

INVESTMENT OPPORTUNITY IN NIGERIAN MINERALS/ MINING SECTOR

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- Mineral Exploration/Data Acquisition
- Geosciences Data used by Industry
- Geology of Nigeria
- Mineral Resources
- Government Reforms
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- Investment Opportunities
- Conclusion.

Introduction --Country Profile

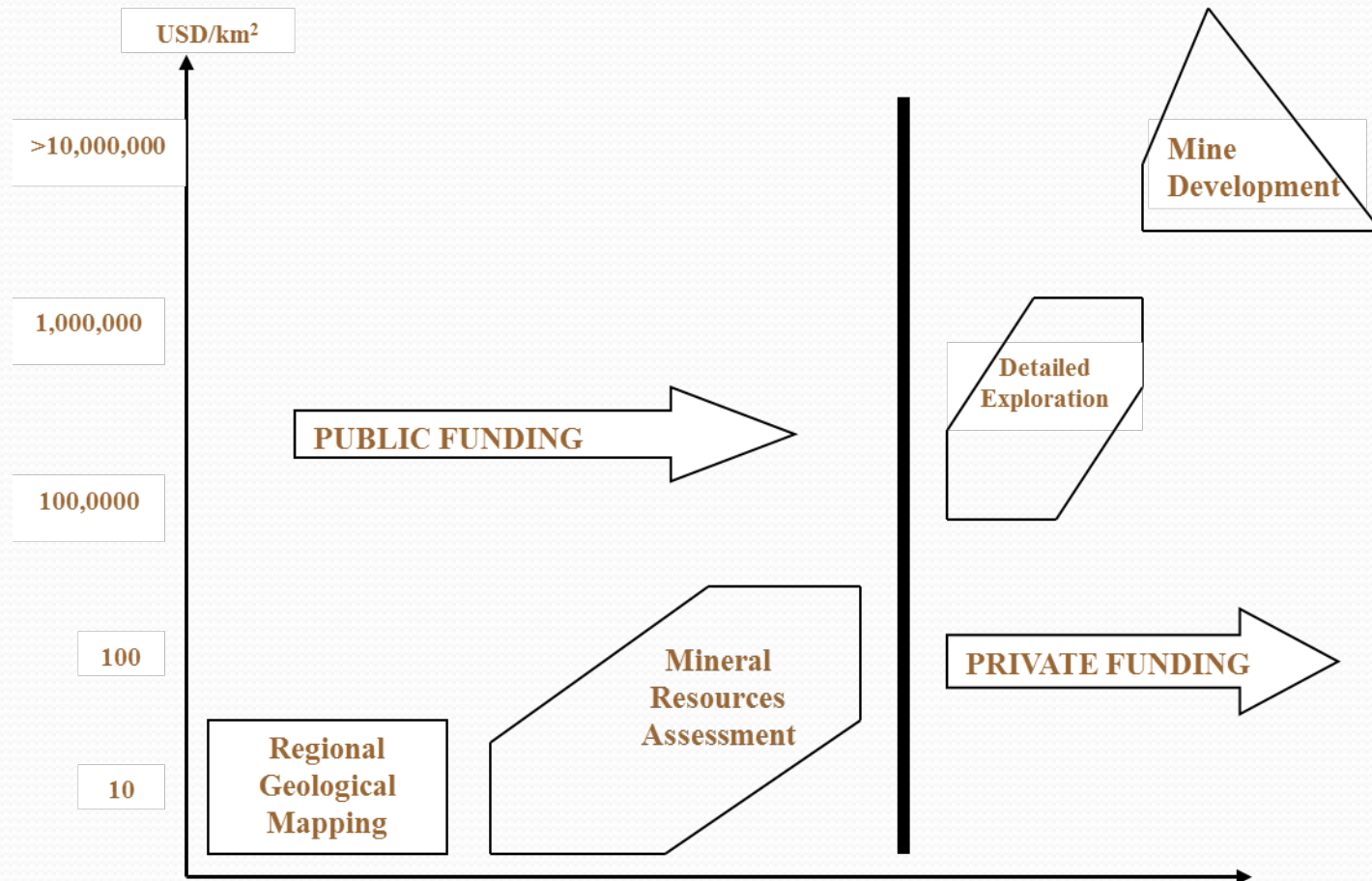
- **Landmass:** :923,768 km²
- **Coastline:** 853 km
- **Capital:** Abuja
- **Official Language:** English
- **Major Languages:**
Igbo, Hausa, Yoruba.
- **Others include:** Fulani, Ijaw, Tiv, Ibibio, Kanuri, Idoma
- **About 250 linguistic Groups**
- **Population:**
(2011):181,562,056
- **Currency:** Naira



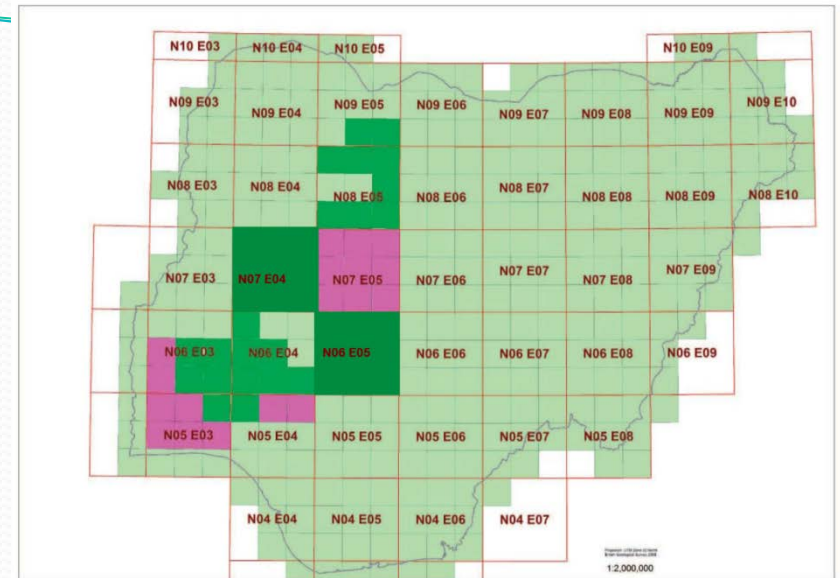
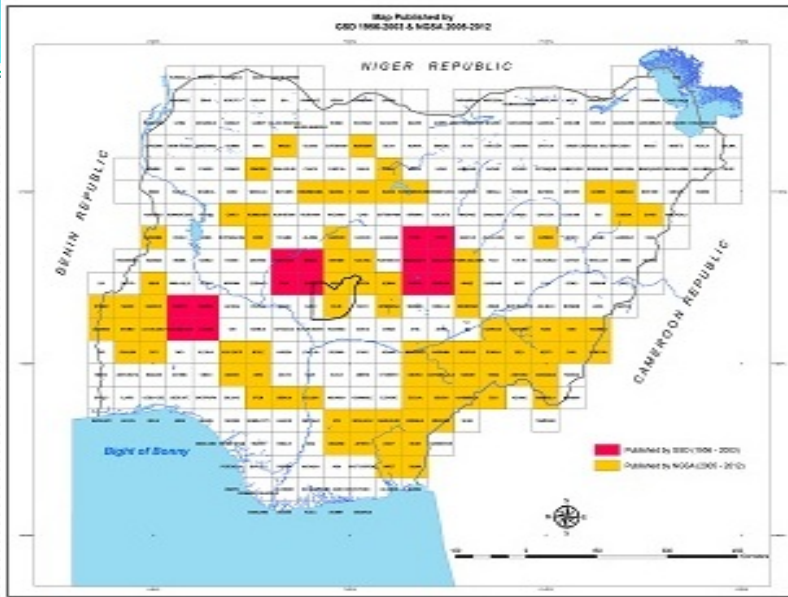
Introduction (continued)

- **A decline in the Oil Prices in Recent Years has Prompted the Government to Diversify the Economy, making the Development of the Mining Sector a Priority by carrying out **Reforms** in the Mining Sector. Hence, Effort are geared toward *Geological, Geochemical and Geophysical Surveys*, aimed at Producing needed Data/Information by Investors to make informed Decisions.**

➤ EXPLORATION/ DATA AQUISITION

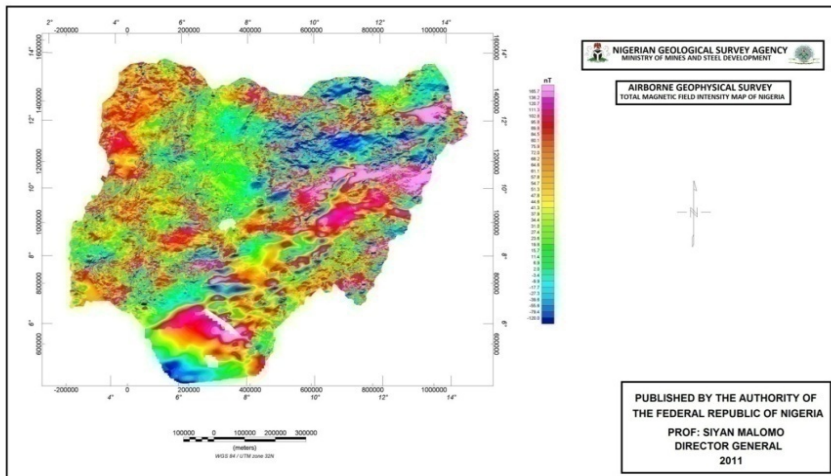


Survey Outputs: Types of Geoscience Data used by Industry

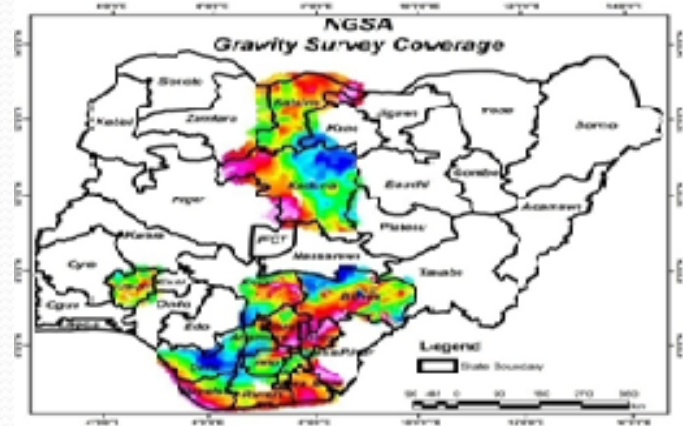


Geochemical Mapping (8 of 44 GRN Cells)

Geological Maps (95 of 337 nos. 1:100,000)

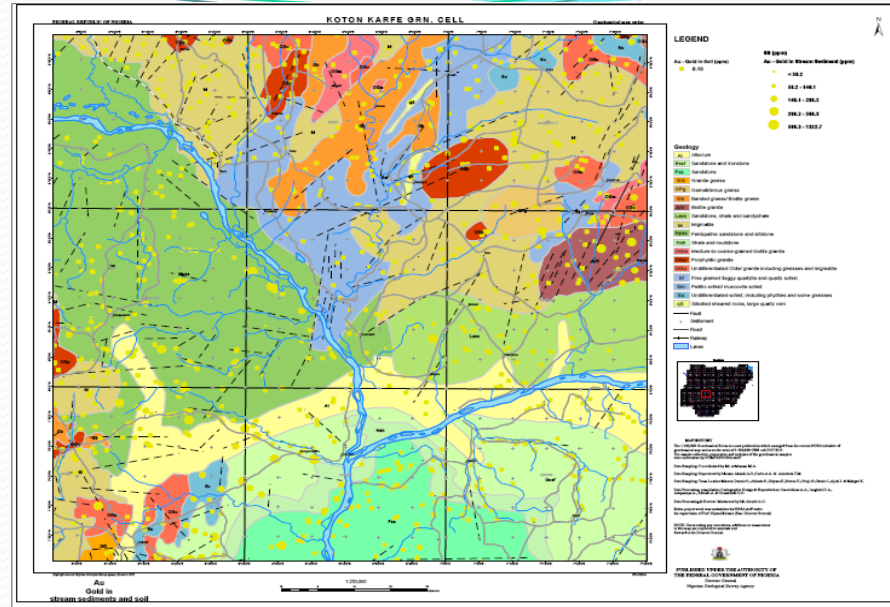
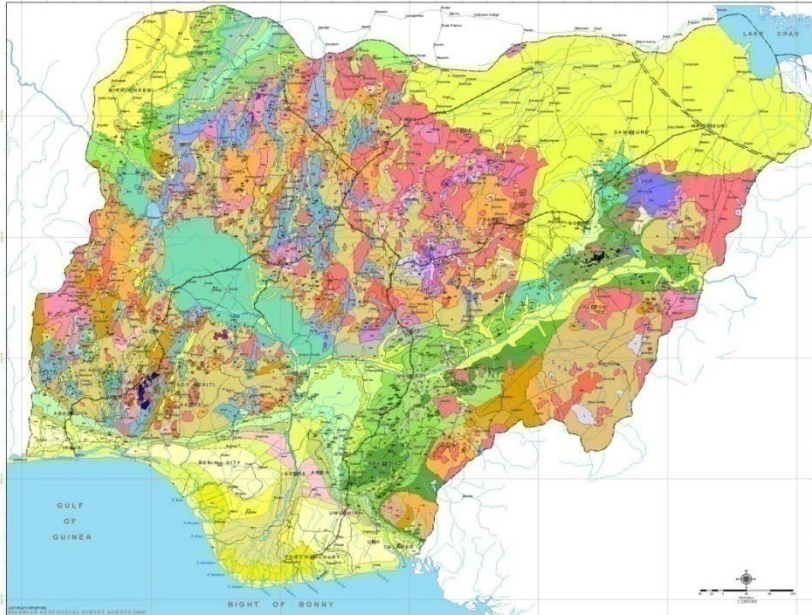


100% Coverage on Airborne Geophysical Survey



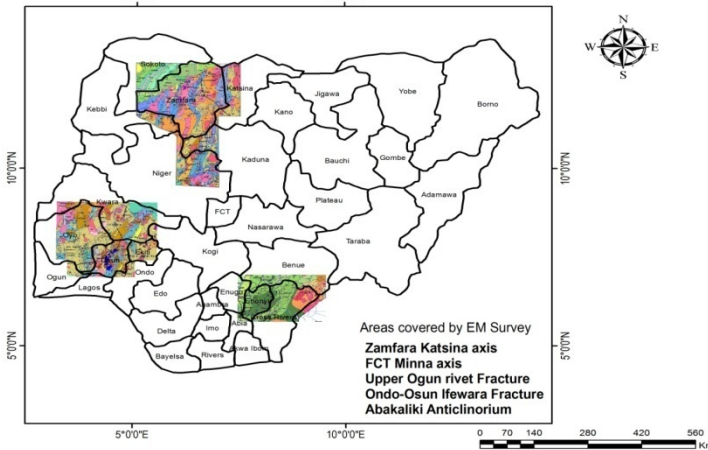
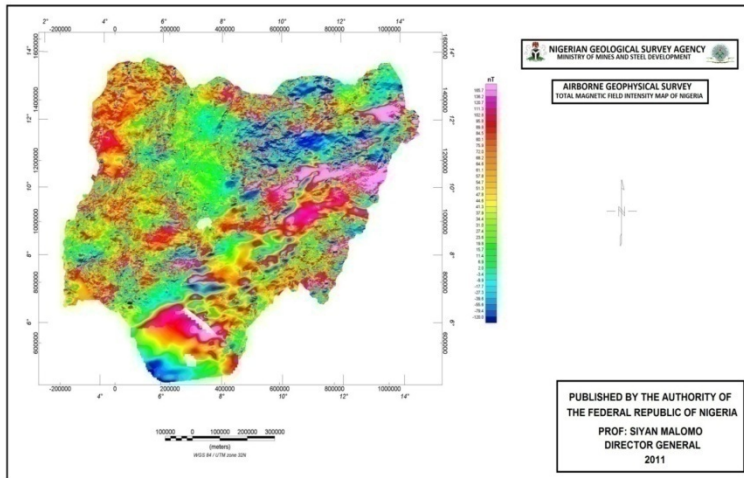
30% Gravity Coverage

Survey Outputs: Types of Geoscience Data used by Industry



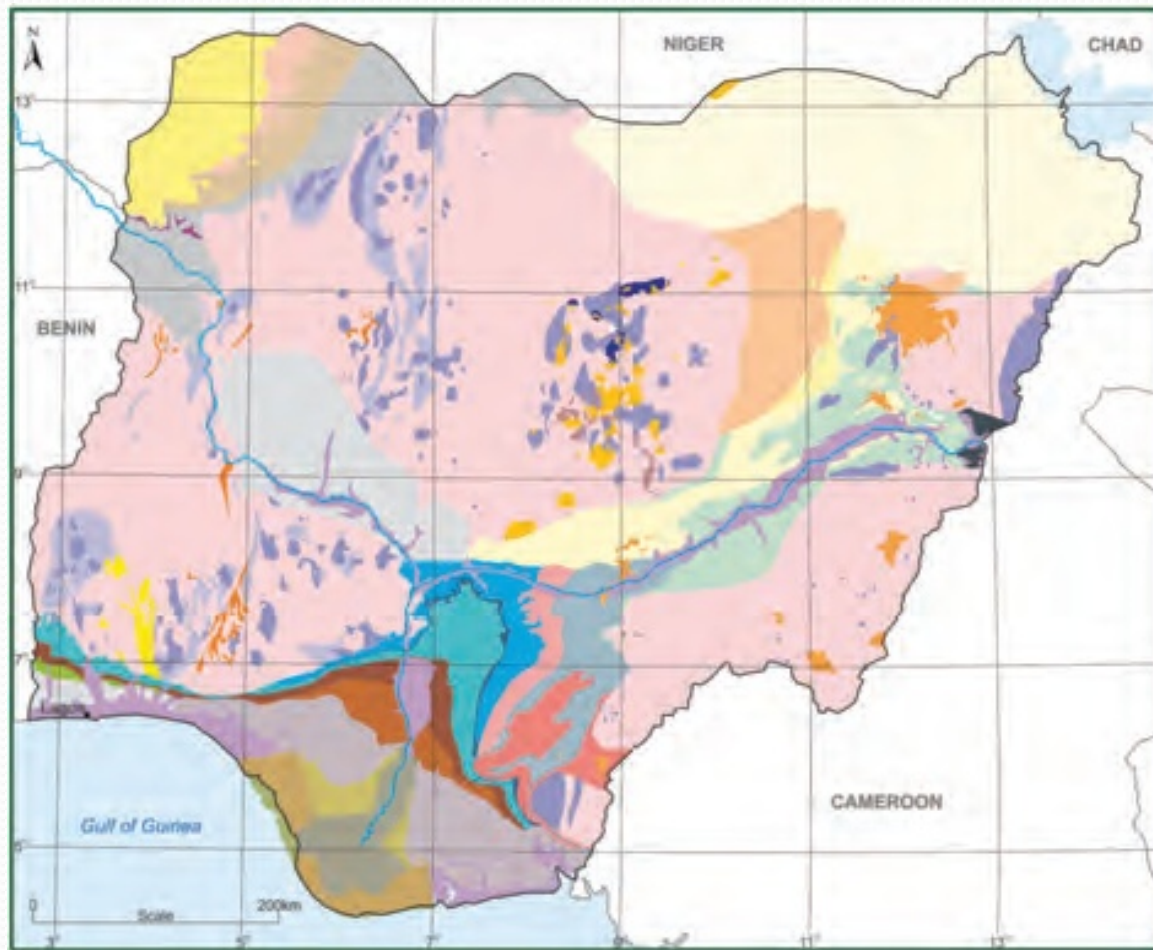
AIRBORNE EM SURVEY COVERAGE - 24,000 LINE KM
AIRBORNE EM SURVEY COVERAGE - 24,000 LINE KM (Cel)

Geological Maps



Geophysical Map (Nigeria)

➤ Geology of Nigeria



Simplified Geological Map of Nigeria

Legend

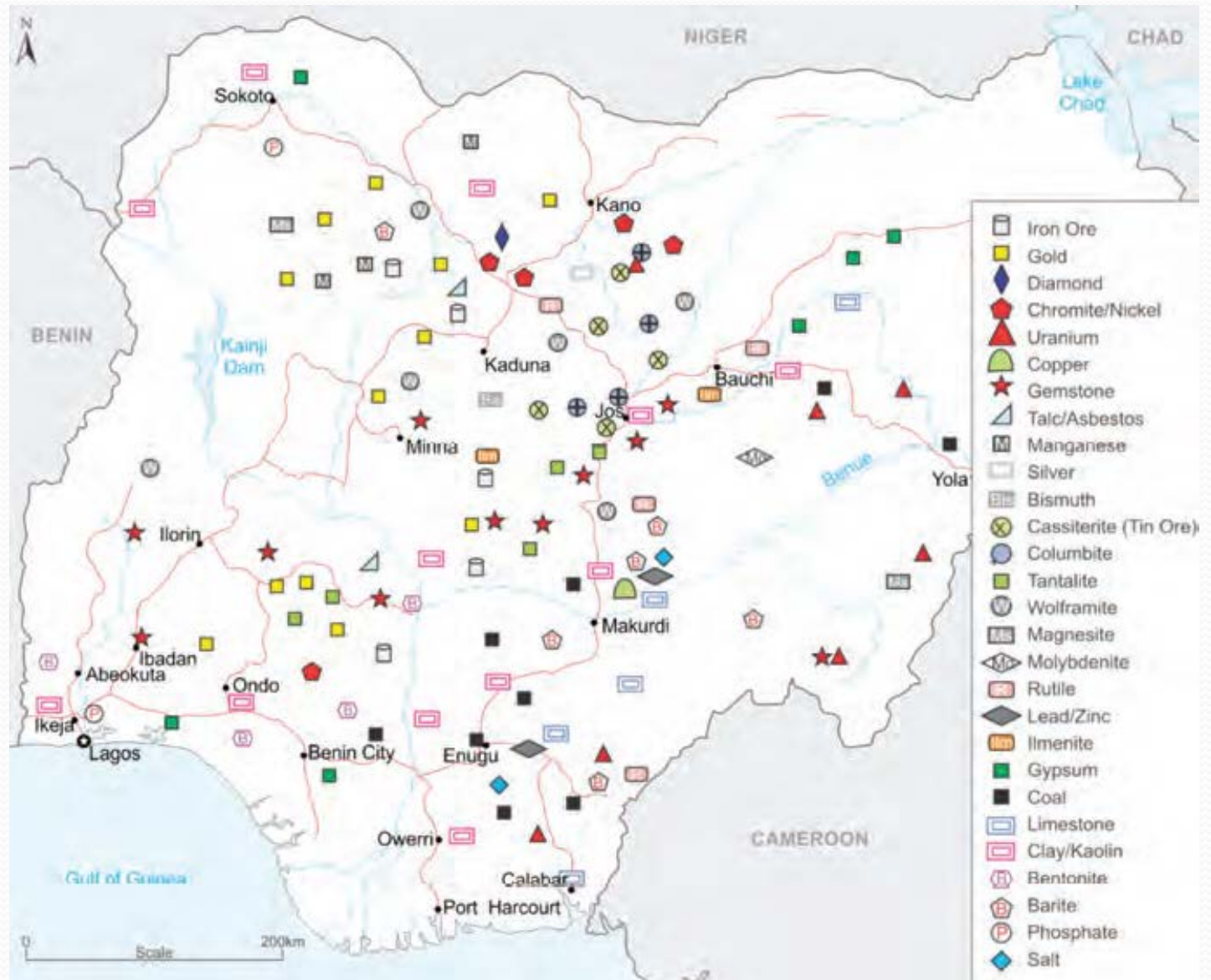
- | | |
|--------------------------------|-----------------------------------|
| Basalt, Trachyte, Rhyolite etc | Eze Aku Shale Group |
| Alluvium | Asu River Group |
| Meander belt | Non-marine facies-Gombe Sandstone |
| Mangrove swamps | Marine facies |
| Abandoned beach ridges | Bima-Yola Formation |
| Sombreiro-Warri Deltaic Plain | Bima Sandstone-Yolde Formation |
| Coastal Plains Sands | Rima Group |
| Chad Formation | Nupe Sandstones |
| Ilaro Formation | Ilo Formation |
| Gundumi Formation | Ibedan Quartzite-Schist |
| Granite | Undifferentiated Basement Complex |
| Rhyolite | Lower Coal Measures |
| Bende Ameki Group | Asata Nkporo Shale Group |
| Gwandu Formation | Awgu Ndeaboh Shale Group |
| Ewekoro Formation | Older Granite |
| Kerri Kerri Formation | Undifferentiated meta-sediments |
| Sokoto Group | Quartzite |
| Abeokuta Formation | |

Geology of Nigeria continued

- The geology of Nigeria is dominated by the **Basement Complex Rocks** which occur in the northeastern, southwestern and north-central region of the country and *Sedimentary Rocks sequences* that have filled up the Basins which are vast depressions between the Basement Complexes

Nigerian Mineral Resources

Mineral Resources Distribution in Nigeria



- **Current exploratory studies revealed abundant Mineral Resources occurring in all the components of Nigerian Geology**
- **As at 2016, Over 40 known minerals were discovered in Nigeria. Some of which include:**
- ***Lead, Zinc, Copper, Iron Ore, Marble, Tin, Columbite, Tantalite, Gold, Talc, Gypsum, Limestone, Phosphate, Manganese, Kaolin, Baryte, Nickel, Coal, Brine, Varieties of Gemstones amongst Others.***

Nigerian Mineral Resources

- **Currently, efforts are being geared toward embarking on detail evaluations of these Mineral Resources, especially, the New discoveries to ascertain the reserve.**
- **Most of Nigeria's mineral production is by artisanal and small scale miners (ASMs)**

✓ Strategic Minerals

- As part of the strategies to reform the Mining sector, the Ministry of Mines and Steel Development have identified seven (7) strategic minerals, : **Coal, Bitumen, Limestone, Iron Ore, Barites, Gold, Lead and Zinc for Priority Development.**

➤ GOVERNMENT REFORMS

- Mining code was re-designed in line with global best practice
- The Role of Government and the Entrepreneurs are Well Defined
- Characterisation studies of both the Informal and Organised Mining Activities in Nigeria
- Capacity Building - Formalizing of Artisanal and Small-Scale Mining into Mining Cooperatives/Quarry Associations
- Modernizing the Nigerian Geological Survey Agency
- Government Now Administrator- Regulator

Government Reform Continued

- Private sector is Owner-Operator
- Improved Security of Tenure through Modern Mining Cadastre
- Entry Visa Regime Liberalised, Visa can be Granted up to 10 years

-Reform in the minerals sector in Nigeria is to-

- Diversify the Economic Base
- Employment generation
- Wealth creation

➤ **Legislative and Regulatory Framework**

- **In an attempt to Liberalize the Mining Sector, The Nigerian Government, Through the Ministry of Mines and Steel Development, has enacted the new Minerals Act and Created a Basic Framework to Promote Rapid growth in the Sector.**
- **Some of the legal framework include: *‘The Nigerian Mineral and Mining Act, 2007’*
and *‘New Minerals and Mining Regulations 2011’***

✓ **The Ministry of Mines and Steel Development is the main overseer of Mining Activity in Nigeria, Supported by Technical Directorates and Agencies. The Mining Cadastral Office is the office empowered to deal with all issues concerning licensing.**

✓ Mineral Title Administration by Mining Cadastre Office

License Type	Purpose	Duration
Reconnaissance Permit (RP)•	The holder has the right to obtain access into, enter on or fly over any land within the territory of Nigeria available for mining purpose to search for mineral resources on a nonexclusive basis Drilling and other subsurface activities are not permitted Allows the holder of the right permission to obtain and remove surface samples in small quantities	1 year (Renewable annually)
Exploration Licence (EL)	• To conduct exploration on the land within the area of the licence The mining activity is restricted to specified minerals The holder is allowed to remove, conduct bulk sampling and testing, export and sell mineral resources not exceeding established limits and the mining area is not more than 200sqkm	3 years initially Renewable two further periods of 2 years each
Mining Lease (ML)	• Granted to the holder of an exploration licence or small scale mining lease, which has fulfilled the obligation of the licence and has applied for a mining lease for the purpose of the explored area	25 years initially Renewable every 24 years
Quarry Lease (QL)	• Quarrying under the Mining Act applies to all naturally occurring quarriable minerals, such as asbestos, clay, fuller' s earth gypsum, marble, limestone, slate, sand, stone, gavel, etc. All of which may also be mined under the Mining Lease 5 years, unless renewed	5 years, unless renewed
Mining Lease (SSML)	• The holder of the lease has the exclusive right to carry out small-scale mining operations The mining area is greater than 5 acres but less than 3km ² 5 years	initially Renewable for further period, however not exceeding 5 years

➤ **INVESTMENT OPPORTUNITIES**

- *Seven (7) Strategic Minerals Potential to make Significant GDP Contributions*-Bitumen, Gold, Coal, Lead/Zinc, Baryte, Iron –Ore and Limestone

- **Bitumen Resource Belt**

Spanning through Lagos, Ogun, Edo and Ondo States

- **Gold**

Found in alluvial placers and primarily veins in parts of the schist belts of Northwest and Southwest Nigeria with Important occurrences in Maru, Anka, Mchala, Tsohon, Birnin-Gwari, Kwaga, Gumania, Birni-Yauri, Otolom-Dogondaji, Madaka, Sarkin-Pawa, Gurara and Iperindo areas.

- **Coal**

Occurs in Enugu, Anambra, Kogi, Benue

Lead/Zinc

- Occurs mainly in the Benue Trough (Ebonyi, Nasarawa, Taraba, Plateau, Bauchi, Zamfara States and FCT).
- Lead/Zinc mineralization is often associated with minor/significant amount of copper/silver/gold/quartz/barites.

Barytes

- Occurs in Nigeria as vein infilling materials associated with lead/zinc lodes and veins in both Precambrian basement and Cretaceous sedimentary rocks.
- Occurs in Benue, Cross River, Nasarawa, Taraba and Plateau States.

Iron Ore

- Occurs in Nigeria as Banded Iron Formation (BIF) and the cretaceous sedimentary, Oolitic iron deposits.

Investment Opportunities (Cont'd)

- **Banded Iron Formations (BIF)** : Occurs in Itakpe, Ajabanoko, Ochokochoko, Birnin Gwari, Kaura Namuda, Isanlu and Ogbomoso areas.
- **Oolitic iron deposits** occurs in Agbaja, Koton-karfi, Nsude and Enugu State.
- BIF in Nasarawa (Muro and Gadabuke) and Kogi state.

- **Limestone**
Occurs in commercial quantities in Benue, Cross River, Edo, Kogi, Gombe, Ebonyi, Ogun, Jigawa and Sokoto States.

➤ INVESTMENT AVENUES

- All Geosciences Data must be accurate and reliable to be useful to any investor.
- Applying for **mineral titles** with a view to wholly owning the mining rights for the mineral of interest.
- Partnering with existing title holders for detailed exploration through evaluation of data acquired as **consultants and specialists**.
- Dissemination of such data as **producers of software, maps and analyst-Laboratories**.
- Partnering with existing title holders in **joint venture** agreement to explore, mine and market the mineral in areas of interest.

CONCLUSION

All geosciences **data must be accurate and reliable** to be useful to any investor.

- Vast mineral wealth Exist in Nigeria and can be made **available through exploration and Exploitation**
- Challenges being mitigated through **reforms** to attract investors
- Overall effect is **profit for the Investors and wealth creation and employment generation.**

Resource Materials For More Information



Nigerian_Minerals_and_Mining_Act_2007 B.pdf



Guidelines_for_Mineral_Title_Applications A.pdf



Nigeria-Ministry-of-Solid-Minerals-Investment-BrochureV12.pdf



**THANK YOU FOR
LISTENING**