

A contribution to GEOSS from the SDI for Georesources in Africa

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in behalf of:

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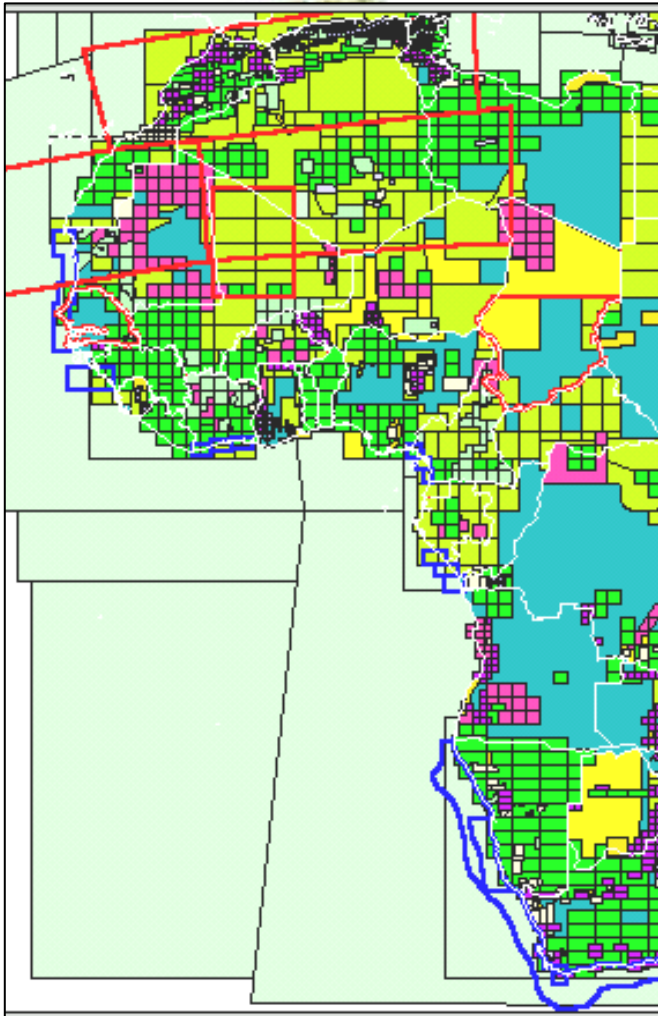
Presentation outline



- Contexts: cooperation and geoscience
- Why AEGOS ?
- Objectives
- Results and deliverables
- Project team and organisation
- End users
- Contribution to GEO and GEOSS

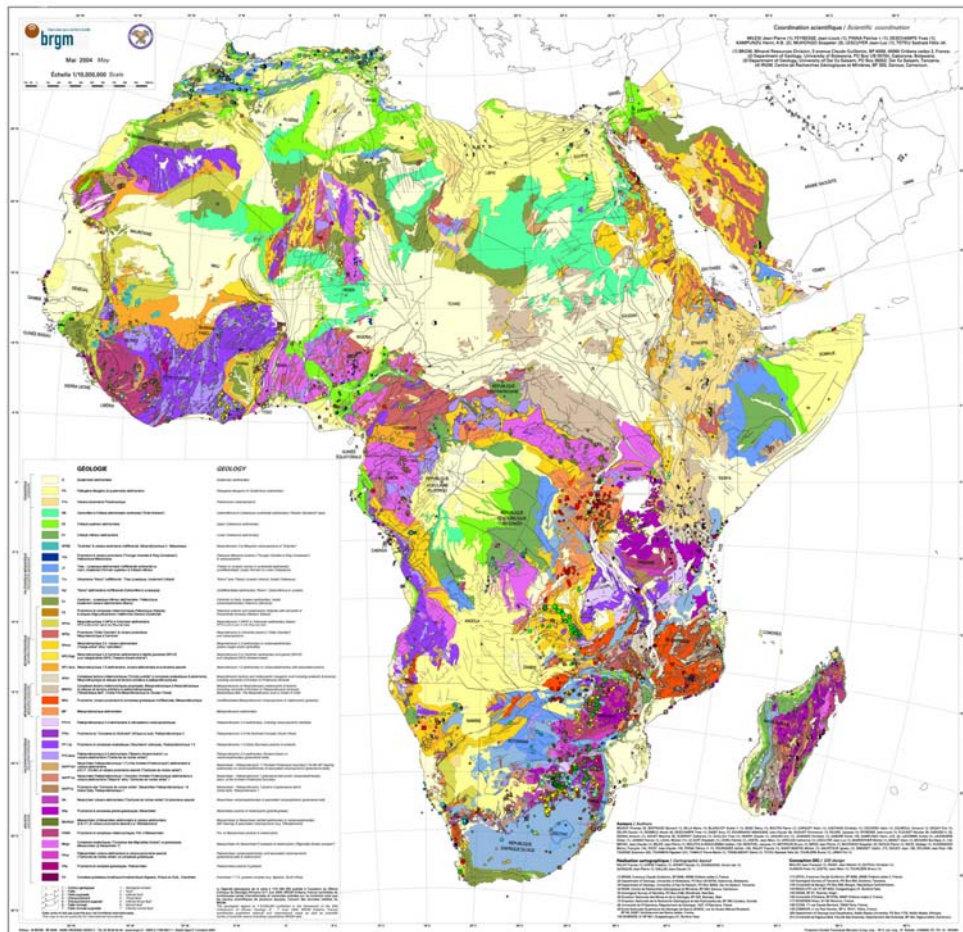
Mr./Mrs. Investor: I wish I knew, in my language or English at least, which is the mineral sector investment framework, what data / information is available on mineral potential, in which format, and how to access it, its quality and if it is interoperable with our IT system...





- > Africa has an important share of the global mineral resources and reserves – necessary for national and international economies: *more than 40% of the world known reserves in bauxite, manganese, cobalt, gold, diamond, platinum, rhodium*
- > A unique archive of Africa-related geoscientific data and information exists
 - they were acquired by African and European geoscientific organisations;
 - public, disseminated, partly hard to identify and access;
 - multiple formats, diverse geometric projections, several languages, under various custodianships;
 - they should be identifiable and accessible thanks to modern IT.

SIGAfrique network and GIS: a first step



www.sigafrique.net

- 2003-2005 – 13 ACP countries, 2 regional centres (UEMOA & SEAMIC), BRGM and CIFEG
- Synthesis of scientific knowledge and up-to-date concepts: descriptions, typology, metallogenic models.
- Cross-border correlations.
- A digital harmonised map coverage of Africa at continent and regional scale (1:10,000,000 and 1:2,000,000) shared by all partners.
- 2 georeferenced databases: geology-structural and 40,000 deposits & occurrences

Why AEGOS ?



- Data realises its full potential and value when made accessible (at affordable cost), used and disseminated.
- Developing the knowledge on mineral resources potential also benefits to knowledge development on e.g. groundwater and energy (incl. geothermal energy).
- Sustainable use of geology-related resources requires data, information and expertise for informed decision-making.
- Web-based Georesources databases are a key factor to base proper land-use planning/ environmental management policies and attract local/ foreign investment both at large and small scales.
- They are essential infrastructure for combining data, knowledge and skills in support of the sustainable development policies. The role of AU, UNECA, RECs, OAGS and the ACP Group of States is essential.
- **AEGOS scope:**
 - **Visibility and accessibility** of accurate and reliable public data
 - **Capacity building** for qualified human resources
 - **Efficient promotion of the available information** on potential resources with appropriate Intellectual Property Right management

- The exploitation and use of non-renewable natural resources must involve the people in an environment-friendly context
- The Earth is a complex system of systems with as many observation and environment monitoring infrastructures
- These infrastructures need to be coordinated and use standards (metadata, common data models, interoperability)

➤ **GEO-Group on Earth Observations:** 9 Societal Benefit areas



➤ **GEOSS-Global Earth Observation System of Systems:**

- more open data access (data sharing principles)
- foster use of Earth observation data through science, application and capacity building



➤ **INSPIRE:** Infrastructure for Spatial Information in Europe

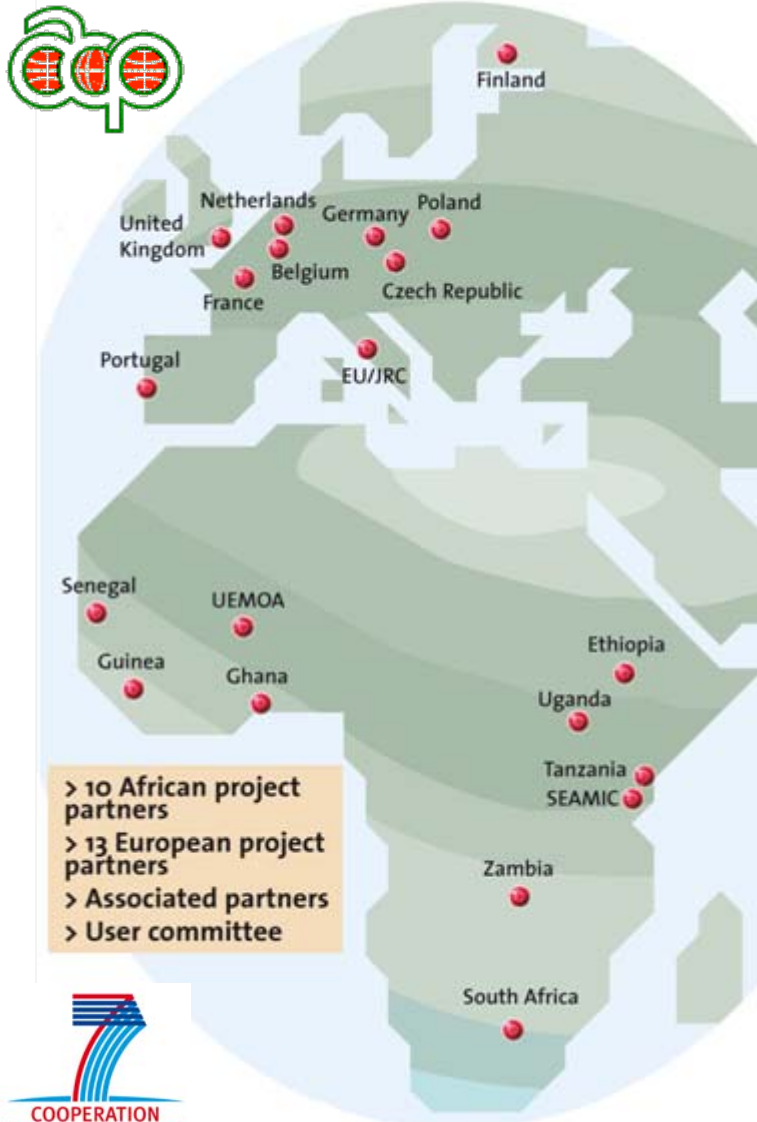


➤ **AEGOS:** contribution of geoscience to GEOSS in the context of INSPIRE

African-European Georesources Observation System



- Strengthen the sustainable use of underground resources in Africa by **designing the SDI for Georesources** based on interoperable geoscience data and user-oriented services
- **Safeguard, share and valorise** the knowledge and data archived in African and European geological surveys
- **Support geoscientific communities** and **institutional decision-makers** for sustainable development public policies
- **Elaborate common strategies** for capacity building and training programmes



- **Preparatory phase** (2008-2011) to design a multi-national georesources observation system
- **Main targets:** institutionnal decision-makers, investors, geoscientific communities and education
- **9 European** geological surveys
- **8 African** counterparts: geological surveys, ministries of mines, school of mines
- **4 International** organisations: EU Commission (Joint Research Centre), CIFEG, UEMOA, SEAMIC

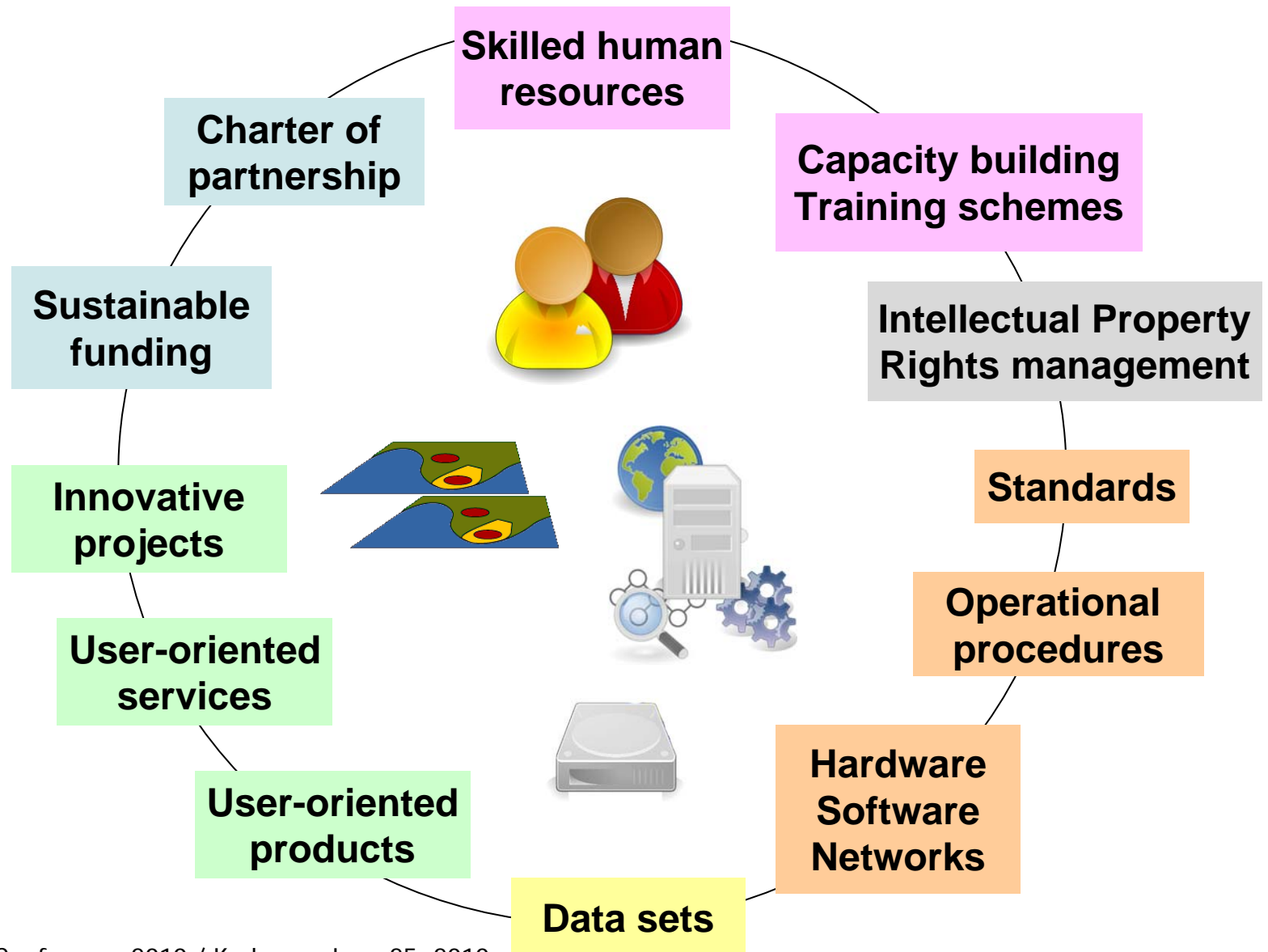
Project team



Consortium of 23 partners



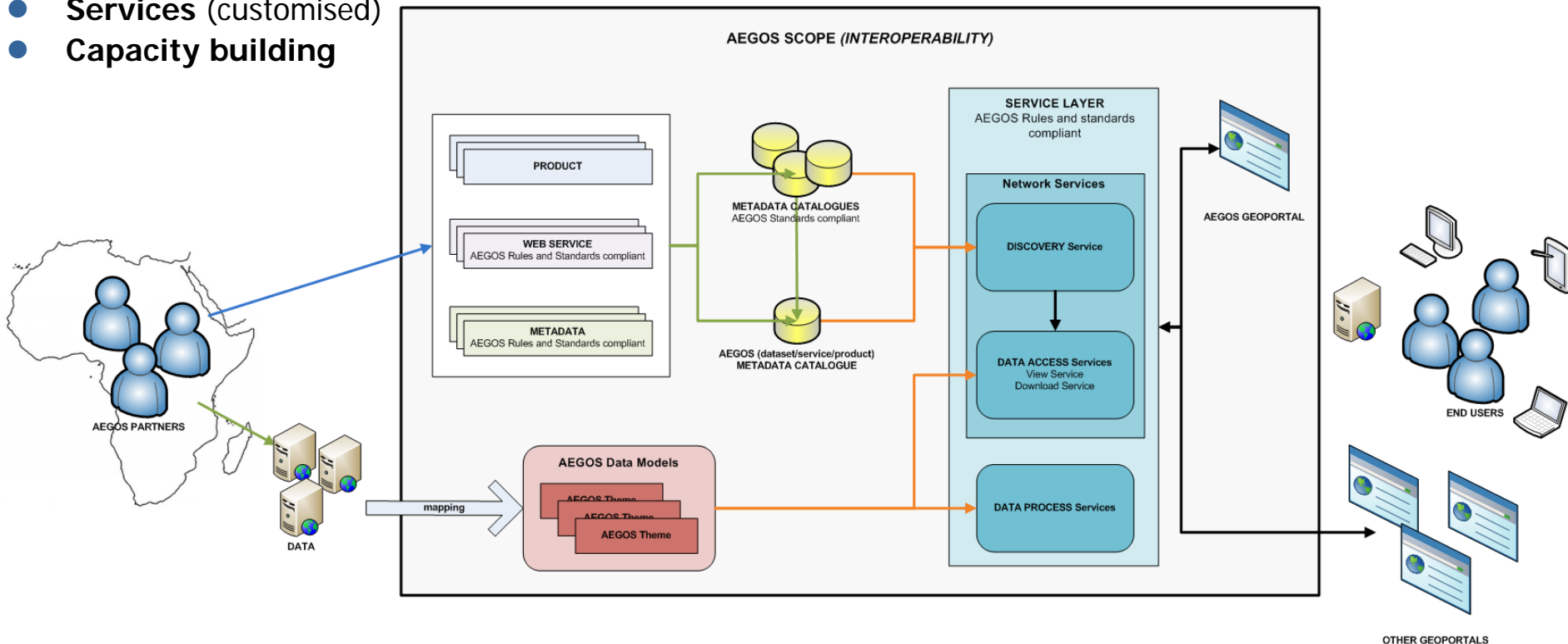
Infrastructure components



AEGOS distributed infrastructure



- **Metadata** on-line
- **Data** (on-line and off-line / e-AEGOS)
- **Products** (on-line and off-line)
- **Services** (customised)
- **Capacity building**

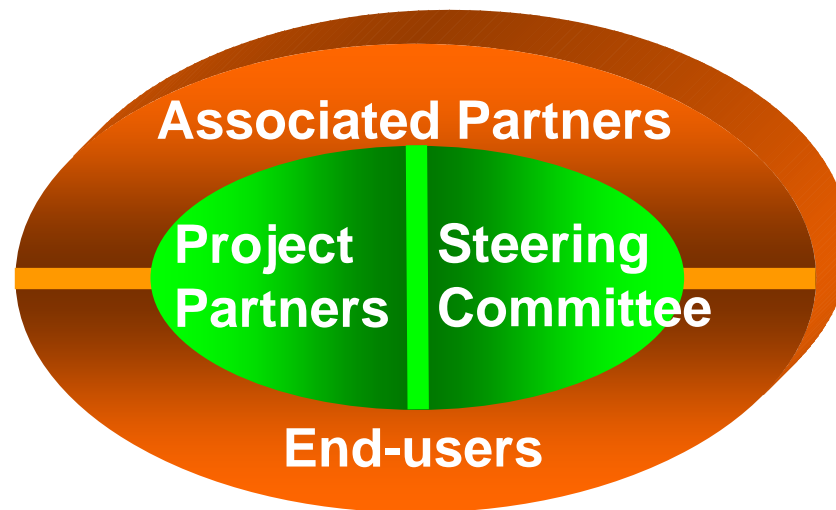


Arrows caption



- **Distributed infrastructure** of national multidisciplinary data sets
- **Internet and satellite-based access** to public geoscientific metadata and harmonised data
- **Operational procedures and open standards** to browse interoperable spatial information: ISO, OGC (WMS, WFS,...), IUGS/CGI (GeoSciML, *EarthResourceML*, *GroundwaterML*)
- **User-oriented products and services**: customized decision-support systems combining georesource information with socio-economic and sustainable development indicators
- **Capacity building and training programmes**
- **Permanent network** of institutions and geoscientists to facilitate cross-border and continental overviews
- **Charter of partnership** - Intellectual Property Right Management
- **Funding model** for the sustainability of the AEGOS infrastructure

- Policy makers, non-governmental organisations, geoscientific communities, education, research, entrepreneurs, investors...
- Mines, energy, environment, land use, agriculture and forest, water, hydraulics, natural hazards, socio-economy...



- Attend to the conferences
- Contribute to the thematic workshops
- Member of AEGOS end-users committees

Which benefits from AEGOS for African participants and end-users?



- Be an active **partner in designing and implementing** a modern georesources Spatial Data Infrastructure for Africa and relevant capacity building programmes.
- Benefit from the **strength and efficiency of collective means** and actions rather than at individual level.
- Facilitate **cross-border harmonisation** of georesources data with AEGOS partners
- Enhance the **capacity to plan and build scenarios** to better manage the non-renewable resources wealth in minerals, aggregate and groundwater.
- Market **investment opportunities** in the georesources sector
- **Improve the governance** taking into account the socio-economic factors
- Further **develop domestic commodities** to support the economy and meet the Millennium Development Goals (poverty reduction)
- Enhance the **level of human capacities** through dedicated schemes in information technologies and SDI management

- Survey on existing situation, end-user needs and requirements in selected organisations in Africa
- The future SDI will propose a panel of services
 - **Metadata**
 - **Data**: primary data from the producers
 - **Products**: data with added value resulting from combination and spatial analysis of data from multiple sources using an established procedure
 - **Services**: customised data processing upon request
- SDI facilities based on web services: discovery, view, download, process
- Intellectual property right management taken into account
- On-line for the end-users / Off-line for the centres of excellence in Africa
- Panel of end-uses:
 - Thematic maps
 - Predictive maps and reports
 - Resource management maps and reports
 - Promotional documents to market the potential georesources
 - Governance maps and reports

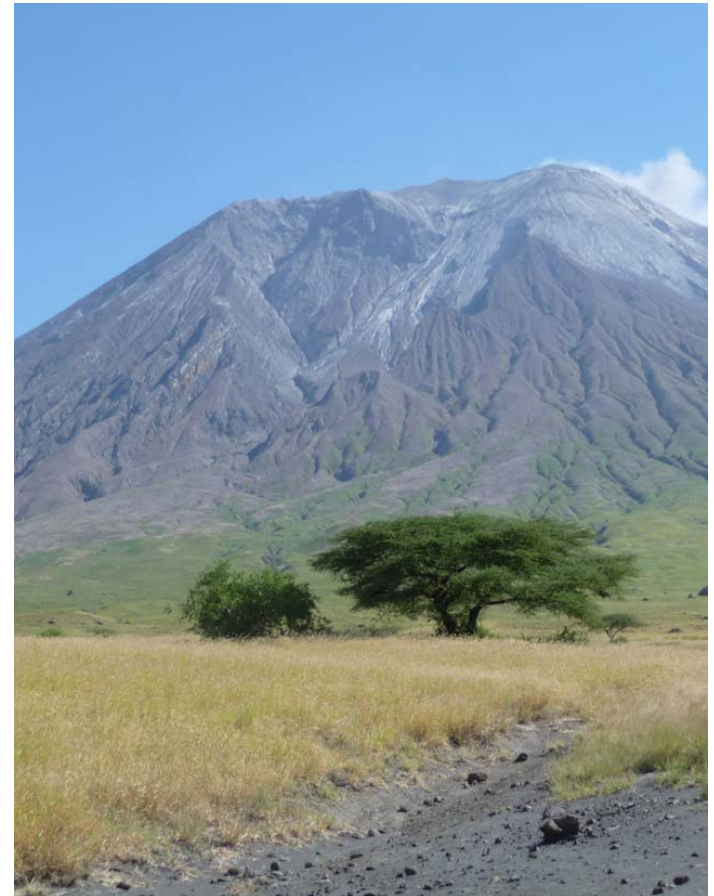
- Three **GEO societal benefit areas** relate to geology-related resources and underground spaces:
 - Reducing losses from **disasters**
 - Management of **energy** resources
 - **Water** resources management
- **GEO work plan** is being mapped to identify all the tasks relevant to geosciences
- Evolution of observing systems and integrate geosciences through a **Solid Earth Observing System**
- **AEGOS metadata and services will be registered** into the GEOSS catalogue to open visibility and interdisciplinarity with georesources on African continent
- Dedicated **AEGOS workshop** on “Geoscience Observations and Observing Systems” – 7-8 July / London, U.K.



AEGOS: where and when ?

AEGOS – Phase 1, 2008-2011

- Infrastructure design and network of contributors
- *Mid-Term Conference: May, 2010 – Dar es Salaam (Tanzania)*
- 5 workshops in U.K., Ghana, Senegal and South Africa (Oct., 2010)
- Final conference: Western Africa (Feb.-March, 2011)



AEGOS – Phase 2, 2012 - 2016

- Infrastructure development and implementation
- Training of the concerned persons
- Funding to be secured



Thank you for your attention
Merci de votre attention
Obrigado pela vossa atenção
www.aegos-project.org