



AFRICAN UNION
INTERAFRICAN BUREAU
FOR ANIMAL RESOURCES



Sweden
Sverige

POLICY NOTE

Strategy for Sustainable Mining Activities for
Conservation of Aquatic Biodiversity and Ecosystems in Africa



Prepared by: Prof. (Dr.) Adetola Jenyo-Oni

Edited by: Joel Mokenye, Mohamed Seisay, Alberta Sagoe and Eric Nadiope

Disclaimer: The views and opinions expressed in this article are those of the authors and do not necessarily reflect the official Policy or position of the African Union – Inter African Bureau for Animal Resources.

Citation: AU-IBAR, 2023. Policy Brief – Strategy for Sustainable Mining Activities for Conservation of Aquatic Biodiversity and Ecosystems in Africa.

All rights reserved. Reproduction and Dissemination of material in this information product for educational or other non-commercial purposes are authorized without any prior written permission from the copyright holders provided the source is fully acknowledged. Reproduction of material in this information product for resale or other commercial purposes is prohibited without written permission of the copyright holders.

Requests for such permission should be addressed to:

The Director
African Union – Inter African Bureau for Animal Resources (AU-IBAR)
Kenindia Business Park
Museum Hill, Westlands Road
P.O. Box 30786
00100, Nairobi, KENYA
Or by e-mail to: ibar.office@au-ibar.org

Published by AU-IBAR, Nairobi, Kenya

Copyright: © 2023 African Union – Inter African Bureau for Animal Resources (AU-IBAR)

Key words: Mining activities, Aquatic Biodiversity Conservation, Policies, Sustainable strategies



Table of Contents

Acknowledgements	iv
Context	I
A Strategy for Mining, Oil and Gas Activities in the African Continent	I
Impacts of Mining Activities on Aquatic Biodiversity and Environment	2
Constraints to the Mining Activities and Conservation of Aquatic Biodiversity and Environmental Management	3
Mitigation Strategy – Towards Sustainable Mining Activities for Conservation of Aquatic Biodiversity and Environment Management	3
The Goal of the strategy:	4
The specific objective of the strategy	4
<i>Area of intervention:</i>	4
<i>Outputs of the strategy:</i>	4
<i>The intermediate outcomes of the strategy:</i>	4
<i>The expected long-term outcome of the strategy:</i>	5
<i>Impact of the strategy:</i>	5
<i>Priority actions of the strategy:</i>	5
Institutional framework for implementation of the Strategy	5
<i>The functions of the Regional Coordination Unit of the strategy will be as follows:</i>	6
Conclusion and Recommendations	6
References:	7



Acknowledgements

The Director of AU-IBAR wishes to acknowledge the University of Ibadan Nigeria, in particular, Prof Adetola Jenyo-Oni, Professor of Coastal Wetlands Biodiversity and Fisheries Ecology. Prof. Jenyo-Oni conducted the studies and prepared the report on sustainable mining activities for conservation of aquatic biodiversity and ecosystems. The Director, AU-IBAR, extends appreciation to all stakeholders and Partners; The Regional Economic Communities (RECs), other specialized Regional Institutions, AU Member States, Experts and Non-State-Actors who contributed immensely to improving the quality of the report. This work was carried out with financial support from the Swedish International Development Cooperation Agency (SIDA). The editorial work was carried out by AU-BAR Technical Team.



Context

Natural resources serve as a strong economic base for sustainable development in many African Countries. The exploration of crude oil in several African Countries has brought foreign exchange earnings which in turn improve living conditions of the population.

Exploration of oil, gas and mining is very much connected to the natural environment. This results in pollution from all types of human activities, including offshore oil and gas production and marine oil transportation. Besides altering the marine environment, pollution also causes economic losses. Coastal and marine pollution come from a wide variety of sources, including non-point sources (e.g., agriculture, stormwater runoff) to point sources (e.g., wastewater, solid waste, fishing gear). Preventing pollution or waste from entering the oceans, therefore, requires a systemic approach that considers both land-based and Ocean-based sources.

A Strategy for Mining, Oil and Gas Activities in the African Continent

Deep-Seabed and Seawater mining are the new frontiers with huge potential. The value of top Sea-bed mining minerals such as diamond, gold, cobalt, zinc and copper in Africa could reach a value-added of about USD 6 billion. On the other hand, if African countries exploit about 2% of the market value from Seawater mining or 10% of Global production from Seawater potential, it is worth about USD 50 billion of value added. This gives a combined value added of about USD 56 billion. It could reach about USD 76 by 2030 and USD 123 by 2063. In 2018, the total GDP contribution of oil and gas in the major producing Countries such as Angola, and Democratic Republic of Congo (DRC). Republic of Côte d'Ivoire, Equatorial Guinea, Ghana, Mozambique, Nigeria and South Africa is about USD 80 billion. By 2030 and 2063, the value-added could reach about USD 100 billion and USD 140 billion, respectively. Mining is the single largest industrial activity in Africa, contributing significantly to fiscal revenues and Gross Domestic Product (GDP). Moreover, it has the



potential for large local impacts that can foster change in local economies. As the demand for minerals is Globally increasing, deep-Seabed and seawater mining is becoming an attractive frontier to meet the demand, which could substantially contribute to National economic development. Regional Strategies are thus needed to enhance the sustainable development of the mining sector in Africa's Blue Economy in various regions.

Impacts of Mining Activities on Aquatic Biodiversity and Environment

While impacts of mining, oil and gas exploration have been correlated to pollution effects on communities; dangerous emissions that fuel climate change; Oil and gas development that damage wetlands ecosystems; Fossil fuel extraction that affects visitors; Drilling that disrupts wildlife habitat and biodiversity; Oil spills, gas leakage and discharge of chemicals that affect animals and biodiversity; and, Light pollution which impacts on wildlife and wetlands.

Crude oil exploration and processing for

instance have led to severe environmental hazards in Africa, mostly from the discharge of waste, drilling fluids, atmospheric emissions, oily drill cuttings, oil spills, gas flares, well treatment fluids, and deck drainage, among others. (Beyer, *et al.* 2020; Vargas, *et al.* 2020). Noise, atmospheric, and marine pollution arise from onshore and offshore operations of oil rigs, distillation plants, tank farms, and vehicular emissions; which deteriorate water and air quality (Pathak and Mandalia, 2012; Jiang *et al.*, 2020). Introduction of trace elements such as arsenic, cadmium, mercury and lead into surface waters from deep aquifers also occurs. Many of these occurrences are toxic to aquatic animals, as well as humans (Ore and Adeola, 2021). Biodiversity plays a positive role in maintaining the ecosystem services which support a growing human population (Worm *et al.* 2006).

However, the cost of natural resources management in Africa is high due to inadequate technical capability and institutional inability, lack of infrastructure, poor education, over-dependence on foreign experts and managerial incompetence. Corruption has also disproportionately affected and hampered the



economic growth and development of most African Countries (Kalu and Ott, 2019).

Constraints to the Mining Activities and Conservation of Aquatic Biodiversity and Environmental Management

- a. Insufficient knowledge and information on the values (costs and benefits) and distribution pattern of environmental and ecosystem services
 - knowledge gap on the conservation approaches (e.g. National Policies, certification schemes, industry performance standards) in achieving desired outcomes in mining activities, environmental management and biodiversity conservation.
 - Lack of technical knowledge and database to effectively measure losses and gains owing to mining and biodiversity offsets.
- b. Lack coherent of policy for a fair and equitable system for sharing the benefits and costs among those who contribute to the realisation of environmental and ecosystem services

- Inadequate regionally coordinated template for evaluation of comparative return on investment of using natural capital for development options, including mining activities.
 - Weak governance system in terms of environmental regulations and environmental capabilities.
- c. Inadequate baseline data needed to drive Policy and Regulatory mechanisms such as; Environmental Management Plan (EMP); Environmental Impact Assessment (EIA) and Strategic Environmental Assessment (SEA)
 - Poor funding mechanism and regionally coordinated action plan to fill research gaps that could provide clarity on the coexistence between mining and conservation.

Mitigation Strategy – Towards Sustainable Mining Activities for Conservation of Aquatic Biodiversity and Environment Management

To eliminate the impacts and constraints related to mining (Oil, Gas and Mineral exploration) activities in Africa, an Integrated



Regional Strategy for Sustainable Management (IRSS) of mining activities in Africa is proposed.

The Goal of the strategy:

To promote sustainable mining activities (Oil, Gas and Minerals) to ensure environmentally sustainable and climate resilient economies and empowered communities, especially women and youths, through the conservation of aquatic biodiversity and ecosystems within the African Blue Economy Strategy (ABES).

The specific objective of the strategy

- To develop an Integrated and Sustainable regional strategy for mining (oil, gas and mineral exploration) activities in Africa for aquatic biodiversity conservation.

Area of intervention:

Enhancing sustainable coastal mining (oil & gas), minerals and metals for conservation of aquatic biodiversity and environmental management.

Outputs of the strategy:

- a. AU member states and regional institutions initiate or embark upon formulation of respective and regional strategies for sustainable mining activities to minimize impact on aquatic biodiversity and ecosystems
- b. Capacity for the integrated and Sustainable mining (oil, gas and mineral exploration) activities, for aquatic biodiversity conservation enhanced;
- c. Mechanism for enhancing the participation and equity in distribution of social benefits of coastal mining, minerals and metals activities for the benefit of local communities especially youths and women developed;
- d. Financial, and technical template for development of Countries level frameworks for the sustainable mining and processing of minerals developed.

The intermediate outcomes of the strategy:

- a. Quality of mining activities planning and management improved;
- b. Complementarities and synergies between and among investors and development



- partner's support to mining activities enhanced;
- c. Environmental, economic, health and social impacts and benefits of coastal mining, minerals and metals to sustainable biodiversity development enhanced

The expected long-term outcome of the strategy:

- a. Rational and sustainable management of mining activities in the continent.

Impact of the strategy:

- a. Accelerated Growth and Transformation of mining activities for shared prosperity and improved livelihoods in Africa,
- b. Development of competitive and sustainable integrated coastal mining industries in Africa that maximises its contribution to the Continent's economic growth.

Priority actions of the strategy:

- a. Build capacity for environmentally sustainable and climate resilient economies and empowered communities in the mining sector.
- b. Provision of resilient Infrastructure, Blue

Carbon & other Ecosystem Services

- c. Enhance Public-Private Sector Partnerships in mining sector planning and management
- d. Strengthen local capacity for the development of Integrated and Sustainable mining sector in the continent
- e. Develop Mechanisms for sustainable mining sector development

Institutional framework for implementation of the Strategy

For the implementation of the strategy, an organizational structure will include a Regional Steering Committee, a Regional Coordination Unit and National Focal Points. The Regional Steering Committee will be the guiding and monitoring body for the strategy. It will ensure the proper implementation of actions in accordance with the objectives set and on the basis of progress reports on projects and programmes focusing on mining activities versus biodiversity conservation and environmental management.

It will approve the work programmes and the corresponding provisional budgets. The composition shall be agreed upon at the



stakeholder validation meeting. The Steering Committee will meet once a year to review progress reports and approve the following year's planned activities. The secretariat of the Steering Committee will be provided by appropriate Regional Economic Community.

The functions of the Regional Coordination Unit of the strategy will be as follows:

- To coordinate the various interventions within the framework of the implementation of the strategy;
- Develop operational action plans with relevant partners;
- To ensure relations with partner implementing institutions and to ensure the complementarity of the various interventions;
- Ensure the preparation of reports for the steering committee and its meetings;
- To ensure the preparation and smooth running of the evaluations (mid-term and end of project, impact), and;
- Regularly monitor projects and programmes and inform the indicators of the strategy.

Accordingly, the main task of the National Focal Points will be to assist the Regional Coordination Unit in aligning national initiatives with the regional strategy. They will be designated by the Ministries in charge of mining.

Conclusion and Recommendations

This policy brief constitutes a knowledge product to guide AU member states and regional economic communities for evidence-based development of national and regional mining regulatory instruments that would promote socio-economic opportunities in mining industry and pay attention to conservation of aquatic biodiversity and the environment.

The policy brief has also proposed regional mechanism to ensure coordination and coherence in mining development that would benefits not only the private sector but the communities or citizens in the respective regions. On this note it is recommended that the regional economic communities should develop regional strategies, guided by this



policy brief and the continental framework (the consultancy report). These regional strategies should then cascade to AU member states for development of respective national strategies for sustainable mining with due regards to aquatic biodiversity and the environment.

A sensitization campaign should also be launched among various categories of stakeholders on the threat and impact of oil, gas and mineral explorations on aquatic biodiversity and environment.

Main report: <https://www>.

References:

1. **Beyer, J., Goksøyr, A., Hjermann, D. Ø., Klungsøyr, J. (2020).** Environmental effects of offshore produced water discharges: a review focused on the Norwegian continental shelf. *Mar Environ Res* 162:1-20.
2. **Jiang, D., Chen, L., Xia, N., Norgbey, E., Koomson, D.A and Darkwah, W.A. (2020).** Elevated atmospheric CO₂ impact on carbon and nitrogen transformations and microbial community in replicated wetland. *Ecological Processes*, 9:57, 2020.
3. **Kalu, K., Ott, K., (2019).** Ethical issues in environmental pollution: multinational corporations (MNCs) and oil industries in tropical regions—the Nigerian Niger-Delta case. In: Chemhuru M. (eds) *African environmental ethics. The international library of environmental, agricultural and food ethics*, Springer, Cham. Pp 271-287.
4. **Ore, O.T and Adeola, A. O. (2021),** Toxic metals in oil sands: review of human health implications, environmental impact and potential remediation using membrane-based approach. *Energy Ecol Environ* 6:81–91.
5. **Pathak, C. and Mandalia, H. C. (2012).** Petroleum industries: environmental pollution effects, management and treatment methods. *Int J Sep Environ Sci* 1(1):55-62
6. **Vargas, G. C., Au, W.W, and Izzotti A (2020).** Public health issues from crude-oil production in the Ecuadorian Amazon territories. *Sci Total Environ* 719:134647
7. **Worm, B., Barbier, E. B., Beaumont, N., Duffy, J. E., Folke, C., Halpern, B. S., Jackson, J. B. C., Lotze, H. K., Micheli, F., Palumbi, S.R., Sala, E., Selkoe, K.E., Stachowiz, J. J. and Watson, R. (2006).** Impacts of Biodiversity Loss on Ocean Ecosystem Services. *SCIENCE* 314 (5800): 787-790



African Union
Inter-African Bureau for Animal Resources (AU-IBAR)
Kenindia Business Park
Museum Hill, Westlands Road
P.O. Box 30786
00100, Nairobi, KENYA
Telephone: +254 (20) 3674 000 / 201
Fax: +254 (20) 3674 341 / 342
Website: www.au.ibar.org
Email address: ibar.office@au-ibar.org