

### Scientific and technical objectives

Assess **policy requirements** at macro (public) and micro (mining companies) levels and **define environmental, socio-economic, societal and sustainable development criteria and indicators** to be possibly dealt using EO

Use and develop EO on **demonstration sites** to demonstrate the capabilities of **integrated EO-based methods and tools** in:

- monitoring,
- managing
- contributing reducing the environmental and societal footprints of all phases of a mining project

Contribute making **reliable and objective information** about affected ecosystems, populations and societies, basis for a sound **“dialogue”** between industrialists, governmental organisations and stakeholders

### Consortium

Beneficiary name	Country	Beneficiary name	Country
Bureau de Recherches Géologiques et Minières	France	Council for Geoscience	South Africa
British Geological Survey	UK	Anglo Operations Limited, Anglo Technical Division	South Africa
Tel-Aviv University	Israel	Université de Versailles – St Quentin	France
Deutsches Zentrum für Luft - und Raumfahrt e.V.	Germany	Česká Geologická Služba	Czech Republic
Wuppertal Institut für Klima, Umwelt, Energie GmbH	Germany	Sokolovská Uhelná a.s.	Czech Republic
Geoloski Zavod Slovenije	Slovenia	Anglo American Chile Ltda	Chile
Mineral Industry Research Organisation	UK		

### Demonstration sites



Los Bronces copper mine, Chile



Sokolov lignite mine, Czech Republic



Emalahleni coal mine, South Africa

### EO-MINERS and GEO

#### > Objectives

- Filling a strategic gap in GEO, an initiative which does not address minerals to any meaningful extent at present, based on:
  - Mining and Environmental EO Systems developed in EO-MINERS
  - Identification of synergies and gaps between EO-MINERS and GEO

#### > Strategy

- Review the existing GEO Tasks covering the 9 societal benefit and 5 transverse areas defined by GEO work plan 2007-2009.
- Maintain a dialogue with GEO, visiting GEO members and participating organisations in ACP countries and Europe as necessary
- Participate in GEOSS conferences and workshops, making presentations on the contribution of mining and environmental observations to specific societal benefit and transverse areas
- Run a minerals workshop with GEO members and/or the GEO Secretariat

#### > Deliverables

- “EO-MINERS to GEOSS Mapping Database and Report” including :
  - a proposal for the update of the GEO Work Plan
  - proposals for follow-on projects to deliver against common EO-MINERS and GEO targets
  - proceedings of EO-MINERS presentations at GEO Workshops and Conferences.

### EO tools

#### > Satellite data

- Conventional optical sensors : Landsat Thematic Mapper, ASTER, Hyperion, etc.
- Very high resolution optical sensors, such as Ikonos, Quickbird, SPOT 5, etc.
- Radar sensors , in particular for INSAR applications

#### > Airborne data

- Airborne imaging spectroscopy (hyperspectral) survey
- Airborne geophysics : radiometric, electromagnetic, aeromagnetic

#### > In situ monitoring methods

- Time-lapse electrical resistivity tomography (ALERT)
- Ground monitoring networks
- In situ point measurements
- Field spectroradiometry campaigns
- Information and/or measurements about vegetation, soil, groundwater and dust
- Chemical Model and 3D Characterization of the contaminated soils

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