

**ENVIRONMENTAL IMPACT ASSESSEMENT (EIA) FOR THE
PROPOSED GOLD (Au) EXPLORATION AND MINING PROJECT AT
RANDEGI DISTRICT, BIRNIN GWARI L.G.A OF KADUNA STATE
BY**

SANDCRETE ENGINEERING NIG. LTD

Background Information Document (BID)

This Background Information Document (BID) provides information to assist stakeholders to participate in the Environment Impact Assessment (EIA) and environmental authorization process for the proposed *Gold Mining Project At Randegi District, Birnin Gwari L.G.A of Kaduna State* by **Sandcrete Engineering Nig. Ltd (Sandcrete)**

What is the EIA About?

Basically, the EIA is the process of identifying, predicting, evaluating and mitigating the bio physical, social and other relevant effects of **Sandcrete** proposed project prior to major decisions being taken and commitments made.

The general objective of this EIA is to assess the potential environmental and social impacts associated with the planning, construction, operation and decommissioning phases of the proposed Project. Sandcrete has not yet commenced mining, and are currently carrying out exploration activities to assess the financial feasibility of the proposed mine. Exploration entails field investigations involving drilling, sampling, mapping of the target mineral resource, pilot testing, process development and ancillary investigations to determine the overall economic feasibility of the proposed Project.

In compliance with Nigeria regulatory bodies statutory provisions and in accordance with the EIA Act 86 of 1992, *the project-proponent* has commissioned Richflood International Limited, being a Nigerian based environmental consultant, to conduct an Environmental Impact Assessment (EIA) for the proposed Gold Exploration and Mining Project (The Project)

Background

Sandcrete Engineering Nig. Ltd is a wholly Nigerian company with offices across West Africa and the U.S. The company general interest is solid minerals exploration and mining. The company currently specializes in the exploration and production of high quality quarry materials (granite slabs & chippings) and precious stones (gold and gemstones) for the Nigerian, African and international markets.



Sandcrete currently operates three (3) quarry sites in the southwestern part of Nigeria, and three additional gold and gemstones mines in northern Nigeria. The company is licensed “Mineral Buying Centre” in Nigeria.

Sandcrete currently holds an Exploration License EL 022424. Number of units 323 CU 22424EL equivalent to an area of 46.4 km² bearing the gold mineralized zone.

Project Location

Birnin Gwari is a Local Government Area in Kaduna State, Nigeria. Its headquarters are in the town of Birnin Gwari. It has an area of 6,185 km² and a population of 252,363 at the 2006 census.

Project Area of Influence (PAI) in Birnin Gwari L.G.A of Kaduna state is as shown on Table 1 below.



Fig. 1: Location of Kaduna State in Nigeria

The state is located at the Northern part of Nigeria's High Plains. The vegetation cover is Sudan Savannah type, characterized by scattered short trees, shrubs and grasses.

Table 1: Project Area of Influence (PAI)/Host Communities

S/No	Village/Settlement/community
1	Kungi
2	Angwa Bulla
3	Mangorori
4	Galadima
5	Angwa Talafe
6	Angwa Tanimu
7	Magaji gari village
8	Kuki
9	Biringu
10	Bunachi

Source: Field Survey, 2016



Plate 1: Photographs showing the Mineralised Area (proposed gold field)

Objectives of the EIA

The objectives of the EIA for the project site are to:

- Provide information and evidence required for developing an Environmental Impact Statement for the project site;
- Establish baseline information for the project site.
- Identify associated/potential impacts of the project in the area;
- Recommend preventive, mitigative and control measures for the identified potential/associated adverse impacts of the project; and

- Develop an effective Environmental Management Plan (EMP) for the lifetime of the project.



Fig 2: Adopted EIA approach and stages

Project Overview

The First phase development of Sandcrete Engineering Gold field in Binin-Gwari area of Kaduna is mainly by Alluvial (Placer) mining (Sandcrete 2015). This may be done by open-pit (also called open-cast mining) or by various surface excavating equipment or tunneling equipment. This process uses the density of gold and the force of gravity to separate gold particles from other sedimentary deposits.



alluvial/placer gold mining flow-chart



PROJECT PHASES

Phase 1: Exploration Phase

It included core drilling, sampling and pilot testing of wells for potash deposits as well as other specialized studies, such as hydrogeological studies, in order to determine the feasibility of the proposed project. The mineral resource estimate derived is a major component in the evaluation of the overall economic feasibility of the proposed Project. The results of exploration drilling activities revealed the extensive source of the ore. As a result, the proposed Project have moved from exploration to pre-feasibility and feasibility phases.

Phase 2: Definitive Feasibility Study

In parallel to exploration activities, **Sandcrete** commissioned engineering works and planning (including the engineering scoping study and definitive feasibility study) and the EIA. These activities are currently underway and are being undertaken to determine how much it will cost to implement the proposed Project,

including the costs of implementation of social and environmental mitigation measures determined by the EIA.

Phase 3: Bridge Engineering Phase

The preparation phase after the feasibility and before the start of construction is known as the bridge engineering phase. During this phase project activities on critical path and components are identified and actively managed to ensure that its implementation does not affect the overall project programme. The bridge engineering activities are anticipated to start in February 2017.

Phase 4: Pre-Construction Phase

Pre-construction activities consists of the finalization of engineering studies, bridge engineering activities, the receipt of a mining license, finalization of agreements with the Host Community, securing Project finance and the anticipated EIA approval from the Federal Ministry of Environment (FMEnv).

Phase 5: Construction

Pending environmental approval of the EIA from the FMEnv and finalization of pre-construction activities, commencement of construction activities is scheduled for March 2017 and has a planned duration of approximately 15 months. Construction includes the installation of all Project related infrastructure, including the camps where the workers will be housed.

Phase 6: Operation

Operation of the mine is scheduled for commencement upon final installation of Project infrastructure, scheduled for June 2017. The expected lifespan of the mine is approximately 30 years for the concession. Overall Mining activities will include the mining and processing of gold ore.

Phase 7: Decommissioning and Closure

The decommissioning and closure phase will start when the gold deposit is fully exploited from the licensed area. Decommissioning and closure involves the dismantling of mine infrastructure and the rehabilitation of disturbed land amongst a range of other activities. At this phase, the Environmental Protection and Rehabilitation Programme approved by the Federal Ministry of Solid Minerals will be implemented.

POTENTIAL AND ASSOCIATED IMPACT ASSESSMENT

Environmental Impact Indicators

The environmental impact indicators for the study are easily observable parameters that will indicate change/deviation, which can be used to monitor the various environmental components.

The primary *Biophysical Indicators* for the on-going impact assessment are the following:

- Climate and meteorology;
- Air quality;
- Noise levels;
- Groundwater;
- Geology and geomorphology;
- Soils and soil erosion;
- Drainage patterns and flooding;
- Unique physical features; and
- Vegetation including economic trees and crops.

The primary *Socio-Economic Indicators* for the on-going impact assessment are the following:

- Land use;
- Employment and income;
- Community population and ethnicity;
- Community relations; and
- Services (e.g water and electricity supply).

For the proposed project, the summary preliminary environmental issues and social benefits envisaged is listed below:

Gold mining affects the environment in many ways, including the release of large amounts of exhaust from heavy equipment and transport, toxic drainage into nearby waterways and the release of chemical fumes from ore processing. Generally, the environmental impact of mining includes erosion, formation of sinkholes, loss of biodiversity, and contamination of soil, groundwater and surface water by chemicals from mining processes.

Other impacts will include the following

1. Socio-Economic and Livelihood Impacts:

- Increased government revenue;
- Creation of employment opportunities and skills enhancement (A number of local businesses likely to secure contracts. Potential exists for creating income and building a more stable and diverse local economy);
- Social benefits for the host communities through on-going community development plans.
- Increased price inflation and economic vulnerability; and
- Community anger and resentment over unmet expectations.

2. Impacts Related to Project Induced In-Migration.

3. Changes to Socio-Cultural Heritage:

- Disturbance to cultural values, traditional leadership and intangible heritage.

4. Community Health, Safety and Security:

- Increased incidence of communicable diseases;
- Increased transmission of malaria; and
- Increased incidence of non-communicable diseases.

5. Impact on flora and fauna

- Destruction of habitat for plant species of special concern (SSC) within the farm development footprints.
- Destruction of habitat for faunal species of special concern (SSC).
- Loss of plant SSC due to vegetation clearing and disturbance
- Disruption of ecological corridors, patterns and processes
- Increased erosion risk and topsoil loss due to vegetation clearing and disturbances
- Loss of fauna species of special concern as a result of poaching, hunting and trapping.
- Loss of plant species of special concern (collection for ethno botanical use, firewood, etc.).

Call for Participation/Stakeholder

The stakeholder engagement process is designed to conform to the Nigerian EIA Decree and international standards, including the IFC Performance Standards. Key objectives for stakeholder engagement for this project are:

1. Share information about the Project;
2. Gather local knowledge to improve understanding of the environmental and social context and understand locally-important issues;
3. Enable stakeholders to raise concerns / questions about the Project;
4. Gather responses on the EIA findings and incorporate stakeholder views into the design and management measures;
5. Respond to concerns and questions and report back on the findings of the EIA and proposed management measures;
6. Lay foundation for future stakeholder engagement.

Anyone who is interested or affected by the proposed project has a right to participate in the EIA process, and is invited to further participate in the EIA Process. Please make use of the following opportunities to be involved in the stakeholder engagement process:

- Study the information made available in this Background Information Document;
- Contact the Stakeholder Engagement Team to obtain further project information, and/or raise issues and concerns (contact details provided below);
- Attend the Stakeholder meetings to obtain further project information, interact with the Project Team, and/or raise issues and concerns. More information about the meetings will be circulated through letters, community leaders, radio announcements and through the project website.

Contact Information

Richflood International Ltd
Comfort Asokoro-Ogaji
info@richflood.com

Sandcrete Engineering Nig. Ltd
Mr. Yomi Ajisola
yajisola@gmail.com;
info@sandcreteengineering.com