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 existing EO knowledge and carry out new developments on demonstration sites to further demonstrate the capabilities of integrated EO-based methods and tools in monitoring, managing and contributing reducing the environmental and societal footprints of the extractive industry during all phases of a mining project, from the exploration to the exploitation and closure stages

Contribute making reliable and objective information about affected ecosystems, populations and societies, to serve as a basis for a sound “trialogue” between industrialists, governmental organisations and stakeholders

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, inviting 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 for 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.

Consortium

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<td>Bureau de Recherches Geologiques et Minieres</td>
<td>France</td>
<td>Council for Geoscience</td>
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WP organisation

WP1: Policy Analysis and Indicator Identification

1.1: Policy analysis

- Environmental, socio-economic and micro (mining companies) levels

1.2: Information Requirements and Indicators

- Identification of information requirements
- Identification of operational indicators

1.3: Resonance analysis of selected indicators and EO services

WP2: Protocols and standards for EO products

- 2.1: Mission Planning
- 2.2: Data inspection
- 2.3: Atmospheric corrections and validation
- 2.4: Thematic accuracy and validation
- 2.5: Documentation and dissemination

WP3: EO applications and development over demonstration sites

- 3.1: Site specific available data acquisition
- 3.2: EO data acquisition
- 3.3: Quality assessment
- 3.4: Data processing, data fusion, algorithm development
- 3.5: Footprint assessment and risk analysis
- 3.6: Interaction with stakeholders and capacity building at site level

WP4: EO integration, products and systems

- 4.1: EO products
- 4.2: Models for forecast and simulation
- 4.3: Environmental observation systems
- 4.4: EO-MINERS and GEO

WP5: Communication, dissemination, capacity building and exploitation

- 5.1: Dissemination and capacity building
- 5.2: Communication and promotion
- 5.3: Initiating and establishing a sound “trialogue”
- 5.4: Exploitation and IPR

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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