



Federal Republic of Nigeria  
**Ministry of Mines & Steel Development**

# Lead-Zinc and Lead-Gold-Silver-Copper

## Exploration and Investment Opportunities in Nigeria

### Mineralization

Lead mineralization in Nigeria occurs in two contrasting geological setting and mineralization styles. These are:

- Mississippi Valley Type (MVT) lead-zinc mineralization hosted in the sedimentary Rocks of Middle and upper Benue Trough
- Lead-Gold-Silver and Copper veins found in the Basement Complex rocks.

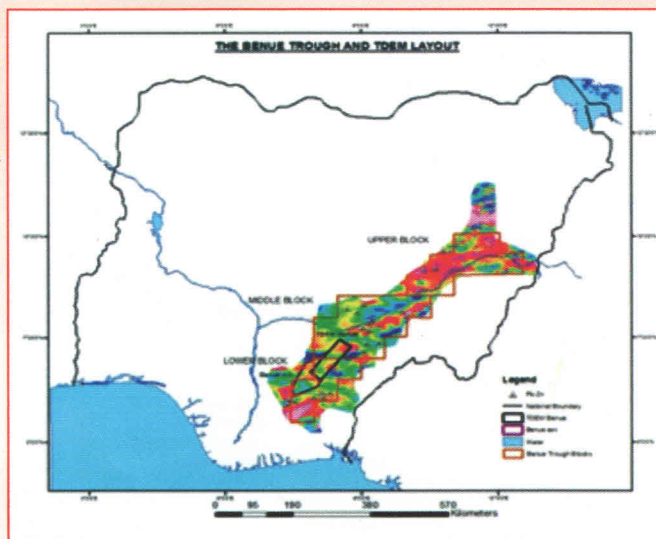
### Geological Setting

Lead-Zinc occurrences in Nigeria are reported to be associated with saline water intrusion in the sedimentary basins or fractured/shear zones in crystalline rocks. The mineralization is often associated with minor to significant amounts of copper and silver. They are found occurring as lodes filling the fractures within the sedimentary rocks in the Benue Trough as well as in Crystalline Basement rocks. The Benue Trough, is believed to have originated as a failed arm of an aulacogen at the time of the opening of the South Atlantic oceans during the separation of the African plate and the South American plate.

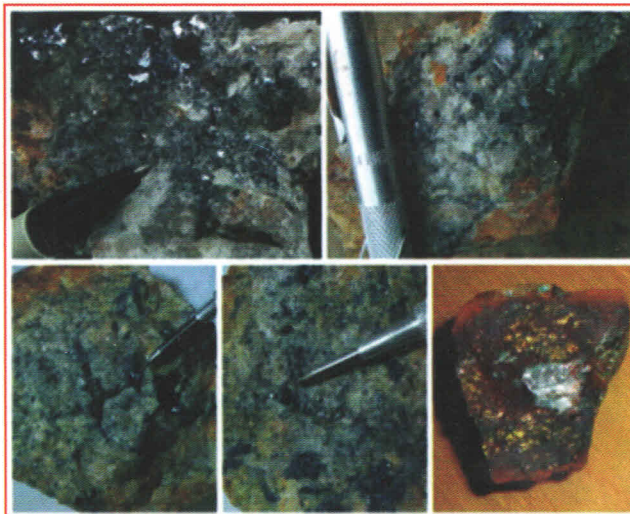
### Modes of Mineralization

Lead/Zinc mineralization in the Benue Trough (occur dominantly as open-space filling within en echelon tensional, steeply-dipping fracture systems, commonly astride anticlinal axes. The principal ore minerals are galena and sphalerite. Other metallic minerals include copper ores such as chalcopyrite, enargite, marcasite and tetrahedrite. These minerals occur in lodes and veins infilling open fractures in the sedimentary formations in three areas along the the Benue Trough, respectively around Ishiagu- Abakaliki-Agbaja in the Abakaliki Anticlinorium, Akwana-Arufu where the basement outcrop approaches the centre of the Middle Benue Trough, and from Wase, through Zurak to Gwar in the Middle and Upper Benue.

Lead-Gold-Silver and Copper veins are found notably within the schist belts where the are have interestingly high gold and silver contents. Some of these area are within the Anka schist belt. Zungeru schist belt and the Ag-enriched Pb-Au-Ag-Cu veins of Baban Tsauni area near FCT. Geochemical assay data of samples of these veins indicated values reaching 41.8% Pb, Ag 746ppm and Au 27ppm. This type of mineralization is indicative of polymetallic base metal enriched sulphide mineralization. The presence of anomalous gold concentration in the lead ore associated with silver suggests the possibility of the gold in solid solution with lead and silver occurring primarily as a sulphide. Investigation in one of the identified Pb-Au-Ag-Cu districts yielded a median resource size of 360–810,000 tonnes at 17 to 21% Pb, 10 to 12 g/t Au, 97 to 121 g/t Ag and 0.1 to 0.13 % Cu

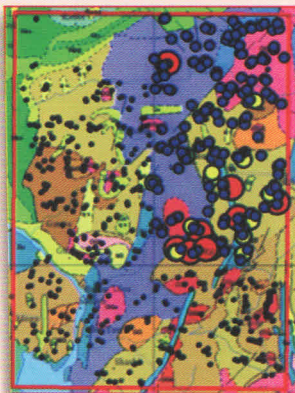


Airborne data of Benue Trough area showing some Pb-Zn operations



Pb-Au-Ag-Cu ores

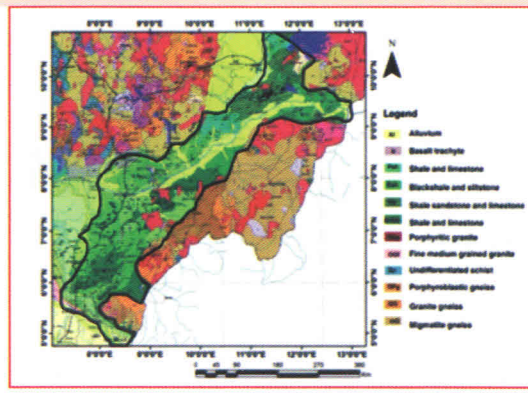




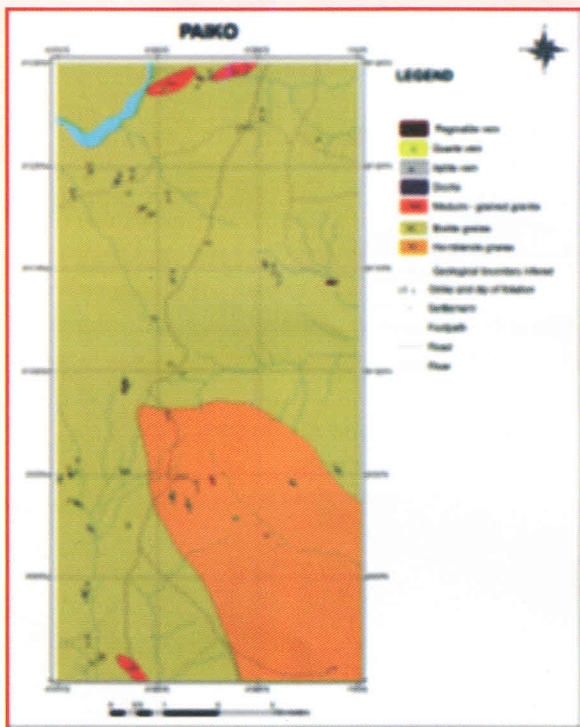
Geochemical map of a prospect element distribution in stream sediments and soil



Airborne and structural interpretation of the schist belt showing some controls on Pb-Au-Ag-Cu mineralization



Airborne and structural interpretation of the schist belt showing some controls on Pb-Au-Ag-Cu mineralization



Geological map of a prospect

### Available Data

- Geological maps.
- Geochemical maps and data
- Airborne data
- Reports occasional papers and Bulletins

### Investment opportunities abound in the following areas:

1. Applying for mineral titles with a view of wholly owning the mining rights
2. Partnering with existing title holders for detailed exploration as consultants and specialists
3. Partnering with existing title holders in joint venture agreement to explore, mine and market resources of areas of interest.
4. Legal transaction in commodities won in quarries and operations for export.

### Potential investors are invited to contact the following for further information:

[www.fmmsd.gov.ng](http://www.fmmsd.gov.ng)  
[www.ngsa-ng.org](http://www.ngsa-ng.org)  
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