

EVALUATING NIGERIA'S MINING SECTOR
A VIEW FROM CHINA

Columbia University SIPA Capstone in cooperation with
Nigerian Solid Minerals Development Fund (SMDF)
May 2020

EXECUTIVE SUMMARY

Nigeria is endowed with untapped solid minerals reserves. In 2007, the Nigerian government created the Solid Minerals Development Fund (SMDF) to develop a competitive mining industry. The SMDF is charged with funding data gathering for the retrieval of minerals, extension services to artisanal and small-scale mining (ASM) operators, and mining infrastructure. The fund is furthermore tasked with attracting foreign direct investment (FDI) into the Nigerian mining sector.

A considerable share of investment in Nigeria has, since the early 2000s, originated from China, fueled by the Asian country's economic growth, trade liberalization and demand for mineral resources, which led to a rapid inflow of Chinese capital and an influx of Chinese citizens. Albeit focusing on the formalization of ASM as an obstacle to the sector's development, the previous 2019 Capstone team tangentially discovered that Nigeria's mining sector has not seen meaningful investments from Chinese investors.

Despite the important role Chinese investors have played across the African continent generally and in the mining sector particularly, the obstacles to institutional Chinese investment in Nigeria's solid minerals sector have not received academic scrutiny; an omission which this 2020 Capstone team chose to focus on in the hope of supporting the efficient deployment of the SMDF's capital as well as the fulfillment of the fund's statutory functions.

To that end, the 2020 Capstone team aims to support the SMDF by providing an in-depth qualitative analysis of Chinese business interests in Nigeria's mining sector. The project involves collecting and measuring empirical data against the fund's stated objectives, enshrined in the Ministry of Mines and Steel Development's Roadmap for the Growth & Development of the Nigerian Mining Industry (herein forward referred to as "Roadmap").

Despite the logistical challenges posed by the global Covid-19 coronavirus pandemic and corresponding travel restrictions, the team was able to conduct interviews remotely and marshal primary as well as secondary sources to yield a comprehensive set of findings regarding the limitations Chinese individuals and businesses face when navigating Nigeria's mining sector. Upholding a tradition of continuing commitment to the client, the Capstone team succeeded in bridging essential findings from previous reports with fundamental insights for future Capstone teams to bring into action.

EXECUTIVE SUMMARY

MAIN FINDINGS

With these challenges in mind, the 2020 team collated recommendations for the SMDF to consider as the present report was prepared to help the SMDF compare and contrast its current Roadmap with empirical realities. Interviews were conducted with Nigerian government officials, Chinese businesspeople, mining industry representatives as well as Nigerian and international investors to understand and evaluate the barriers preventing the development of Nigeria's mining sector. **The research returned 6 fundamental insights that go beyond the Roadmap's conclusions.**

- 1. The SMDF is not widely known.** Many industry participants are unaware of the fund and what it can do to facilitate meaningful investment into the Nigerian mining sector.
- 2. The regulatory environment is unnecessarily complex.** Inconsistent fee schedules and contradictory regulations place a burden on investors.
- 3. Stringent ownership requirements demand equity ownership of Nigerian stakeholders.** Joint ventures and other business partnerships create inefficiencies and additional administrative costs as well as contractual challenges.
- 4. Nigeria's mining industry is a high-risk industry with limited institutional oversight,** presenting investors with high financing costs. However, corruption does not appear to inhibit investments.
- 5. Technical and physical infrastructure is inadequate or missing altogether.** Unavailable geo-scientific data represents a large barrier for investors.
- 6. The absence of clear and enforceable ESG rules and regulations discourages industry participants from investing in Nigeria's mining sector.**



EXECUTIVE SUMMARY

MAIN RECOMMENDATIONS

Based on these findings, the report concludes with 5 recommendations that the fund can implement in the short and medium term:

Raise awareness of the SMDF and its functions. Few industry participants are aware of the fund and what it can do to facilitate investment in the Nigerian mining sector. A compelling marketing campaign could elevate the fund's public standing and anchor its place as a valuable institution in the Nigerian extractives sector.

Provide a proof-of-concept that investing in Nigeria's mining industry is a profitable and sustainable venture. A limited number of international investors have paved the way for others to follow. The SMDF is encouraged to prove to investors that Nigeria's economy is 'open for business' and to assist them in navigating the country's legal and fiscal framework.

Publish and explain Nigeria's ESG guidelines that industry participants can readily access and thus adhere to. In the absence of clear ESG protocols, investors frequently feel uneasy when entering an industry and often fail to secure funding from international sources

Revise Nigeria's local ownership requirements. The SMDF is encouraged to weigh the options of pushing for the easing of tight ownership regulations, establishing a state-owned mining company to undertake necessary investments or intermediating between international actors and potential Nigerian partners.

Put forward initial funding for investors to cover up-front costs, such as gathering geo-scientific data and other expenses in a mining project's exploration phase. As access to local funding for foreign investors is limited and international sources of funding require stringent proof of a mine's profitability as well as high collateral, the fund is advised to circumvent traditional funding mechanisms and offer direct and effective capital.

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MEET THE CLIENT



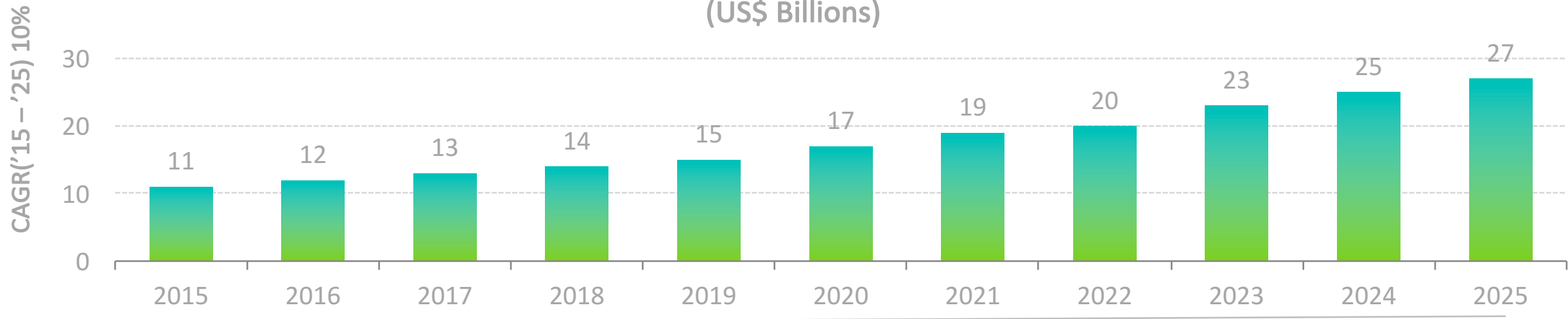
Solid Minerals Development Fund

- Capstone in cooperation with Nigerian Solid Minerals Development Fund (SMDF), under Ministry of Mines and Steel Development (MMSD)
- SMDF tasked with development of mining sector
- Current government objectives for sector enshrined in Roadmap for Growth and Development of Mining Industry (2016)
- 1st Capstone (spring 2019) concerned with formalization of small-scale artisanal mining geared towards attracting (foreign) investments

SUCCESSFUL IMPLEMENTATION

UNLOCKING SIGNIFICANT VALUE FOR NIGERIA

Estimate Mining Sectors' Contribution to GDP (2015 – 2025)
(US\$ Billions)



**National
GDP**

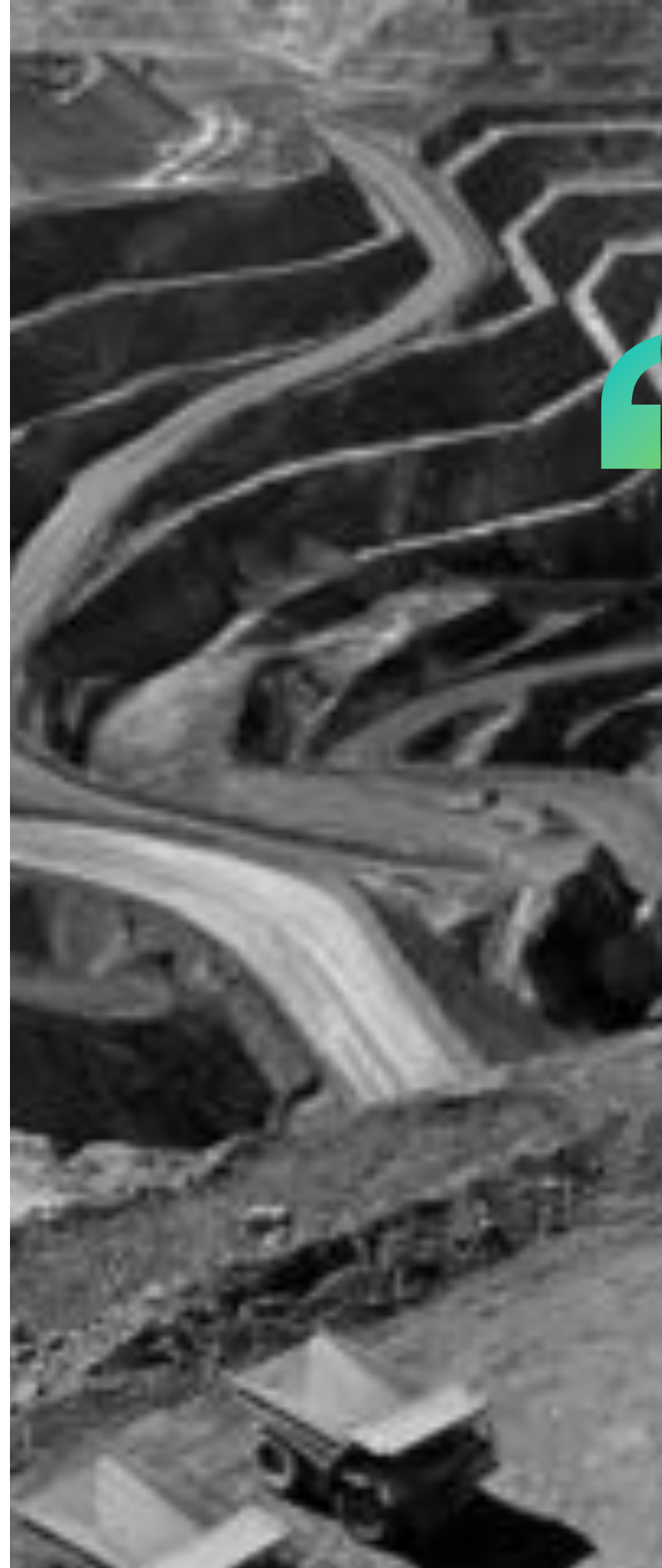
Assuming the projections are accurate, by 2025 mining will correspond to approximately 3% of national GDP

•Source: Ministry of Mines and Steel Development, Roadmap for the Growth & Development of the Nigerian Mining Industry, August 2016

POTENTIAL IMPACT

PROSPEROUS MINING SECTOR WITH POTENTIAL FOR FAR-REACHING, POSITIVE ECONOMIC, SOCIAL AND POLITICAL IMPACT

- Mining sector with potential to stabilize Nigeria's economy
 - Pre-existing oil economy exposed to fluctuations in global commodity prices and likely reductions in demand (due to energy transformation), as well as insufficiently prepared for post-depletion future
 - Minerals with important future role, around applications in renewables, batteries, computers, etc.
- Diversified industrial base to produce beneficial social and political effects
 - Socially, greater multitude of populations included in economic activity across different states and industries (directly or indirectly related to mining)
 - Politically, non-oil sources of revenue potentially alleviating power imbalances and allowing for more equitable distribution of wealth



A prosperous mining sector will be transformational for Nigeria -- economically, as well as socially and politically.

Ms. Shinkafi
Executive Secretary SMDF)

MEET THE TEAM

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STATUS QUO

SOARING CHINESE INVESTMENT ACROSS NIGERIAN INDUSTRIES, YET LIMITED IN MINING

17% Current Chinese Investment is in Nigeria

Nigeria currently receives most Chinese Investment in Africa
Almost twice the second place - Angola, which receives 8%

CAPSTONE 2020

BARRIERS PREVENTING INVESTMENTS IN NIGERIAN MINING SECTOR, A CASE STUDY OF CHINESE INVESTORS

- Status quo: Development of mining sector inhibited by obstacles around formalization, lagging international investment, and others
- Previous Capstone report identified the prominent role of predominantly Chinese middlemen, partially inhibiting formalization
- Capstone ambition: understanding Chinese presence in mining better, as well as leveraging Chinese presence in other sectors to unleash potential (of mining sector)



PROJECT

- Problem statement: What are the most important barriers—and related action items—preventing more significant investments in the Nigerian mining sector, using the Chinese perspective as a case study?
- Outcome: Help SMDF and Nigerian government prioritize resource allocation to address such barriers, thus directly and more effectively making the sector more attractive to investors



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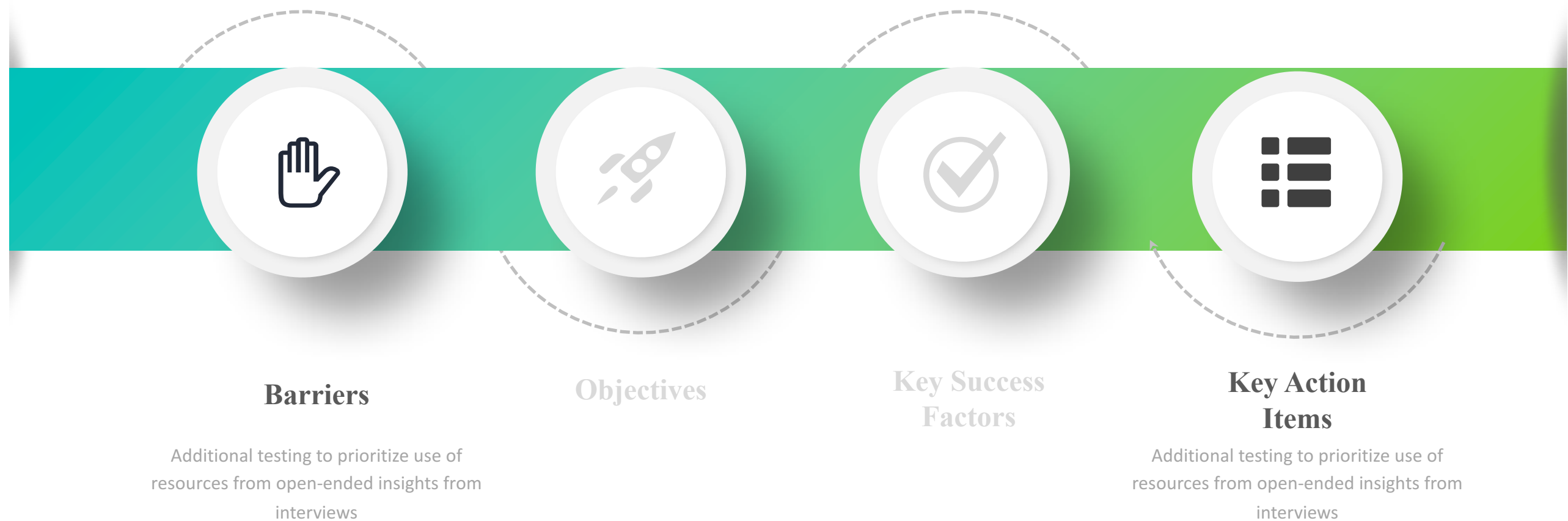
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THE MINISTERIAL ROADMAP

Capstone focused on testing barriers & key action items

- Capstone to test investor-relevant barriers as well as key action items as described in Roadmap in interviews with industry participants [focus areas (1 – barriers) and (2 – key action items) detailed on following pages]
- In addition, Capstone to evaluate barriers and key action items beyond framework of Roadmap, as brought up and described by interviewees, to facilitate prioritization of resources for SMDF and Nigerian government



BARRIERS AS DEFINED IN ROADMAP

- Roadmap identifies 5 types of barriers facing the metals and mining industry
- Capstone testing for industry participant perceptions of barriers, both regarding severity and substantive content of barriers
- In addition, Capstone testing for open-ended insights from industry participants regarding barriers, beyond Roadmap framework



GEOSCIENCES

Nigeria, despite recent progress, has weak mechanisms for gathering, disseminating and archiving critical geological data required by investors and policy-makers



INDUSTRY PARTICIPANTS

Operators across mining value chain face a range of challenges from insufficient infrastructure to policy uncertainty that together constrain investment confidence



STAKEHOLDERS

Decline of industry reduced the focus and leverage of key stakeholders, hence flows into the sector e.g. resources, talent and partnerships have declined



INSTITUTIONS & GOVERNANCE

Ministry's own organisational design needs to be refined to ensure clear enforcement of its own rules and separation of powers between the states and the federal government



KEY ENABLERS

Ancillary requirements for the proper functioning of the minerals and mining ecosystem such as talented labor, infrastructure e.g. railroad, competitive financing systems, mine and asset security, and related support services

KEY ACTION ITEMS AS DEFINED IN ROADMAP

Timeline of key action items for executing the roadmap

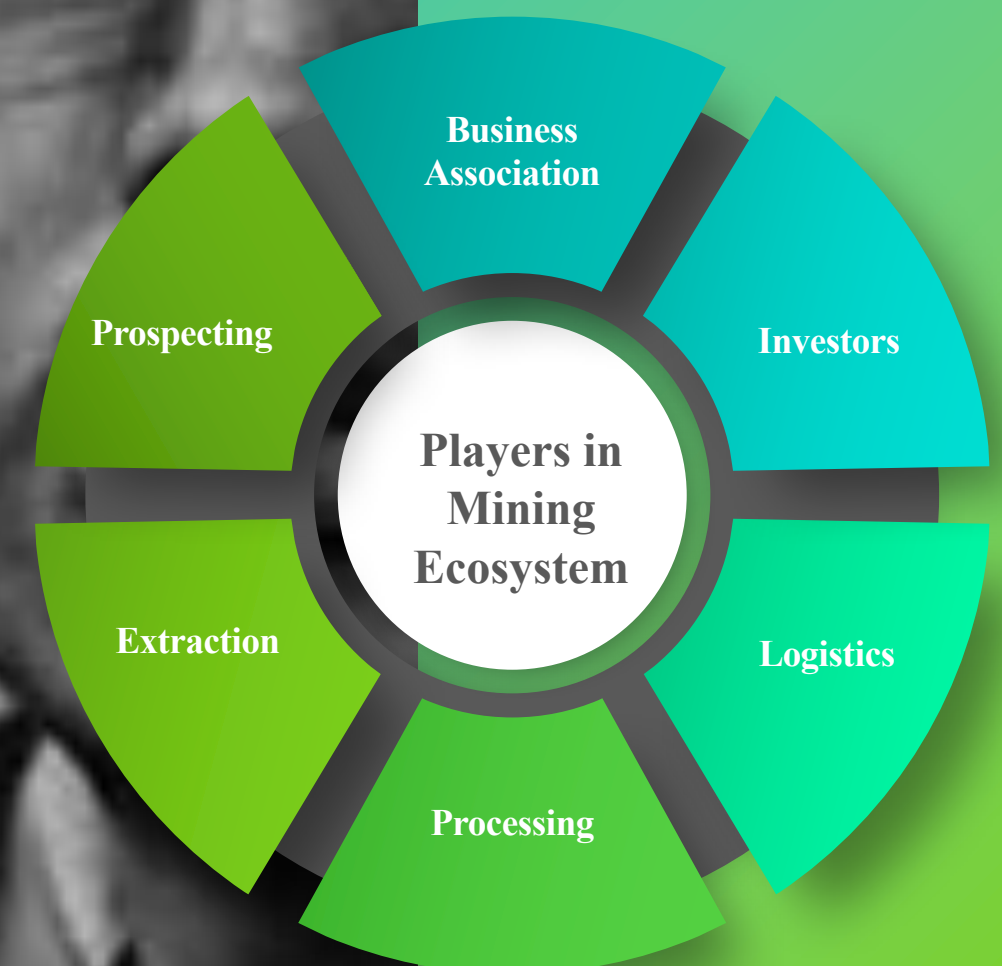


- Roadmap identifies key action items to be executed over subsequent 10 years (as well as ongoing)
- Focus of Capstone interviews: 8 investor-relevant key action items set to be completed or underway at present (6 months -5 years from Roadmap)
- 7 further investor-relevant key action items excluded from analysis, due to longer time horizon (5-10 years from Roadmap)
- Only certain key action items of Roadmap assumed to be directly relevant for investors
- In addition, Capstone testing for open-ended insights regarding key action items, beyond Roadmap framework

SAMPLE SELECTION

INTERVIEWS TARGET CHINESE INDUSTRY PARTICIPANTS IN VARIETY OF VALUE CHAIN SEGMENTS AS WELL AS FUNCTIONS

- Central Capstone interviews focused on Chinese stakeholders as well as Nigerian officials
- Chinese investors who are based in Nigeria for over a decade
- Major players in the mining industry
- In addition, consultative interviews completed with foreign experts (US, European, etc.)
- Outreach conducted via personal networks as well as LinkedIn and other platforms
- 50 interviews requested; 14 interviews carried out (response rate limited due to global pandemic)



ADOPTED INTERVIEW METHODOLOGY

- Interviews were conducted in Mandarin over telephone or online video platforms in early 2020
- Interviews lasted 30-180 minutes and covered the following information:
 - Industry participants' general impression of the industry and their self-identified barriers to conduct business
 - Industry participants' comments and reflection on short- and medium-term barriers as well as key action items identified in the Roadmap.
 - Potential sources of interview bias
- Limited responses have been received due to time limits and the spread of Covid-19
- Most of interviewees are both mining practitioners and investors

Excerpt of questionnaire: questions are designed to be open-ended:

- **Profile classification:** What kinds of mineral resources/projects does your company extract/process/trade/purchase/invest in? Where do you perceive the firm/project in the value chain? Why are you involved in multiple value chain segments (if any) or are you willing to integrate in multiple value chain segments?
- **Obstacle Test:** When you engage or plan to engage in mining projects in Nigeria, what are some obstacles you have encountered? If you want to engage in multiple value chain segments, what are your identified obstacles?
- **Key Action Item Test:** What key action items would you recommend? Would you perceive the key action items identified in the Roadmap as significant and implementable? Who are the key stakeholders/owners would you identify during the implementation? What further risks do you foresee regarding the implementation?
- **General insight and comments:** Considering your company's mission and values, what does an ideal mining sector look like?



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KEY INSIGHTS FROM INTERVIEWS

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Barriers

- Regulatory environment is inconsistent.
- Ownership requirements create inefficiencies and contractual challenges.
- Access to finance is available but investors are reluctant to borrow due to high interest rates. Investors feel frustrated and discouraged from the widespread corruption in the sector.
- Investors are frustrated and discouraged from the widespread corruption in the sector.
- Technical and physical infrastructure is inadequate or missing altogether.



Objectives



Key Success Factors



Key Action Items

- Provide a proof-of concept that investing in Nigeria's mining industry represents a profitable and sustainable venture.
- Use "low-hanging" fruit to show that Nigeria's economy is "open for business".
- Publish and explain Nigeria's ESG guidelines to industry participants.
- Revise Nigeria's local ownership requirements.
- Put forward initial funding for investors to cover up-front costs, in areas such as gathering geo-scientific data.

INSIGHTS ON BARRIERS

The barriers outlined in the Roadmap aptly reflect empirical realities on the ground and provide a realistic compilation of obstacles that industry participants face in Nigeria's mining sector.

However, throughout our conversations, there transpired a number of additional obstacles, such as strict ownership and by extension partnership requirements, which the SMDF would be well-advised to take into account for its future organizational trajectory and concomitant effect on the development of Nigeria's solid minerals sector.



GEOSCIENCES

Nigeria, despite recent progress, has weak mechanisms for gathering, disseminating and archiving critical geological data required by investors and policy makers



INDUSTRY PARTICIPANTS

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INSTITUTIONS & GOVERNANCE

Ministry's own organisational design needs to be refined to ensure clear enforcement of its own rules and separation of powers between the states and the Federal Government



KEY ENABLERS

Ancillary requirements for the proper functioning of the minerals and mining ecosystem such as talented labor, infrastructure e.g. railroad, competitive financing systems, mine and asset security, and related support services

INSIGHTS ON BARRIERS

GEOSCIENCES

Investors and industry participants seek visual and accurate data on mineral reserves and deposits. Developing an accessible mining-related geo-sciences database should be a priority.



GEOSCIENCES



There is no geographical data for the mineral resources in general. There is no valid report for the mining sites, if the government doesn't do the survey. It is costly and difficult for companies to do it themselves. Once it cost us 15 million dollars to survey one mining site. The data we have now are based on our experience and some reports by the British in the 1960s

Yang Yang, General Secretary, Chinese Business Capacity Association in Nigeria

[E]xploration activities based on the geological data from the 1960s are like gambling. [...] You may find one out of ten or twenty.

Tang Suqiang, General Manager, Ming Xin Mineral Separation LTD

INSIGHTS ON BARRIERS

INDUSTRY PARTICIPANTS

Additionally, investors struggle to navigate Nigeria's complex regulatory framework. Diverging rules on regional and federal levels that apply to different stages of the value chain confound otherwise potentially profitable business ventures.

A function of opaque regulatory norms, enforcement of the rules can be perceived as arbitrary, thus translating into a higher risk perception of participating in the Nigerian mining sector, further inhibiting investment.



**INDUSTRY
PARTICIPANTS**



The regulations constantly change. For example, governors may implement a complete taxation than his/her predecessors, which make investors like us difficult to adopt to.

**Tang Suqiang, General Manager,
Ming Xin Mineral Separation LTD**

INSIGHTS ON BARRIERS

STAKEHOLDERS

Nigeria's public sector is struggling to retain human capital, which tends to flow to the private sector in pursuit of higher prestige and salaries. The SMDF could help strengthen the public sector by offering competitive wages and a meaningful impact on the country's economic development.



STAKEHOLDERS



Retaining talent in the public sector is an ongoing challenge for Nigeria's mining industry. Human capital flows to the private sector. [...] The SMDF could bolster the attractiveness of the sector – for investors and talent with proper funding

Thomas Eleoramo, Chief Operating Officer, Kohath Investment Group

INSIGHTS ON BARRIERS

INSTITUTIONS & GOVERNANCE

Although corruption and rent-seeking behavior in the extractive industries have captured international headlines and defined development programs, industry participants stress that the cost of inefficient governance and conflicting institutional interests place a substantially higher burden on investors than corruption. While industry participants are aware of corruption and deem such practices harmful to their operations, in the Nigerian context, the real obstacle appears to be the inconsistent and unclear fee schedule, licensing regime and state as well as national taxation laws. A fortiori, this complex legal and regulatory framework is inadequately enforced and inadvertently makes room for informal business conduct, corruption and bribery as well as political instability. As politics in lieu of the law drive investment decisions, a vicious cycle gets into motion which reinforces weak institutional governance that feeds corruption.



**INSTITUTIONS &
GOVERNANCE**



Double taxation from the federal and state governments is a problem. Corruption is another serious problem here. You have to settle every single person in the government if you do business here. The hidden cost is high.

Anonymous, Private Sector Participant

INSIGHTS ON BARRIERS

KEY ENABLERS

Investors and industry participants perceive inadequate physical infrastructure as a significant obstacle to mining investment in Nigeria. Even if the development of a mineral deposit itself is economically viable, is profitable and sustainable, the high up-front cost of infrastructure and essential ancillary services (e.g. electrical power distribution, railroads, ports, etc.) bar investors from investing.



KEY ENABLERS



Whereas a short supply of skilled workers, especially for managerial positions, appears to be an issue, investors note that the large supply of informal and small-scale miners harbor a wealth of untapped knowledge about industry practices, ore quality and environmental concerns. Employing these workers could draw from this knowledge pool and deliver noticeable benefits for the industry.

Nonetheless, Nigeria's mining sector largely remains an enclave economy, with few meaningful linkages to other sectors. Especially, upstream services, such as those provided by logistics and transportation companies, have not taken hold. This is also true for security companies. These additional costs place a substantial burden on investors.

BEYOND THE ROADMAP

BEYOND FRAMEWORK OF ROADMAP, INDUSTRY PARTICIPANTS STRESS THE FOLLOWING KEY ACTION ITEMS

Ownership Requirements

Requirements and limitations to FDI seriously hamper investment in the Nigerian mining sector. According to a number of interviewees, many mining projects cannot go ahead as initially planned for stringent ownership requirements set by the Nigerian federal government. Foreign investors cannot obtain full ownership of mines, depending on their size, as defined by the federal government. Coal mining, regardless of the mine's size, is restricted to domestic investors.

Considering these ownership requirements, foreign investors are left to collaborate with a Nigerian partner via a menu of partnership options. Although the rationale behind the strict requirements conforms with international development programs lest developing countries "sell-out" their natural reserves to multinational corporations, the rules delay investment schedules and can cause investors to allocate funds to alternative projects, leaving Nigeria's mining potential unrealized.

In addition to these direct obstacles, indirectly, the incentive to set up shell companies to circumvent these requirements further undermines Nigeria's institutional framework and the rule-of-law. One Chinese investor emphasized that their company is strongly in favor of scrapping ownership requirements and granting Chinese enterprises full ownership of their assets.

Security

Investors experience a high level of security risk which in the worst case manifests itself in kidnapping and local petty crimes. Protecting personnel and assets from violence and destruction adds to the costs of an investment and can reduce investor appetite for meaningful investments.

INSIGHTS ON ACTION ITEMS

SHORT TERM

In view of attracting foreign investment, the SMDF is encouraged to consider ramping up efforts to improve 3 key action items, which are expected to capture more sector-specific FDI inflows. These are formalizing ASM, expanding coverage of and access to geosciences data, and strengthening Nigeria's financial and business environment.

While these were addressed by industry participants and identified as crucial action items worthy of pursuit, our interviews revealed a number of additional action items that the SMDF can consider in its short-term decision-making process. This includes a compelling awareness campaign that presents the SMDF to the public at large and the industry in particular.



INSIGHTS ON KEY ACTION ITEMS

ACTIVELY DRIVE THE FORMALIZATION OF ASMS

Formalizing artisanal mining is considered as a good idea by some Chinese investors, as long as the government can execute the plan well. Although the formalization of ASM does not top their list of improvements for the sector, ASMs can instead of being a hindrance be turned into a valuable asset as local workers have knowledge of the environment, cultural sensitivities and social structures that investors – national and international alike – do not possess. Investors stress that, at some nodes of the solid minerals value chain, local knowledge and manpower can be deployed to realize a mineral reserve's full potential.

Some industry participants envision this to roll out in the form of a public-private partnership, where the government, represented by the SMDF, focuses on supporting registration and purchasing while private companies take over for the rest of the value chain.



The formalization of ASM is not a bad idea. But the implementation is tricky. The government should consider to cooperate with private companies to improve efficiency.

**Tang Suqiang, General Manager,
Ming Xin Mineral Separation LTD**

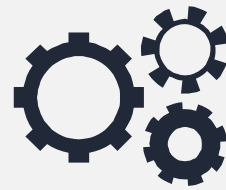
INSIGHTS ON KEY ACTION ITEMS

EXPAND COVERAGE, RESOLUTION OF, AND ACCESS TO GEOSCIENCES DATA IN NIGERIA

Interviewees believe high-quality geo-data integration and visualization are significant, if not fundamental, enablers for investments in Nigeria's mining sector. Knowing what, when, where and how much to expect from a given investment is the sine qua non condition for any prudent investor.

Without such data, the decision-making process ends before the exploration stage, leaving Nigeria's mining potential unfulfilled. In the absence of the essential data and without the required infrastructure in place to conduct individual mine-site surveys, the cost of one geo-scientific assessment alone can tilt the cost-benefit analysis for an investor to not invest.

Most of the data available to Chinese investors date back to information collected by colonial British records from the 1960s.



Most data distributed from the government is an adaption of the geoscientific data obtained by the western mining majors decades ago, and more detailed exploration is needed. Also, there is not a straightforward visualization of resource distribution so it is hard for new players to get started.

Luo Yaoqiang, Co-founder, Rufu Investment Co.,Ltd

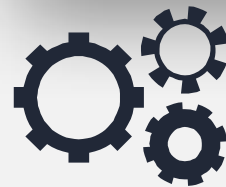
INSIGHTS ON KEY ACTION ITEMS

STRENGTHEN THE FINANCIAL AND BUSINESS CLIMATE

Chinese (and Nigerian) investors indicate that exceedingly high costs of equipment financing thwart their investment decisions.

While access to international sources of funding is also unattractive, due to international lenders' risk aversion (Nigeria's mining sector is traditionally associated with an extreme-risk business climate), investors can often not fund an otherwise potentially profitable mining enterprise.

This has led investors to turn to the SMDF for initial funding, which has more often than not failed to materialize. According to interviewees, access to the fund is limited and can be politically motivated.



Although the government authorizes national banks to provide financing for equipment purchasing, the cost of debt is high from 8% to 15% and does not worth it. [The income] tax rate of approximately 25% is high for small businesses which drives SMEs to open their bank account overseas to avoid further transaction fees.

Luo Yaoqiang, Co-founder, Rufu Investment Co.,Ltd

INSIGHTS ON ACTION ITEMS

MEDIUM TERM

The SMDF is moreover encouraged to work on 5 investor-specific key action items that promise more FDI into the sector in the medium-term. These include developing and harmonizing financial incentives for mining companies, encouraging forward integration into downstream operation, building local technical/managerial capacity, promoting gender equity, and catalyzing infrastructure investments.

In contrast to the short-term goals, the medium term action items were only partially confirmed or re-emphasized by industry participants. Whereas offering financial incentives and expanding physical infrastructure capabilities were strongly underscored, promoting downstream activities does not appear to be a major concern for investors in the next 2-5 years. Similarly, gender parity and female labor participation has no priority for investors.

Having said that, in addition to the Roadmap's key action items, interviewees choose to stress the importance of environmental, social and governance (ESG) metrics that can guide sustainable investments. Implicitly, these can include programs to ensure gender equity.



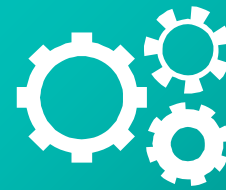
INSIGHTS ON KEY ACTION ITEMS

DEVELOPMENT AND HARMONIZATION OF INCENTIVES FOR ATTRACTION OF MINING MAJORS AND JUNIORS IN NIGERIA

Another point of contention raised by investors concerns the lengthy and convoluted application process for prospecting, exploring and obtaining mining extraction licenses.

The divergence between state legislation and federal regulations results in cumbersome application procedures that can, at times, cause severe delays or even halt a project entirely. Industry participants long for more transparency and a streamlined process that helps them assess the viability of a project.

Our conversations therefore reveal that it does not necessarily need incentives for investors, but rather the elimination of clear disincentives that are currently in place.



...you need both a prospecting license and a mining license to start mining according to the law, but very few people have applied for the mining licenses (because of the convoluted bureaucratic process).

Anonymous, Private Sector Participant

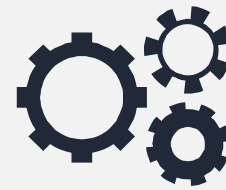
INSIGHTS ON KEY ACTION ITEMS

ENCOURAGEMENT OF FORWARD INTEGRATION OF EXPLORATION AND MINING COMPANIES INTO DOWNSTREAM OPERATIONS

Many Chinese mining businesses have established partnerships or alternative relationships with other Chinese downstream (forward integration) companies along the value chain, such as logistics and transportation companies and minerals refineries, but the sector's overall integration remains fragmented.

While encouraging forward integration – and other vertical, horizontal and consumption linkages – should form part of any comprehensive development plan, investments in processing and refining are extremely expensive.

Focusing on the establishment of a sustainable extraction process, in lieu of engaging in high-risk and high-cost downstream development, might be preferable at Nigeria's stage of sector development.



Chinese investment in Nigeria has been increasing in the past few years and is expected to keep growing in the foreseeable future. We would love to work with the government and investors from other countries in integrating the sector's value chain.

**Yang Yang, General Secretary,
Chinese Business Capacity Association in
Nigeria**

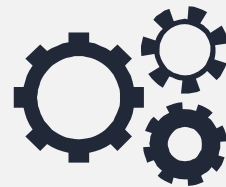
INSIGHTS ON KEY ACTION ITEMS

BUILDING OF LOCAL TECHNICAL/MANAGERIAL SKILLS AND CAPABILITIES REQUIRED IN THE INDUSTRY

Employment linkages, by contrast – as already alluded to elsewhere in this report – can (partially) solve the problem of ASM as well as benefit formal businesses by tapping into affordable local workforce as well as precious local knowledge.

A Chinese mining logistics company told us that they operate solely on the basis of hiring local Nigerians as truck drivers. This, according to the interviewees, creates employment and removes the often daunting task of acquainting international drivers with the quality and complexity of Nigeria's road network.

In the long run, however, lower skill jobs such as driving trucks and manual labor tasks such as extracting the ore from the ground will not suffice to create a more business-friendly environment or meaningful development outcomes for the country. More concerted efforts to create sustainable employment opportunities, training and education are required. In this, interviewees see an instrumental role for the SMDF.



All of our truck drivers are local Nigerians.

Wu Ming, General Manager, Hong Yu Logistics Ltd

We hire mostly local people. The labor cost is very reasonable. But they are not that professional. The government can offer some training programs to improve their skillsets.

Li Xiaoling, General Manager, FDY Mining Nigeria LTD

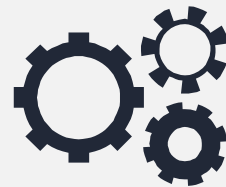
INSIGHTS ON KEY ACTION ITEMS

PROMOTION OF GENDER EQUITY AND FEMALE PARTICIPATION IN THE SECTOR

Whereas gender equity and female participation ranks highly as a concern for the government, the SMDF and international development organizations, especially with a view to sustainably developing the mining sector and improving the situation of ASM, private investors do not consider gender parity or female inclusion a priority.

Nonetheless, given the enormous wasted potential by excluding some 50% of Nigeria's workforce, creating an inclusive investment and business environment for both women and men, the SMDF is strongly encouraged to incentivize and promote female participation in the mining sector.

At the least, disaggregating data for different genders in line with international best practice and thus disclosing gender ratios for reports to build subsequent analyses upon is highly recommended.

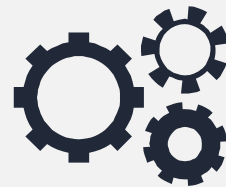


INSIGHTS ON KEY ACTION ITEMS

CATALYZATION OF INVESTMENTS IN INFRASTRUCTURE

Industry participants in the logistics sector point out that government-sponsored critical transportation infrastructure (e.g. railways, highways) projects are slow and inefficient. In order to attract investment in the mining industry, the SMDF is encouraged to play an active role in facilitating public and private critical infrastructure financing from both domestic and international entities, as well as in the subsequent project execution process.

Investors envision the construction of a multi-use railway corridor from Nigeria's coastal hubs to in-land mining clusters. Depending on the corporate set-up of such a structure, right-of-way clauses and the removal of cargo type restrictions on rails and ports, are expected to increase the volume, speed and overall efficiency of Nigeria's transport sector.



There are only a few high-quality highways built by the federal government around major cities. Governments need to work together to enforce development transportation infrastructure and reduces traffic jams created by either the road condition or the checkpoints. [...] Lack of power, ICT [information and communications technology] and transportation infrastructure increases the risk of mining and sustainable investment.

Luo Yaoqiang, Co-founder, Rufu Investment Co.,Ltd

BEYOND THE ROADMAP

BEYOND FRAMEWORK OF ROADMAP, INDUSTRY PARTICIPANTS STRESS THE FOLLOWING KEY ACTION ITEMS

Short Term

For many operating in the Nigerian mining sector, the SMDF is an unknown entity. A number of interviewed Nigerian and Chinese investors have never heard of the SMDF. Without knowledge of the fund, access and subsequent deployment of monies cannot ensue.

Especially Chinese business owners and industry participants are not familiar with the SMDF or what it does. If they do, they remain cautious as to whether the fund's functions can achieve tangible outcomes. They stress that there is a fundamental schism between what industry participants want and what they perceive as a useful contribution by the state or a government-aligned organization.

Medium Term

Investors indicate that there are no specific safety or environmental requirements for mining operations. While a lack of regulations in a laissez faire free market sense might under normal circumstances fuel investments, this cannot be directly translated to the mining industry due to high security risk on the ground.

Industry participants usually do not know which rules to follow, especially in terms of environmental and social safeguards. Investors are therefore turning to the SMDF for clear guidance on which considerations to make and safety measures to implement.

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Recommendations

AS BROUGHT UP BY OUR INTERVIEWEES, THE SMDF IS ENCOURAGED TO CONSIDER TAKING INTO ACCOUNT THE FOLLOWING RECOMMENDATIONS.

In the short term, the SMDF is well-advised to examine 3 immediately implementable options in the pursuit to develop Nigeria's mining industry:

1. Raise awareness of the SMDF and its functions.

Few industry participants are aware of the fund and what it can do to help facilitate investment in the Nigerian mining sector. A compelling marketing campaign could elevate the fund's public standing and anchor its place as a valuable institution in the Nigerian extractives sector.

2. Provide a proof-of concept that investing in Nigeria's mining industry represents a profitable and sustainable venture. A limited number of international investors have paved the way for others to follow. The SMDF is encouraged to prove to investors that Nigeria's economy is 'open for business' and provide assistance to navigate the country's legal and fiscal framework.

3. Publish and explain Nigeria's ESG guidelines that industry participants can readily access and thus adhere to. In the absence of clear ESG protocols, investors frequently feel uneasy when entering an industry and often fail to secure funding from international sources. In the medium term, the SMDF is encouraged to implement the following 2 measures that will materially contribute to Nigeria's sustainable mining sector development:

4. Revise Nigeria's local ownership requirements.

The SMDF is encouraged to weigh the options of pushing for the easing of tight ownership regulations, establishing a state-owned mining company to undertake necessary investments or intermediating between international actors and potential Nigerian partners.

5. Put forward initial funding for investors to cover up-front costs, such as gathering geo-scientific data and other expenses in mining project's exploration phase. As access to local funding for foreign investors is limited and international sources of funding require stringent proof of a mine's profitability as well as high collateral, the fund is advised to circumvent traditional funding mechanisms and offer direct and effective capital. While this report acknowledges the (financial) limitations of this recommendation, it should nonetheless represent a core component that aims to guide the SMDF's future decision-making process.

