



African-European Georesources Observation System (AEGOS)

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The sustainable use of resources of geological origin (georesources) such as groundwater, fossil energies and mineral resources requires knowledge based on data, information and expertise. In Africa, the largest single component of the African, Caribbean and Pacific (ACP) Group of States, it is a key issue, not only for development of the African countries, but also for the world's future in order to face the rising demand for raw materials, better infrastructures and services. However, initiatives by both African and European organisations are rarely coordinated and provide heterogeneous information systems. Moreover, data collected during colonial times constitute a unique archive of Africa related geoscientific information which primarily needs to be shared with African partners. Identifying and providing access to this data and information represents a major stake for sustainable public policy-making across the various levels of public authority. Thus, the availability, traceability, accessibility and processing of geological and geology related information is essential when using Geographical Information System (GIS) technologies on heterogeneous data from multiple sources.

In February 2009, a consortium of 23 African and European partners will launch the Phase 1 of the African-European Georesources Observation System (AEGOS). This collaborative work programme is the preparatory phase needed to design a pan-African infrastructure of public, interoperable geological and geology-related data as well as user-oriented services to foster and strengthen the sustainable use of georesources in Africa. AEGOS aims to safeguard, develop share, and add value to the data archived in African and European geological surveys and to support further knowledge development on Africa's geology and georesources. This observation system will provide support to many end-users: policy-makers at all geographic levels, development agencies, private sector actors, geoscientific communities and civil society.

The main objectives of AEGOS Phase 1 (www.aegos-project.org) are to define: i) operational procedures for data management (Spatial Data Infrastructure, metadata, data specifications and systems architecture), ii) user-oriented products and services including the preparation of innovative spin-off projects, iii) the African-European partnership network, iv) a geoscience contribution to the Global Earth Observation System of Systems, in the context of the Infrastructure for Spatial Information in Europe (INSPIRE). Thus, AEGOS will contribute to the development of a Solid Earth Observing System by exploring interoperability and interdisciplinarity scenarios in support of GEOSS and processing combined analysis of datasets related to georesources with other data from environment and socio-economic observation systems.

AEGOS phase 1 (2008-2011) is a Support Action of the 7th European Commission's Research and Technology Development Framework programme (FP7). During this phase, the initial consortium will be widened, inviting as many as possible African partners to join in view of Phase 2 (2012-2015). Being the infrastructure system design, the output of Phase 1 will comprise the detailed reference terms (AEGOS Charter) of the actual Observation System in view of its implementation during Phase 2.

The development of end-user oriented products and services, the evaluation of their feasibility and applicability are important in view of the future implementation of AEGOS. A generic approach for the development of innovative projects in line with the end-users needs (public authorities, industries, research institutes) will be formalised and subsequently, spin-off test-bed projects will be specified that would be implemented during AEGOS Phase 2. Several case studies are identified: i) West African Exploration Initiative: predictive mineral map for the development of infrastructures dedicated to mineral resources; ii) Mineral resource development and waste management in Zambia: map service, which enable to perform different GIS analyses for purposes of decision makers and local authorities; iii) Trans-boundary aquifer management between Namibia and Botswana: a web-based system for storage and display of groundwater-related attributes, accessible for Namibia and Botswana; iv) Water resources development and management in Sub-Saharan Africa: groundwater resource assessment map based on scattered data in mining area; v) Direct use of medium enthalpy geothermal resources

in Eastern and Southern Africa: state-of-the-art and potential for medium enthalpy geothermal resources and their direct use (greenhouses, cooling, drying...).

Depending on their technical or non-technical profile and on their level of interest, all concerned African states and organisations may be involved either as associate partners or as members of the end-user committee. They will be regularly informed to take part to conferences and workshops. They include ACP states, African national and regional institutions in charge of economic development or of science and technology; non-governmental organisations, geoscientific communities, academia and research, enterprises, investors in the domains of agriculture, social and economic development, energy, environment, land use, mineral resources, natural hazards, water and hydraulics.

During AEGOS Phase 1 (2008-2011), three major conferences (launching, mid-term and final) will be organised with participation of all project partners, associated partners and the user-committee. In between, each project work package will organise thematic and specialised workshops on the various components of this new observation system

> SUPPORT ACTION OF THE EUROPEAN UNION 7TH R&D FRAMEWORK PROGRAMME

- **PREPARATORY PHASE** for the building of a pan-African information system on Africa's geology and related resources: raw material, minerals, groundwater, energy,...

- **DISTRIBUTED ARCHITECTURE** of national multidisciplinary data sets presently disseminated and managed by African and European geological surveys

- **INTERNET-BASED ACCESS** to public geoscientific metadata and harmonised data

- **USER-ORIENTED PRODUCTS AND SERVICES:** customized decision-support systems combining georesource information with socio-economic and sustainable development indicators

- **OPERATIONAL PROCEDURES AND OPEN STANDARDS** to browse interoperable spatial information: ISO/CEN, OGC (WMS, WFS), IUGS/CGI (GeoSciML),...

- **CAPACITY BUILDING AND TRAINING PROGRAMMES**

- **PERMANENT NETWORK** of institutions and geoscientists to facilitate cross-border and continental overviews

