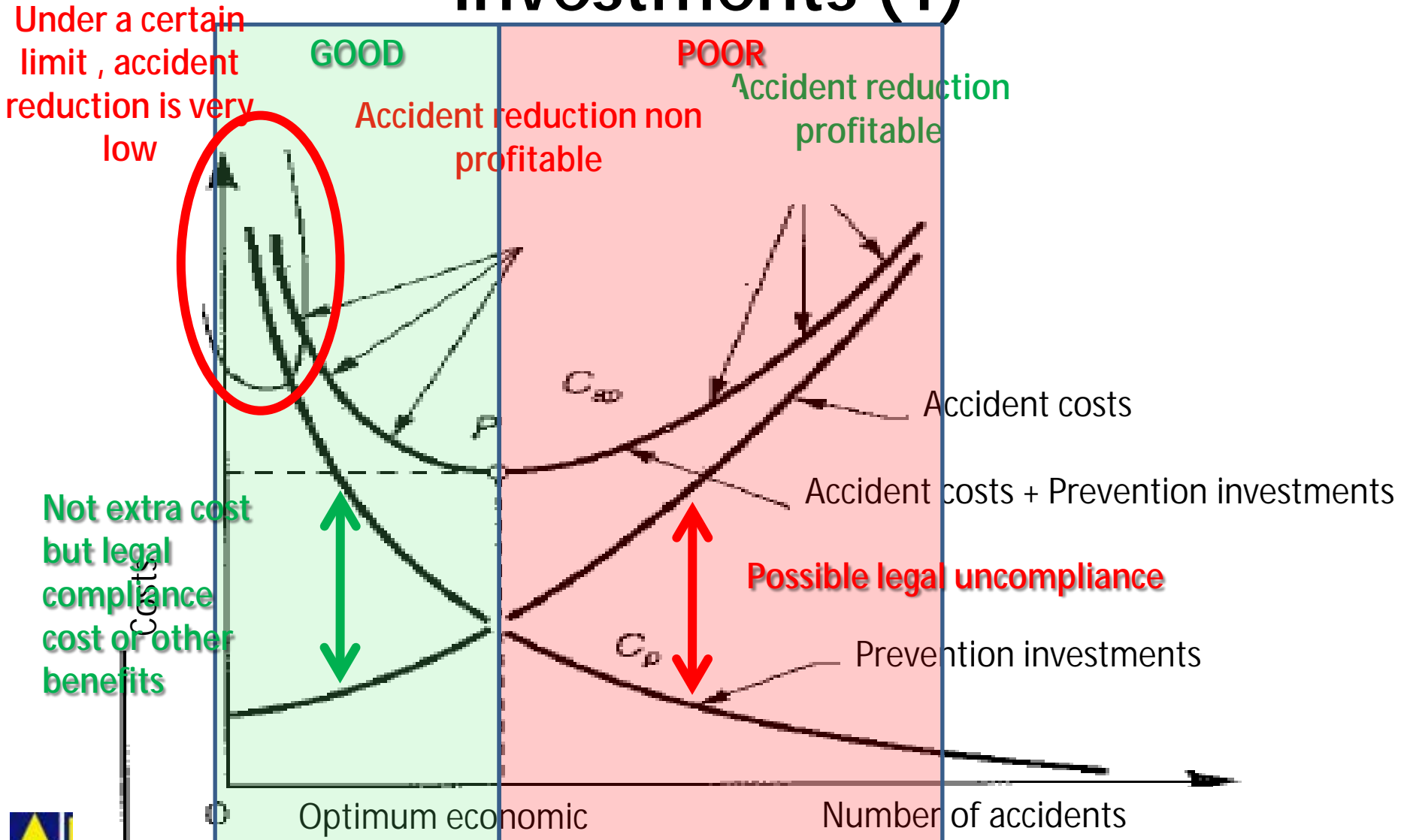


Investments in H&S (2)



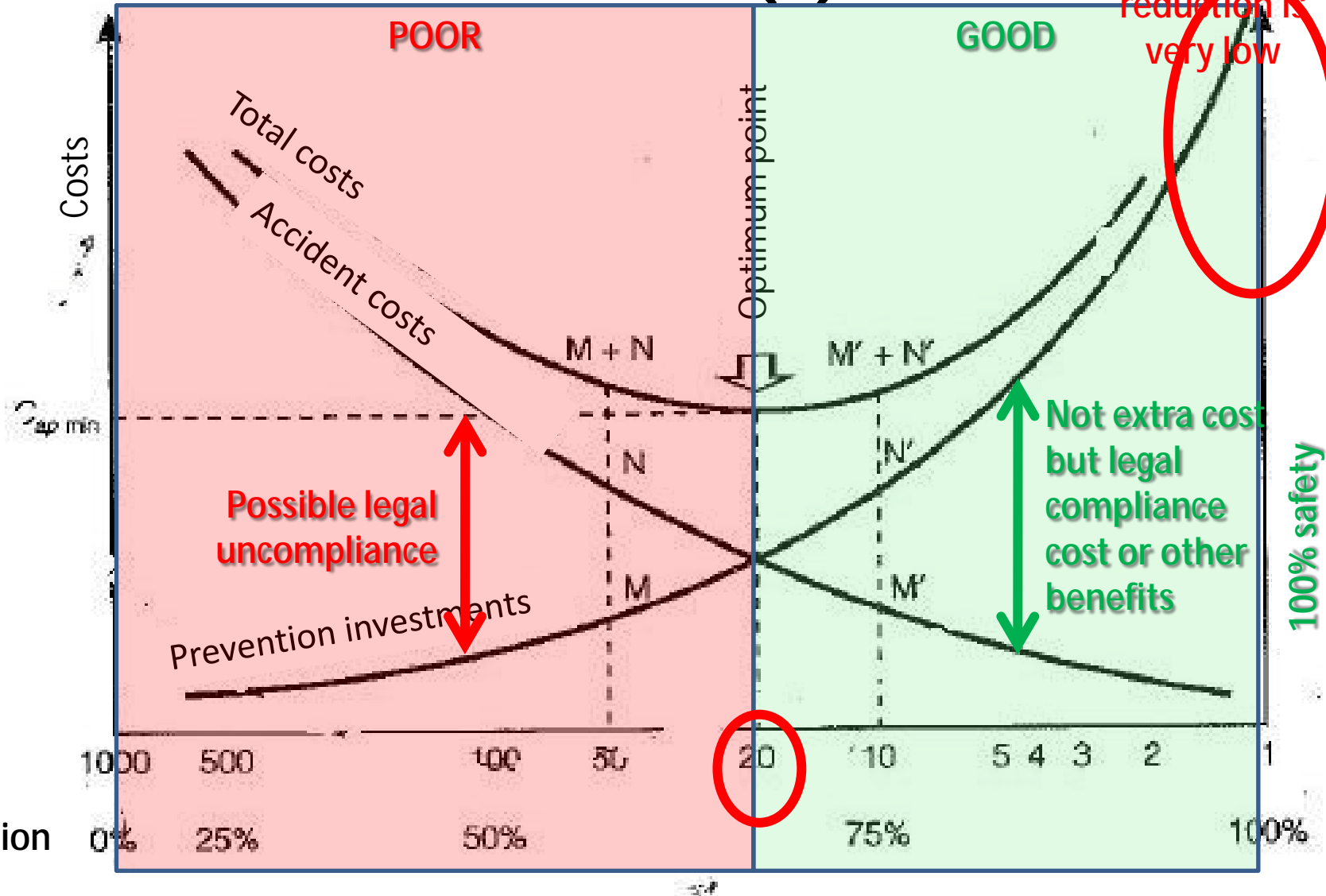
- H&S management (organisation, responsibilities, ...)
- H&S monitoring (self controlling activities, ...)
- Exposure controls (dust, noise, vibrations, ...)
- Maintenance (mobile equipment, treatment plant ...)
- Health surveillance (dust exposure monitoring – silicosis, ...)
- Job / task (re)design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

Accident costs vs prevention investments (1)



Accident costs vs prevention investments (2)

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

Direct Benefits

- § Lower accident costs and production delays
- § Reduced insurance premiums
- § Reduced legal costs
- § Reduced medical costs
- § Improved production and productivity rates
- § Reduced product and material damage

Indirect Benefits

- § Enhancement of workplace safety
- § Reduced absenteeism
- § Reduced staff turnover
- § Improved corporate image
- § Improved chances of winning contracts
- § Improved job satisfaction and morale. Reduction of stress
- § Integration of the concept H&S is an integral part of being a 'good business' and a "good employer"
- § Keeping within the law and avoiding punitive action
- § Meeting client needs
- § Maintaining reputation

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

- $\text{H\&S investments} / \text{Total H\&S costs}$
- $\text{Accident costs} / \text{Total H\&S costs}$
- $\text{H\&S investments} / \text{Total turnover}$
- $\text{Accident costs} / \text{Total turnover}$



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



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**Thank you very much for your
attention**