

AFRICAN UNION

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AU/TI/ID/CAMRMRD-3.RPT
ORIGINAL: ENGLISH

AUC – SEAMIC COLLABORATION REPORT

Background

1. The 3rd African Union Conference of Ministers Responsible for Mineral Resources Development, held in Maputo, Mozambique from 13 to 17 December 2013; discussed many issues related to minerals resources development on the continent and made the following recommendations, among others:
 - a) AUC should work with the RECs, where necessary, to establish a team under the AMDC to advise and build capacities for governments on contract negotiations, taxation, Geological Mapping and creation of Data centres among other issues.
 - b) AUC should establish a Continental forum for sharing best practices and experiences on mineral resource development and management taking into account success stories and champions
 - c) AUC should develop a clear roadmap and timelines of AMV implementation to ensure proper monitoring and evaluation for the success of the vision in achieving its intended objectives.
 - d) Member states and RECs should consider developing strategies for multi stakeholder engagement, cooperation and coordination in the implementation of the AMV.
2. Furthermore, the Maputo Declaration, *inter alia*,: urged the AUC to develop a financing mechanism to enable Member States to make financial contributions through various means in order to ensure its ownership and sustainability and requested the AU Commission, in collaboration with RECs, NPCA, UNECA, UNDP, AfDB, and all African stakeholders to assist AU Member States to swiftly implement the Action Plan of the AMV.
3. In this regard, AUC received a Letter from Hon. Najib Balala – Cabinet Secretary for Mining, Republic of Kenya and Chairman of the Governing Council of Southern and Eastern African Mineral Centre (SEAMIC) to H.E Mrs. Fatima Haram Acyl regarding the establishment of working relations between the AUC – AMDC and SEAMIC. This was followed by a meeting between the AUC Chairperson H.E Nkosazana Dlamini Zuma and Hon. Hajib Balala, during which the need for collaboration between AUC and SEAMIC structured under the AUC Department for Trade and Industry for the implementation of the Africa Mining Vision was

discussed. It was also agreed that SEAMIC will be part of the Continental Task Force for the development of the Continental Commodity Strategy.

4. In order to implement the above decisions and recommendations, AUC conducted a mission to SEAMIC on 7 – 8 May 2014. The objective of that Mission was to explore how to establish a working relation between AUC-and SEAMIC, particularly in the implementation of the African Mining Vision and also to strategize how to develop a Continental Commodities Strategy among others.
5. During the Mission, SEAMIC gave a presentation on its services and how these services can be utilized in the implementation of the Africa Mining Vision. The AUC also toured all the laboratories and available facilities that provide services to Member States as well as the private sector.

SEAMIC Services in Brief

6. The Southern and Eastern African Mineral Centre (SEAMIC) was established in 1977 and started its operations at the Geological Survey of Tanzania in Dodoma. Since 1991 it moved to Dar es Salaam after setting up the laboratory facilities built on a 3 acre land provided by the Government of Tanzania. The construction of the buildings for the laboratories was financed by the SEAMIC member states.
7. The services of SEAMIC aimed at strengthening the member states capacity through training and advisory services in all specialties of SEAMIC's activities as well as complementing the activities of the national geological survey organisations of the both SEAMIC Member States and Non-Member States by availing the analytical services with ultramodern facilities it established at SEAMIC.
8. Initially most of the laboratory facilities were acquired through development projects funded by donors including: UNDP, UNIDO, the Government of Japan, the Government of Germany and the European Union. When the lives of some of the equipment lapsed their useful time and incurred frequent breakdowns, the Centre had to use its own meagre financial resources to replace the most essential laboratory equipment. The equipment procured from SEAMIC's own resources are

the GBC Atomic Absorption Spectrophotometer with Graphite furnace and S8-Tiger X-Ray Fluorescence Spectrometer with a cost of more than US\$ 200,000.

9. The human resources of SEAMIC is composed of professional and support staff and the total number of employees is 34. The Director General is the Chief Executive of the Centre. Under the Director General are managers of the technical services and administration, who are qualified professionals in their area of expertise at tertiary level of educational qualification. The middle level graduate professionals are also available in some of the technical services. Senior and junior technicians with required skills of the services are performing the routine work under the supervision of the managers and middle level professionals.
10. SEAMIC financial resources come from the annual contribution of its member countries supplemented by income generated from its services provided to the private sector and nonmember countries. The income generated from the services covers 30 to 40 % of its annual operational budget. The budget allocated for the financial year 2014/15 is about \$700,000 which is covering the operational activities of the Centre at its current capacity. Financial resources required for expansion of activities, additional activities and upgrading of the facilities can be done through donor funded projects and other extra-budgetary resources. Accumulated budget surplus is used for highly essential capital budget requirements.

1. SERVICES OF THE CENTRE

1.1 CHEMICAL AND ENVIRONMENTAL SERVICES

11. The Chemical and Environmental laboratory has a principal task of carrying out chemical analysis of geological materials (rocks, minerals, soil, sediment and concentrate) in order to demarcate geological fields of economic mineral potential. It has also the capacity of supporting environmental monitoring programmes of the mining activities in the Member States by analysis of water, wastewater samples and soils of environmental concern. SEAMIC has abundant previous experiences on analysis of water, fish, sediments etc. for mercury, heavy metals, and other water quality parameters for some of the big mining companies, Environmental

Management Projects in Lake Victoria, Lake Tanganyika, Universities, and Ground water studies (JICA) etc.

The following table describes the capabilities available for water and environmental samples analysis

Equipment and Accessories	Capability
ULTIMA 2 - ICP-OES Spectrometer	User determined sample position auto sampler up to more than 160 positions Capable of analysing rapidly and sequentially all the heavy metals and other elements in most cases with a detection down to 10 ppb or less for water, sediments, soil, foods etc.
AA Spectrometer A 906 and GBC Savanta Flame AA, Flame Emission, AA-HG, AA-Cold Vapour (VGA), AA-GF	Capable of analysing 68 elements in the periodic table including all the heavy metals down to 0.01ppm in flame mode and at ppb levels when using the Furnace or the VGA for water, sediments, soil, foods etc.

Gold and other Precious Metals

12. The laboratory has a well maintained fire-assay unit with all basic facilities and qualified personnel for assay of gold ores, gold tailings, gold concentrates, gold bullions, gold alloys, silver and platinum group elements (PGEs) and more others.

1.2 MINERAL PROCESSING AND SMALL-SCALE MINING SERVICES

13. The core activities of the mineral processing and small scale mining service are provision of technical assistances to SEAMIC Member States, the private mining companies and Small Scale Mining entrepreneurs, the academia...etc provision of human resources capacity building services. Technological investigations and consultancy work is done for income generation to supplement funding from member states. Applied research and developments in collaboration with other institutions or consumers is conducted subject to availability of funds.

14. The main activities carried out by the section are:

- Technological services

- Preparation of samples of geological materials for testing and analysis
- Conducting technological investigations on ore samples with the aim of establishing a mineral process design for entrepreneurs especially small scale mining entrepreneurs,
- Conducting applied research and development on various areas of interest which include solving of specific problems in mineral processing installations
- Human resources capacity building
 - Conducting short training courses on various mineral processing techniques for small mine operators and other interested persons or institutions
- Consultancy
 - Consultancy service is carried out on request by SEAMIC member countries, the private mineral sector and other interested persons. Over the past five years consultancy services have been provided by the section on sampling of mineral resources for improvement of mineral recovery in small scale mining activities and human resources capacity building.

1.3 MINERALOGY PETROLOGY AND GEMMOLOGY SERVICES

15. The Mineralogical, Petrological and Gemmological Laboratory of SEAMIC serves the mining community in the analysis and fundamental characterization of minerals, rocks and gem stones. The gemstone mining activities have expanded in the region involving a substantial sector of the mining community especially at small scale and artisanal level. Realizing the need for value addition to the precious stones to benefit the miners as well as others in the chain of the activities, several African countries restricted the exportation of the rough or raw stones and are encouraging value addition facilities to be established in the countries. In order to support these initiatives a gem stone cutting facility is available at SEAMIC providing capacity building services for value addition on gem stones by faceting and polishing which substantially increase the values of the gem stones and benefit the community better than selling the primary product at a lower price. The main activities of the services of this section are run by outsourced professionals for now. The routine activities of the services in this section are carried out by a skilled technician in mineralogy petrology and Gemmology. The services in this laboratory include:

- Mineralogical and petrological sample preparation and analysis
- Mineralogical evaluation of industrial minerals, metallic minerals and clays

- Gemmology and gem cutting training for identification and value addition to gem and precious stones to mineral and gemstone miners, dealers and other interested parties.

1.4 INDUSTRIAL MINERALS APPLICATION SERVICES

16. Research, development and promotion of the utilization of locally obtainable industrial mineral raw materials in SEAMIC Member States is the main task of these services. The research and development work on industrial minerals is performed with integrated professional network of all the relevant services. The routine on the developed research outcome are done with trained technicians. Currently five technicians of different skills work on the ceramic production. The research and development studies include the following aspects:

- Increase awareness of the user industries to change from traditional raw material suppliers to new, locally obtainable value added products.
- Development of appropriate equipment for undertaking a full-fledged research and development of utilization of industrial minerals and beneficiation and processing of these raw materials.
- Evaluation of the industrial mineral consumer market through a survey of the current status of the types of mineral based industrial minerals and consumption which will also need to be done in order to have information for prioritization of the implementation tasks.

1.5 GEO-INFORMATION SERVICES

17. The Geo-information Department is run by an exploration geophysicist cum GIS Expert and an IT/ GIS professional. Training on geophysics, geochemistry, environmental geology, GIS, remote sensing and geo-science data management are the core activities of the department. The training programs carried out by the department include: processing, analysis and integration of georesources data for mineral exploration, geological mapping, environmental management, land use management and other related purposes. The training utilizes modern commercial and open source software packages for GIS, remote sensing, geophysical and geochemical data processing, such as: Arc GIS, ERDAS IMAGINE, GEOSOFT, MapInfo, ILWIS, QGIS and other major geospatial software packages. Training on

resource estimation using software package SURPAC is also provided at the Geo-information Services Department.

18. The Department also provides support in dissemination of available Georesources information to the public for the promotion of the mineral resources potential continent through internet and published materials.
19. The Geo-information Department has got an international standard radiometric survey calibration pads for the purpose of calibrating gamma-ray spectrometers when running airborne or ground radiometric surveys. Such calibration facilities are available in few countries such as South Africa and Namibia.

2. CAPACITY BUILDING

20. Africa's main problem to run its own activities being lack of skills and capacity, SEAMIC made it its main mandate to support its Member States in providing capacity building services in all areas of its activities be it laboratory or geo-information. There are several scheduled and customised training programmes provided by SEAMIC's own professionals, outsourced experts as well as jointly organised with international and regional partners such as universities, and other expert institutions like geological surveys from Europe. The collaboration with regional and international partners is also used for research and development activities carried out by the Centre. The capacity building services to the Member States is not limited at the SEAMIC training facilities only. The Centre provides outreach training services by sending the required experts to the member countries when the Member States face budgetary restrictions to send more number of trainees to the Dar es Salaam training venue.

3. REGIONAL INITIATIVES

21. One of SEAMIC's main objectives is the promotion of regional integration and harmonisation of policies and governance of the region in the mineral resources development. The Centre spearheaded several regional initiatives to support the mineral sector development.

22. The GEOscience Data compilation for Eastern and Southern Africa (GEODESA) project supported 13 countries in Eastern and Southern Africa in cataloguing, standardising and archiving of geoscience information in the individual countries for easier access of the information to the public for better utilisation of the acquired data for mineral resources development. This project included pilot studies on cross-border geoscience data harmonisation for better understanding of the information and exchange of skills and know-how among the neighbouring countries.
23. The GIS-Africa Project is another undertaking that brought together the SEAMIC member countries geological professionals to establish a common geological nomenclature and legend to create seamless geological information across political boundaries for mineral and hydrogeological data.
24. The African and European Georesources Observation System (AEGOS) project further expanded the harmonisation of geological and mineral information to include energy resources like geothermal information through the establishment of Spatial Data Infrastructure capacity building and training strategy for all African countries for easier and better accessibility of Georesources information.
25. The Intergovernmental Conference for Great Lakes Region (ICGLR) Inter-Ministerial Committee selected SEAMIC to host the Analytical Fingerprint (AFP) laboratory facilities which was endorsed by the Heads of States of the ICGLR member states in 2011. The AFP laboratory to be setup at the Centre by the BGR of Germany which is fully financed by the Government of Germany is used to constrain the origin of “conflict minerals” (cassiterite, tantalite-columbite (coltan) and wolframite). The function of the laboratory is to produce analytical data for the AFP Management Unit located at the (ICGLR) headquarters in Bujumbura, Burundi. For this purpose a Memorandum of Understanding was signed between SEAMIC, BGR and ICGLR in April 2014 to facilitate the implementation of the project.

Financing

26. SEAMIC is financed by the membership subscription from Member States that are members of SEAMIC as well as from development partners with whom SEAMIC has been working in various fields as elaborated above. SEAMIC also provides services to the public as well as the private sector at cost. At present these services contribute up to 30% - 40% of SEAMIC operational Budget.

Recommendations

27. It is recommended that:

- a) a collaboration between AUC and SEAMIC be established for the implementation of the African Mining Vision through a memorandum of Understanding**
- b) Since SEAMIC is mandated to operate continent-wide since 2007, most of the Technical Work under AMDC be passed on to SEAMIC for implementation,**