

Geological and Mineral Information System (GMIS) Strategy



Meeting Report
Cape Town, South Africa
24- 26 August 2016



United Nations
Economic Commission for Africa

BACKGROUND

In 2009, the Africa Mining Vision (AMV) was adopted by African Heads of State and Government with the long-term goal of attaining “transparent, equitable and optimal exploitation of mineral resources to underpin broad-based sustainable growth and socio-economic development”. To support the coordination and implementation of AMV, the African Minerals Development Centre (AMDC) Project was established. The AMDC Project has four implementing partners consisting of the African Union Commission (AUC), the Economic Commission for Africa (ECA), the African Development Bank (AfDB) and the United Nations Development Programme (UNDP).

The Geological and Mineral Information Systems (GMIS) Strategy represents a shift from geological information just for mining development to geological information, which supports broad-based sustainable growth and socio-economic development.

At the core of the AMV is the question of how to improve development outcomes related to Geological and Mineral Information System (GMIS), i.e. how can GMIS better support the achievement of local, national and regional development goals?

For GMIS, the AMV represents a shift from geological information just for mining development to geological information, which supports broad-based sustainable growth and socio-economic development. Under the AMV, geological information cannot be separated from issues of governance, policy and licensing, linkages and beneficiation, artisanal and small-scale mining (ASM), and capacity development for example. The AMV comes as a whole.

As such, the goal of all AMV compliant geological initiatives, projects, activities and strategies is “to improve geological and geospatial information and its use in mining and broad development processes in Africa”.

The GMIS Strategy was proposed by the AMDC to facilitate the strengthening of the African production, management and dissemination of geological and mineral information (GMI) in connection with the implementation of the African Mining Vision (AMV) and the domestication of the Country Mining Vision (CMV). It consists of GSOs, universities, and other national and sub-national agencies with geological functions, the private sector and civil society groups that generate, hold or use geological information, along with Regional Economic Communities (RECs), centres of excellence and other international institutions and initiatives that undertake or support the generation, management or sharing of geological information. Together with these entities, their activities and their data form a Pan-African geological and information system.

The Strategy is expected to serve as a guide for the AMDC and its implementing partners to provide strategic operational support for AU Members States and their Geological Survey Organizations (GSOs)

and centres of excellence to improve GMIS, which will encourage investment across the whole mineral value chain, facilitate price discovery for governments, support decision-making in contract negotiations and mining development, and facilitate broad development processes. It is also planned to coordinate, set direction, create alignment, build commitment, promote collaboration, establish trust, mobilize supporters, and facilitate activities from different GMIS initiatives in the continent.

The Strategy covers a five years period, which will start in the current context of the AMDC operating as a project hosted by UNECA, continue over a transition phase and set the bases for the future work of the AMDC as the new semi-autonomous Specialized Agency of the AUC.

It is expected that the GMIS Strategy will promote the development of Spatial Data Infrastructure (SDI) among African countries as a tool for GMIS management; provide open access and facilitate data sharing and distribution across various levels of users, including private sector and government agencies; increase regional and national mapping and exploration activities; and support the development of continent-wide mineral inventory.

The GMIS Strategy sees geological and geospatial information as crucial for several important legal, economic, social and environmental applications in mining and broad development processes in Africa.

The sustainability of the GMIS Strategy is significantly anchored on its ability to build, manage and maintain partnerships. Dialogue is the method used to build the AMDC's GMIS Strategy with the final goal of having optimal outcomes from all partners involved in its implementation with the commitment of improving geological and geospatial information and its use in mining and broad development processes in Africa. To this end, the three-day GMIS Coordination Meeting was held at Cape Town Lodge, Cape Town, South Africa on August 24-26, 2016.

OBJECTIVES

The GMIS Strategy sees geological and geospatial information as crucial for several important legal, economic, social and environmental applications in mining and broad development processes in Africa. It is planned to coordinate, set direction, create alignment, build commitment, promote collaboration, establish trust, mobilize supporters, and facilitate activities from different GMIS initiatives in the continent. The objectives of the coordination meeting are as follows:

- Establish the Regional Economic Commissions subcommittees;
- Adoption of the OAGS membership and governance structure;
- Adoption of the GMIS Strategy Coordination Committee according to the recommendations of the AU Specialized Technical Committee;

- Review the draft Principles for GMIS and define the conditions required of geological initiatives to be considered AMV compliant;
- Discuss the production, management and dissemination of geological and mineral information on the African continental shelf and adjacent oceanic areas; including the establishment of centres of excellence for marine geology and mineral resources;
- Set out areas of collaboration between the existing geological initiative;
- Discuss a GMIS Strategy coordination plan and set out reporting mechanisms for geological initiatives under the GMIS Strategy.

PARTICIPANTS

The GMIS coordination meeting was attended by over 54 Directors General from African Geological Survey Organisations (GSOs), representatives of regional economic commissions (COMESA, Arab Maghreb Union, Comissario dos Recursos Naturais, Bissau, Guinea-Bissau), geological initiatives (OAGs, OneGeology, SEAMIC), partner organisations (UNECA, AUC) and experts from international organisations (UNESCO, GEUS).



COORDINATION MEETING STRUCTURE

The meeting was opened by welcome messages and introductory remarks from Kaiser Gonçalves de Souza, Senior Geology and Mineral Information Advisor of the African Minerals Development Centre and Frank Dixon Mugenyi, Senior Industry Advisor of the African Union Commission. The agenda and the work programme were presented followed by the overview of the objectives of the meeting. The plenary sessions that followed each presentation were facilitated by Aberra Mogessie, President of the Geological Society of Africa.

The following are the details of the meeting's programme of work:

- Presentation of the GMIS Strategy: *Kaiser de Souza, Senior GMI Advisor, AMDC*

- Revision and agreement on the draft principles for GMIS: *Kaiser de Souza, Senior GMI Advisor, AMDC*
- Discussion on the production, management and dissemination of GMIS for the African Blue Economy: *Kaiser de Souza, Senior GMI Advisor, AMDC*
- Discussion on the UNFC 2009 standardization framework: *Tunde Arisekola, Vice-Chair of Resource Classification, Nigerian Geological Survey*
- Database construction and geospatial data management: *Joao Henrique Gonçalves, CPRM, Geological Survey, Brazil*
- Discussion on OAGS strategy and other documents: *Anna Nguno, Acting Director, Geological Survey, Namibia* and *Fhatuwani Ramagwede, OAGS Consultant*
- 9th OAGS Annual General Meeting
- Discussion on OAGS –GMIS
- Establishment of RECs Sub-Committees and discussion on the representation of the OAGS: *Frank Mugenyi, Senior Industry Advisor, African Union Commission*
- GMIS Coordination Committee in the GMIS Functional Structure: *Frank Mugenyi, Senior Industry Advisor, African Union Commission*
- GMIS Coordination Committee in the GMIS Functional Structure: *Kaiser de Souza, Senior GMI Advisor, AMDC*
- Plenary recommendations: the way forward – GMIS roadmap including initiatives, activities, coordination, monitoring and reporting: *Kaiser de Souza, Senior GMI Advisor, AMDC* and *Aberra Mogessie, President of the Geological Society of Africa*



SUMMARY OF OUTCOMES

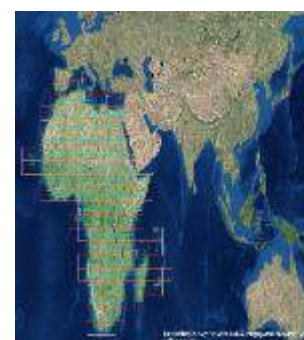
- The African Geological and Mineral Information System (GMIS) Strategy draft principles were approved by the Directors General of African Geological Surveys
- The African GMIS Strategy, including its general plan of activities were approved
- The African GMIS Coordination Committee was organised and other bodies were organised as part of the GMIS functional structures
- Next steps towards the development of the GMIS for African Blue Economy were drawn
- The Organisation of African Geological Surveys (OAGS) Strategy was reviewed and subject to amendments

Plenary Recommendations

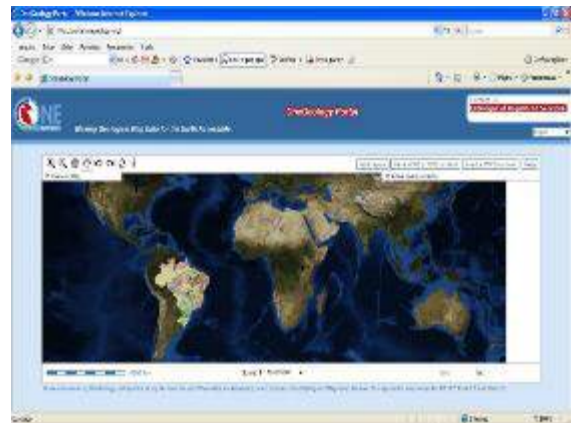
- Recalling the Bamako decision that AUC and AMDC should foster a South-South cooperation, the meeting resolves that the AMDC should prepare a proposal for an African GMIS database and GIS infrastructure as the one used in Brazil which was presented in this meeting.
- The meeting adopts the principles of the GMIS Strategy with the amendments made by the members on the document contained in the GMIS brochure (edited by Kaiser de Souza and Aberra Mogessie).

Meeting Notes 1. The GMIS Strategy

- The GMIS Strategy does not have provisions for tackling data collection from the national GSOs. The Strategy needs to specify this particular item and has to take this into consideration for the data collection is time-consuming.
 - The issue of hosting geo-data is a sovereign issue and must therefore reside in the country of origin
 - One important issue to has to be regarded is the duration of the confidentiality agreement of the access to GMI
- AMGIC was considered as the continental centre for geological and mineral data and the assessment of the centre has been done, and recommendations given. However, regional centres should also be taken in account.
- The AU Commission is establishing a regional ministry of mines in Bamako and there will be a November for the establishment of the continental chamber of mines
- The process of finding a host country for AMDC is underway. There are were five (5) countries considered: Zambia, Kenya, Guinea, Sudan and Mali.



- ECOWAS could support Guinea in proposing to be the seat of AMDC
- The general format of GMI access follows the collection of meta-data. Then, countries are able to decide when to open specific data as needed.
 - The issue of accessibility has been discussed during the AMGI process, as it is also essential for contract negotiation.
- Clarification on the role of geological initiatives in GMIS: EuroSurvey data has to be upgraded. OneGeology serves as a platform of geological information where users can access preliminary data provided by the country. The ownership and storage of the data remains in the country of origin.
- In order to have an updated database of geological information, a recommendation was made for national geological surveys to provide information to the OAGS Secretariat as to what GMI their respective countries have.
- Colonial data has to be consolidated and turned over to the national GSOs.
- GMI data should stay in the country of origin so no issues regarding ownership should be raised. However, there has to be a common platform where this data can accessed.
 - One of the aims of the Geological Information Coordination Committee is to create a platform where GMI data could be accessed from.
 - In the GMIS Strategy, principles on how to deal with initiatives are in place. This ensures that initiatives are AMV-compliant
- Cameroon is one of the focal countries identified by the European Union for the development of industrial minerals



Agreed Amendments to the GMIS Principles- Document

- A proposal to create an initiative under OAGS for the promotion of GeoEthics was made. This initiative can accompany the AMDC in promoting GeoEthics in the African context.
- The capacity for creating national inventories of GeoHeritage should be built with a goal to consolidate the inventories into a continental-wide African GeoHeritage Inventory. Usage of existing methodologies is recommended (French and Spanish methodologies) with the aim to develop African GeoHeritage mythologies.
 - GeoEthics and GeoHeritage can be added to the GMIS Strategy as part of the Area of Special Interests
 - Principle 4 on the GMIS Strategy: has to be amended and worded positively. It also needs to include GeoEthics

- The issue of nomenclature of *Programmes, projects and initiatives* was raised. A call to keep the subtitle was made. The decision was to define “*Initiatives*” and keep the title as is.
- Principle 8: a recommendation was made to include (*should follow*) “continental standards”

Meeting Notes 2. The United Nations Framework Classification for Fossil Energy and Mineral Reserves and Resources (UNFC-2009)

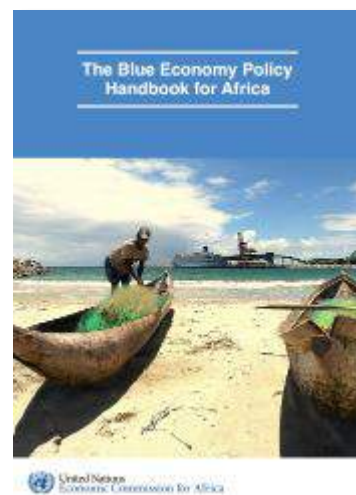
- The UNFC-2009 is a universally applicable scheme for classifying/evaluating energy and mineral reserves and resources. It enables the incorporation and unification of existing national systems. While allowing their classification units and glossary to be retained.
- The principal objective of the UNFC-2009 is to enhance international communication by providing a simple, user-friendly and uniform format for the reporting of energy reserves and resources, using market-based economic criteria.
- The main challenge African countries is how to domesticate the UNFC-2009 and make it relevant to their economic environments.



- The African Union’s Agenda 2063 emphasises the “minerals for development” agenda. The social license is not within the economic context but in social development. It is imperative to look at the whole mineral value chain and be determined to have an understanding with the private sector operating in mineral resources. For instance, the role of investment in corporate social responsibility that should be focused in supporting local content for development. This is in-lined with the context of the AMV, under the Agenda 2063.

Meeting Notes 3. The GMIS for the African Blue Economy

- The international seabed areas are strategically important. For the coastal country, as in this case Brazil, they are socially and economically important. These are the considerations that have to be taken account in discussing the role of the International Seabed Authority in the African continental shelf.
- Countries who have licenses for seabed exploration are allowed to stay in the areas for fifteen (15) years. They can make concessions for extension, siting difficult economic conditions for exploration.



- Because of the low commodity prices (carbonates, sand, potassium and gas), very few requests were received to explore the African continental shelf.
- Since the explorations are currently done in the eastern South American coast, a query was made if Western African countries are able to participate in these investigations of the Western African continental shelf. Offer of assistance and request of assistance were made in order to push the process further.
- UNESCO is hosting a commission on continental shelves. Recommendation for partnership in continental exploration, particularly in the African continental shelf was given.
- Capacity building is needed particularly in leveraging existing information of the marine ecosystem.

Meeting Notes 4. Database Construction and Geospatial Data Management

- Brazil has one central database where all data can be sourced and accessed. Currently, there are no channels wherein other agencies and institutions can populate the database. Universities are cooperating to acquire geological information though harmonising their methodologies is challenging.
 - Universities do not have protocol in data collecting, one of the reasons why we do not integrate their data in the GM I database. Questions on the integrity of data universities provide could also be raised, and who will be responsible if the information is incorrect.
- Cloud technologies are used to store data, so there are no issues regarding storage capacities.
- Backing up data on cloud is a non-issue. Geological information do not change a lot overtime, so backing up can be scheduled annual.
- GSOs can use universities to collect GMI. This means that GSOs have to provide the methodologies, standards and protocol necessary to harmonise information. GSOs will also have the responsibility to validate the information they collect.



Meeting Notes 5. Organisation of African Geological Surveys (OAGS)

- The Organisation of African Geological Surveys (OAGS) Strategy was adopted with minor changes.
- Amendments to the OAGS constitution were made and adopted during the meeting,
 - There will be one (1) President and five (5) Vice-presidents based on regions
- The following are the elected countries for the President and Vice-presidents seats to be taken on December 31, 2016.
 - President: Nigeria
 - Vice-president for Southern Africa: Botswana
 - Vice-president for Eastern Africa: Kenya
 - Vice-president for Northern Africa: Morocco
 - Vice-president for Central Africa: Chad
 - Vice-president for Western Africa: Senegal
- Engagement with international partners (UNESCO, AMDC, and UNDP) and OAGS have to be made, especially with regards to the identification of projects.
- During the meeting, the PanAfGeo project was also discussed.
 - A three-day brief introduction of the project will be presented at the International Geological Conference (IGC)
 - Co-leaders from Africa and Europe have to be identified
- Way forward: Accreditation from the AUC
- Registration of the OAGS as a legal body
 - Opening of bank accounts
 - Membership fee for OAGS members; however, due consideration will be given for initial members



APPENDICES

Summary of Process for the Preparation of the GMIS Strategy

The preparation of the GMIS Strategy by the AMDC can be summarized in the following steps:

Step 1: Assess all GMIS issues outlined in: AMV and its Plan of Implementation, AMDC Business Plan, CMV Handbook, decisions taken by the African Union Conference of Ministers responsible for Mineral Resources Development (CAMRMRD), AUC expert meetings and other documents related to the GMIS initiatives in Africa. This assessment allowed:

- Mapping and reviewing existing institutions, initiatives and capacities related to GMIS in Africa to set repositories of expertise and their comparative advantages;
- Recognising existing approaches that potential partners are using;
- Awareness of the outstanding capacities and gaps that exist in the area of GMIS; and
- Work out how the AUC/AMDC might strategically engage, with partners, on these issues.

Step 2: Prepare background papers, concept notes and outlines as the starting point for discussion and preparation of the GMIS Strategy. This includes providing programmatic, administrative and technical support for the elaboration of the GMIS Strategy.

Step 3: Organize the first technical meeting with a small group of technical experts, which was held in Addis Ababa, Ethiopia, on 15-17 September 2015 to:

- Review the relevant information and prepare a detailed draft annotated outline for the GMIS Strategy;
- Map out initiatives and institutions, and their current roles in relation to geology and mineral information systems under the AMV;
- Identify priority issues and interventions for the benefit of African GMIS; c. propose and review terms of references for different activities related to the elaboration and implementation of the GMIS Strategy;
- Draft principles for GMIS compliant with the AMV, taking into consideration the best practices on Africa and other continents on geological and mineral information production, processing, management and dissemination;
- Identify and propose alternatives to finance GMIs activities in Africa;
- Review the options for addressing GMIS from the CMV Guidebook, the Action Plan for Implementing the AMV, and other documents, taking into account the principles above;
- Prepare a first draft of the GMIS Strategy, including principles.

Step 4: Promote a GMIS “think-tank” capacity to collect feedback and recommendations to allow the updating of the draft GMIS Strategy by stimulating discussions in conferences, workshops and meetings. This included presentations and discussions on the following events:

- AUC-Technical Working Group (TWG) of the AMV Meeting, Bamako, Mali, 28 September to 2 October 2015
- International Forum on Madagascar Mining & Petroleum, Antananarivo, Madagascar, 23-24 September 2015
- Geo-Information for Africa Network (GIRAF) Meeting. Maputo, Mozambique, 5-9 October 2015
- Deep Seabed Mining: An Initial Multi-Stakeholder Dialogue Meeting. Bellagio, Italy, 7-9 October 2015
- Workshop on the African Blue Economy Handbook. Rubavu, Rwanda, 23-27 November 2015.
- AMGC Evaluation Mission, Dar es Salaam, Tanzania, 7-11 December 2016
- Mining Indaba discussions on GMIS Strategy with the World Bank and other partners and delegations from various countries. Cape Town, South Africa, 6-11 February 2016
- Internal UNECA/AMDC meetings, including participants from Governance and Participation, Policy and Licencing, Artisanal and Small-Scale Mining, Linkages, Investment and Diversification, Human Capital and Institutional Capacities and Communication and Advocacy work stream

Step 5: Based on the results of the different meetings and workshops outlined above, prepare an updated draft of the GMIS Strategy containing a clear:

- **Plan of Activity** to be coordinated by the AMDC in cooperation with its partners and the different African GMIS initiatives. It allows the implementation of activities at national, regional and continental levels, as well as in areas of special interest.
- **Functional Structure** to facilitate joint coordination, provide sustainability and enable regular exchanges between all the partners involved in the implementation of its Plan of Activities. It is a mechanism to support a natural build-up of institutional understanding, which is essential to communicate, revalidate and monitor changing political priorities in GMIS. The Functional Structure is organized in such way that it allows permanent and efficient planning, validation, implementation, monitoring, evaluation and updating of its specific activities and projects.

Step 6: Consult on large-scale with GMIS partners and initiatives to present, debate and obtain support, as well as building partnership for the elaboration and implementation of the GMIS Strategy. Partners and initiatives include: Division of Energy and Extractives of World Bank; UNESCO's Division of Natural Sciences and the Intergovernmental Oceanographic Commission (IOC); Commission for the Geological Map of the World (CGMW), European Geological Surveys (EGS), including PanAfGeo; Geological Society of Africa (GSAf); African Minerals and Geosciences Centre (AMGC); Organization of

African Geological Surveys (OAGS); UNESCO represented by the African Network of Earth Science Institutions (ANESI); The African Association of Women in Geosciences (AAWG); and others. As a result of this consultation, the AMDC an updated draft GMIS Strategy.

Step 7: Present, discuss and deliberate on the updated draft GMIS Strategy at the AUC Technical Working Group meeting, which will be held in Dar-es-Salaam, Tanzania, on 24-26 March 2016. This meeting,

- Defined the conditions required of geological initiatives to be considered as AMV compliant;
- Discussed areas of collaboration between the existing geological initiatives; and
- Issued recommendations to the AU Specialized Technical Committee (meeting of Ministers) for the establishment and implementation of the GMIS Strategy Functional Structure.



Step 8: Approval by the AU Specialized Technical Committee Meeting, in Addis Ababa, Ethiopia, on 24 May 2016, with recommendations for the establishment and implementation of the GMIS Strategy, including its Plan of Activities and Functional Structure.

Step 9: Review and endorse the GMIS Strategy; implement the GMIS Strategy Functional Structure and coordination mechanism; establish the RECs subcommittees; establish the GMIS Strategy Coordination Committee as outlined in the GMIS Functional Structure; review the draft Principles for GMIS; set out areas of collaboration between the existing geological initiatives; and discuss a GMIS Strategy coordination plan.



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African Mineral Development Centre (AMDC)

Geological and Mineral Information System (GMIS) Strategy Plan of Activities



PURPOSE

Strengthen the African Union (AU) Members States capacity to produce, manage and disseminate geological and mineral information

OBJECTIVES

- 1- Coordinate and provide strategic operational support for AU Members States to improve geological and geospatial information and its use in mining and broad development processes in Africa**
- 2- Set direction, create alignment, build commitment, promote collaboration; establish trust and mobilize supporters from different GMIS initiatives in Africa**

AREAS OF ACTIVITIES

**1.- National level
(domestication of the CMV)**

Background and feasibility studies, recommendations and guidelines

Capacity building of the national GSOs in connexion with the domestication of the CMV

Strengthening of GMIS at African Universities

**2.- Regional and continental levels
implementation of the AMV)**

Capacity building of and activities from the AMGC

Strengthening of GMIS facilities at the RECs

Strengthening of the OAGS

Standardization, harmonization of nomenclatures, resource

PPP and South-South and triangular cooperation

3.- Areas of special interest

Strengthening of the African:

Blue Economy; Artisanal Mining; Industrial minerals; underground water, natural hazards, infrastructure, geo-heritage, geo-tourism, agriculture, environment, waste management, among others

4.-Legal and regulatory framework

Elaboration of GMIS Principles

Background studies, draft recommendations and guidelines for financing GSOs from mineral revenue; production of information for contract negotiation, taxation and elaboration of tenders; transfer of corporate geodata to national GSOs; and mechanisms for data sharing and distribution among others

PROJECTS AND ACTIVITIES

Strengthening of African Centres of Excellence

EXPECTED RESULTS

Improved geological and geospatial information and its use in mining and broad development processes in Africa

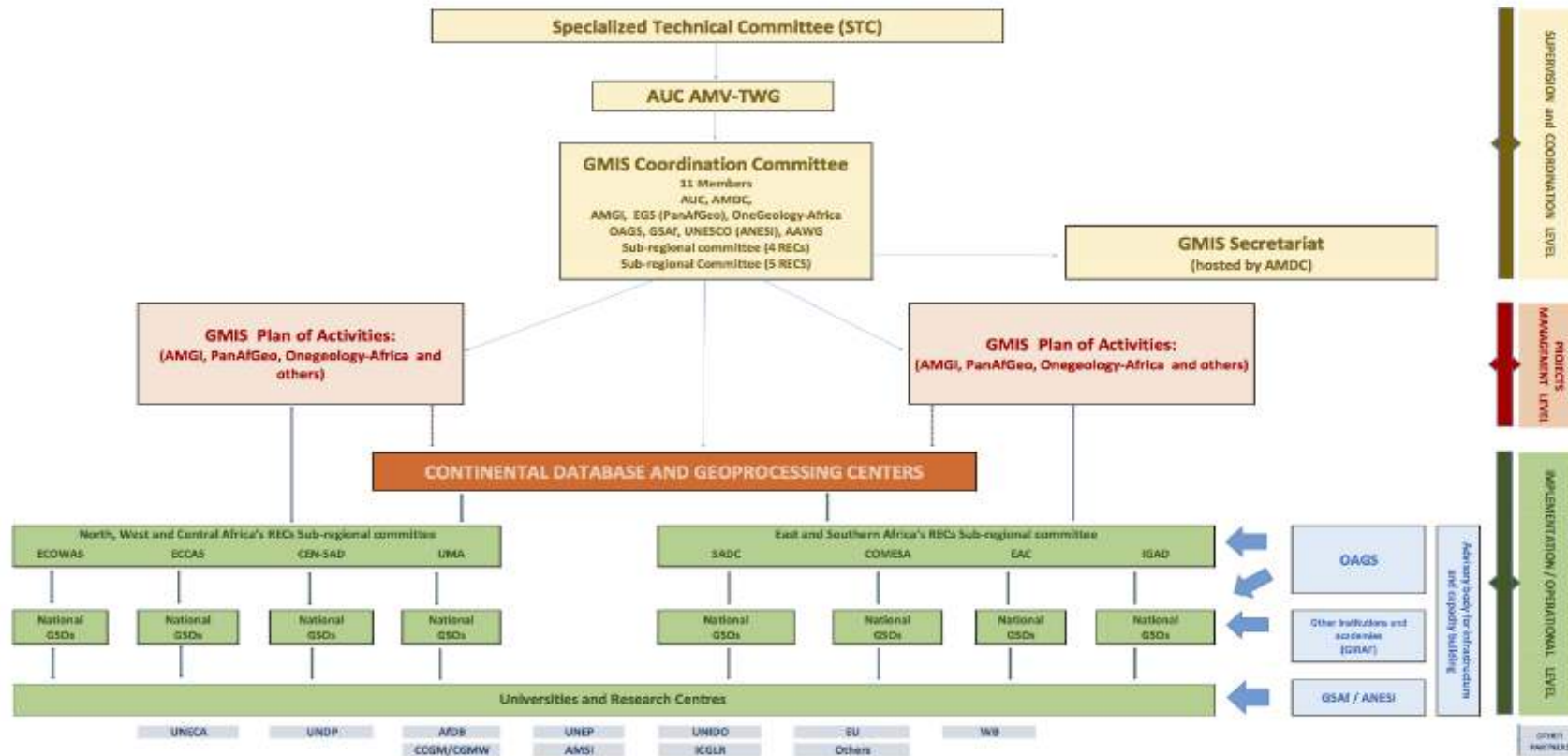


United Nations
Economic Commission for Africa



**African Union Commission (AUC)
African Mineral Development Centre (AMDC)**

**GEOLOGICAL AND MINERAL INFORMATION (GMIS) STRATEGY
FUNCTIONAL STRUCTURE**



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