

# Chamber of Mines of South Africa

## MOSH TASK TEAM:

(Mining Industry Occupational Safety and Health)

## Adoption of Leading Practice related to the prevention of uncontrolled Falls of Ground

Mine Managers' Association

12 September 2008

# Chamber of Mines of South Africa

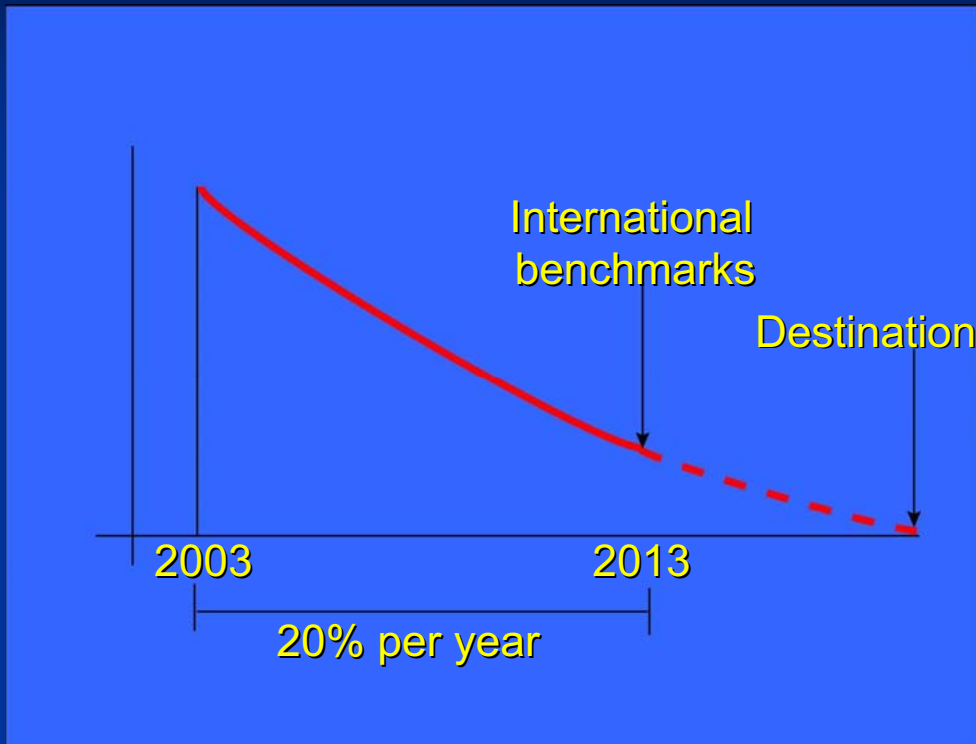
## ▀ Background information

- 2003 – Industry Mile Stones
  - Dust
  - Noise
  - Safety
- 2005 – CEO's sign commitment
- 2006 – Ministerial Safety Summit
- 2006 – CEO's establish MOSH Task Force
- 2007 – Task Force present work to CEO's
- 2008 – MOSH Adoption Teams
  - Leadership
  - Noise
  - Dust
  - Falls of Ground

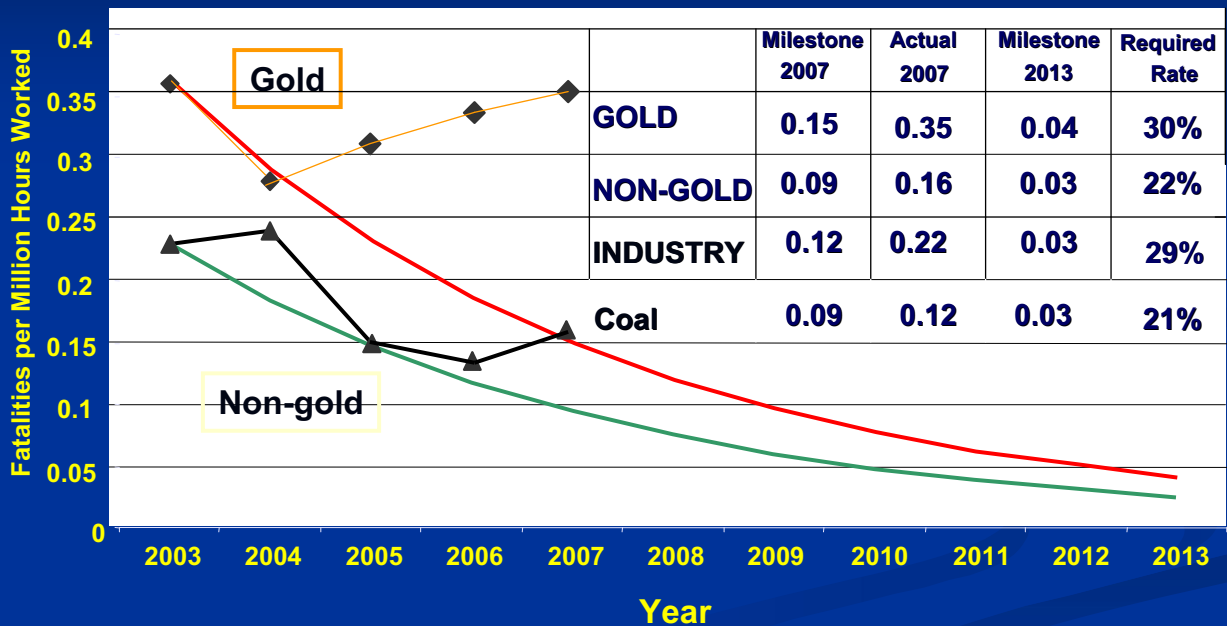
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# SA Mining Roadmap to Zero Harm: Safety

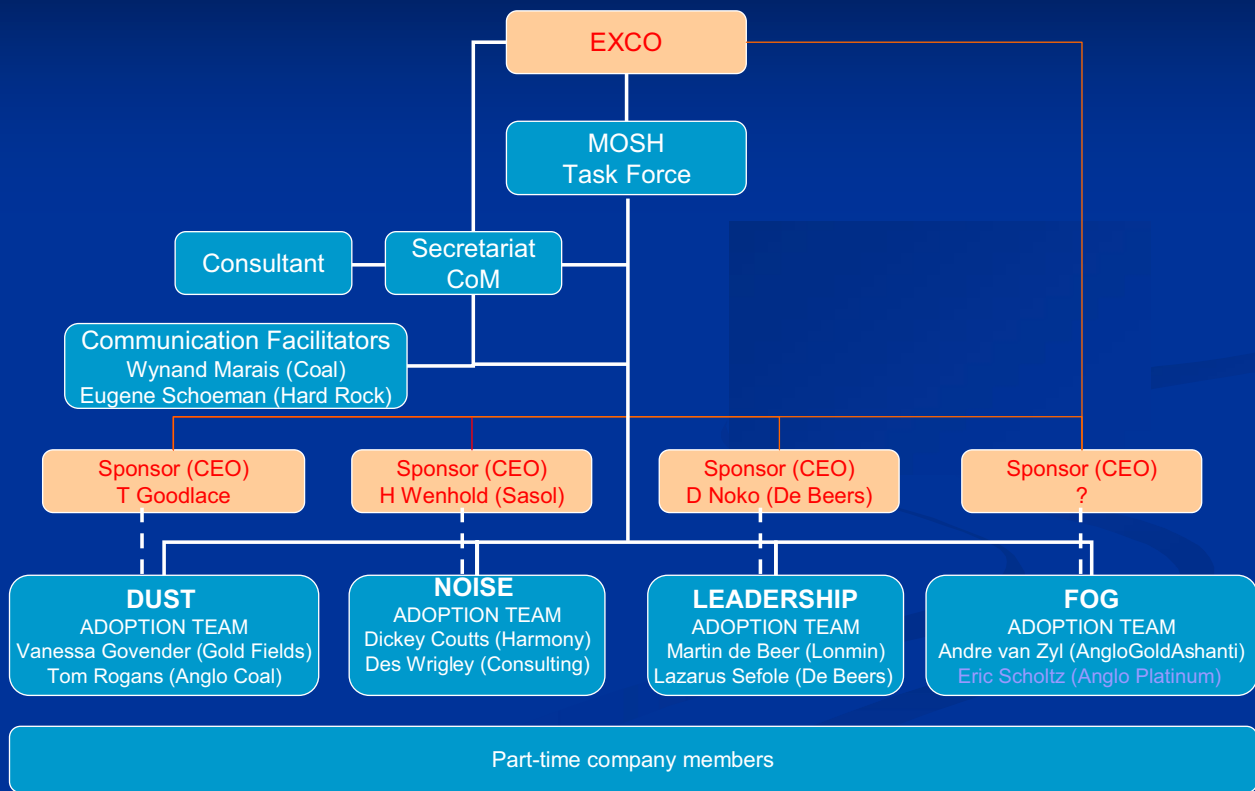


## Commodity performance against milestones (FFR) – Provisional figures



Increasing required rates

# MOSH Adoption System Organogram



## Chamber of Mines of South Africa

- Falls of Ground Adoption Team (Steering Committee)
  - 2 Members seconded on a full-time basis
    - A van Zyl (AngloGold Ashanti)
    - E Scholtz (Anglo Platinum)
  - 8 Members participating on a part – time basis
    - N Fernandes (Impala)
    - K Brentley (Harmony)
    - M Kevane (Lonmin)
    - F Hutten (Murray and Roberts Cementation)
    - R Kersten (ARM)
    - G Dukes (AngloGold Ashanti)
    - M Kriel (Gold Fields)
    - F Castelyn (Gold Fields)
  - Dr John Stewart – (Consultant for CoM Secretariat)

# Falls of Ground Adoption Team

## What are we dealing with?

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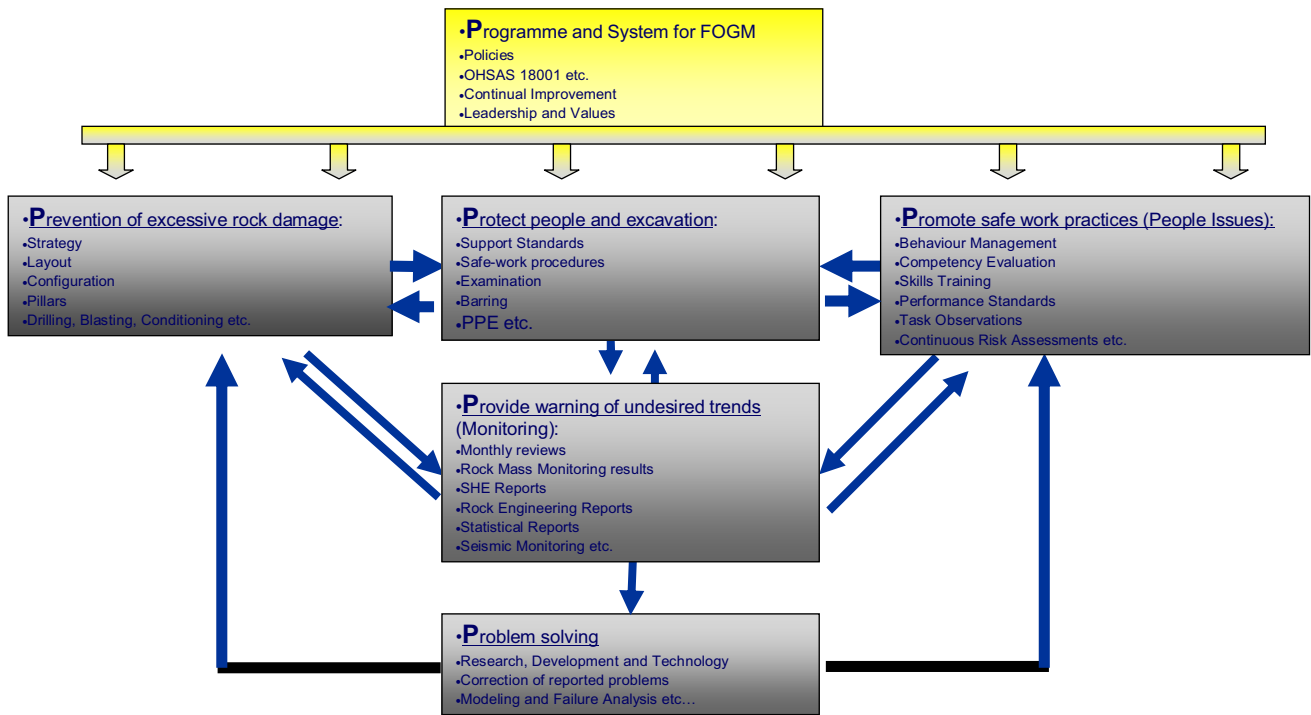




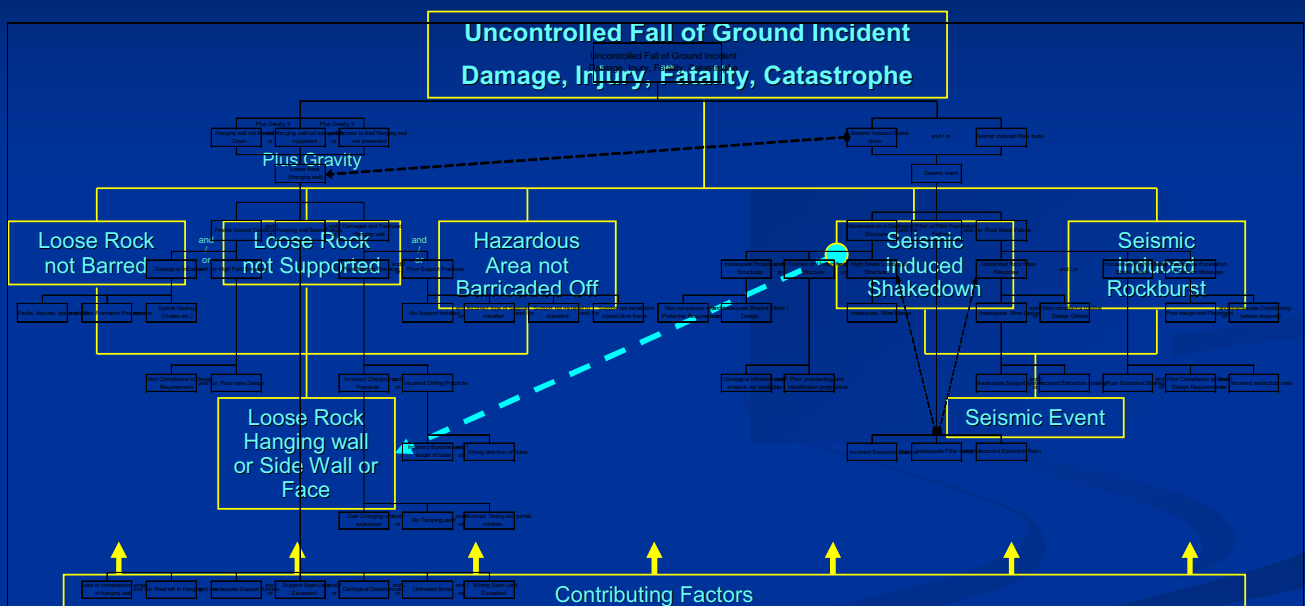
## Falls of Ground Management Model (FOGM)

- **P**rogramme or Management System
- **P**revention of Excess Rock Damage prior to creating an Excavation
- **P**rotection of the Excavation and the People and Equipment therein
- **P**romotion of Safe Work Practices and People Management Issues
- **P**rovide Warning of Undesired Trends (Monitoring)
- **P**roblem Solving (Including R&D)

# Falls of Ground Management Model (FOGM)



# Falls of Ground Causation



# Falls of Ground Causation....

- Contributing Factors:
  - Loss of confining stresses in hanging wall
  - Inadequate support system
  - Support span limits exceeded
  - (Untreated) geological disturbances including brows
  - Mining span limits exceeded
  - Support not installed to standard
  - Support not installed in correct time
  - Inadequate pillar designs
  - Incomplete geological information or not available
  - Incorrect extraction ratios or rates
  - Poor extraction strategy
  - Non compliance to mine design requirements
  - .....etc....

# Falls of Ground Adoption Team

- Falls of Ground Adoption Team Activities Workshop – March 2008, Glenburn Lodge
  - Assessment of FOG concerns and opportunities
    - 8 Areas of concern and possible opportunities noted
  - Selection process applied (Cost, Time, Ease of Implementation, Outcome)
    - 3 Areas of opportunity identified
      - Diligent Examination and Making Safe
      - “In-stope” bolting
      - “In-stope” netting
  - Final selection
    - **To optimise and ensure that appropriate procedures and practices are in place and accepted by all stake holders to the point where no work will commence or continue in any area that has not been adequately examined and made safe.**

# Falls of Ground – Concerns / Opportunities

- Sourcing and application of good geological information
- Extraction strategies
- Pillar mining
- Examination and making safe
- Cleaning processes
- Separating employees and hazards
- Behaviour management and leadership
- Pro-active monitoring

# Falls of Ground Adoption Team Activities

- We have:
  - Identified areas of Leading Practice
  - Evaluated what constitutes an effective examination and making safe process
  - Tested the Leading Practice at the Source Mine
- Work in progress:
  - Demonstrate the effect of the Leading Practice at a Demonstration Mine Site
  - Finalise the requirements for adoption of an Effective Leading Practice
  - Have the Leading Practice “Adopted” by initial “Adoption Sites” and then by the rest of the Industry.

# Team Examination and Making Safe.....

- The Miner (or Competent A person) is legally accountable for the examination and making safe process
- Responsibility on all members of the team to examine and make safe a designated area – direct supervision and coaching by the Miner / Comp A
- The working place is divided into demarcated sections with individual members being assigned to that area for their input in examination, making and keeping that area safe
- All persons (other than visitors) entering a working place will be in possession of a pinch bar at all times
- Designated / demarcated points for storage of examination and making safe tools

# Team Examination and Making Safe.....

- The crew enters the panel from the top
- The team responsible for making the top section safe continues with their work under the guidance of the Miner / Comp A and when satisfied it is safe, they hand over to the next team at the demarcated point.
- The second team takes over and repeats the process through to the third team etc.. until the gully (and siding) has been made safe.
- The crew participates in the discussion regarding the Hazards observed, the remedial actions required and the work activities of each team member.
- The Miner then completes the Safe Declaration Document.
- Once satisfied that the process has been completed, they will all sign their consent on the declaration document and the miner will sign signaling that the work place has been declared safe and that the activities for the shift may now commence.





