



# SUSMIN

## - Tools for sustainable gold mining in EU

**Timetable:** 1.1.2014-31.12.2016

**Budget:** 1.9 ME

**Partners:** Geological Survey of Finland (GTK), Wrocław University of Technology (WUT), Geological Institute of Romania (IGR), University of Babes-Bolyai (UBB), Luleå University of Technology (LTU) University of Porto (UP) and Trinity College Dublin (TCD)

**Stakeholders:** Global mining industry (e.g. RMGC, SAMAX, MedGold, Agnico-Eagle, Dragon Mining), technology companies (e.g. Outotec Finland Oyj, Kemira Oyj, Oulu Water Alliance Ltd)

### NEEDS

- Sustainable supply of gold is crucial to revitalise Europe's industry and economy to meet increasing demand without compromising the social and environmental issues of gold mining
- Gold mining has challenges in eco-efficiency and extraction methods (e.g. cyanide)
- Novel sustainable methods and technologies for mineral processing, water treatment and management of environmental and social impacts are needed



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### APPROACH and WORK PACKAGES

#### 1. Gold exploration

→ New geophysical techniques for gold exploration

#### 2. Mineral processing

→ Eco-efficient ore beneficiation methods and alternatives to cyanide leaching

#### 3. Mine water treatment technologies

→ Novel water treatment solutions by advanced adsorbents

#### 4. Mine waste management

→ Long-term stability of mine wastes and waste facilities and prevention of contaminated drainage

#### 5. Environmental monitoring, modelling and risk assessment

→ Solutions for monitoring, predicting and preventing environmental effects of mining

#### 6. Sosio-economics of gold mining

→ Tools for enhancing the corporate social responsibility, community engagement and management of the stakeholder relations

#### 7. Synthesis, communication, coordination



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### CASE STUDIES

- In Finnish, Swedish, Portuguese and Romanian mines

### OUTCOMES AND IMPACTS OF THE RESEARCH

- Supports environmentally, socially and economically sustainable gold production in EU
- Project provides technologies and methods for sustainable mineral processing, water treatment and management of environmental and social impacts
  - To manage economical, social and environmental risks of gold mining
  - To achieve sustainability and long term development of the mining areas
- Results will be combined to reports and recommendations for mine industry, environmental authorities as well as consultants
- Result will be disseminated through workshops in participating countries



### MORE INFO

- <http://projects.gtk.fi/susmin/>