

# Highlights on the Mineral Properties of Ezana Mining Development PLC October, 2014



# contents

1. Introduction
2. Regional Metallogeny of Northern Ethiopia
3. Gold and VMS prospects
4. Gold mine development
5. Iron ore exploration
6. Synergy
7. JV partnership
8. Community development
9. Conclusions

# 1.Introduction

## 1.1 Objective

- To give highlights on the major discoveries of orogenic gold and VMS mineralization and iron deposits

## 1.2 Company profile

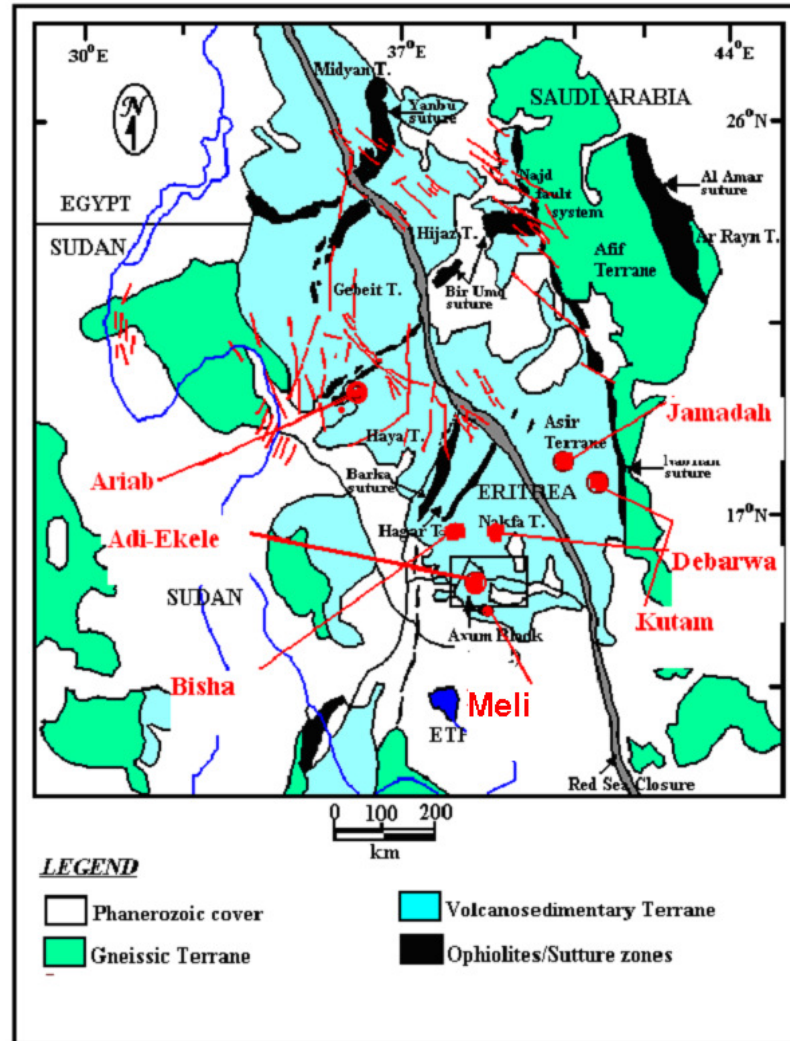
### **Ezana**

- an Indigenous company established in 1994 G.C
- a subsidiary of EFFORT which owns 15 companies
- staffed with 70 permanent and 20 contract employees
- owns the only accredited geochemical laboratory in Ethiopia

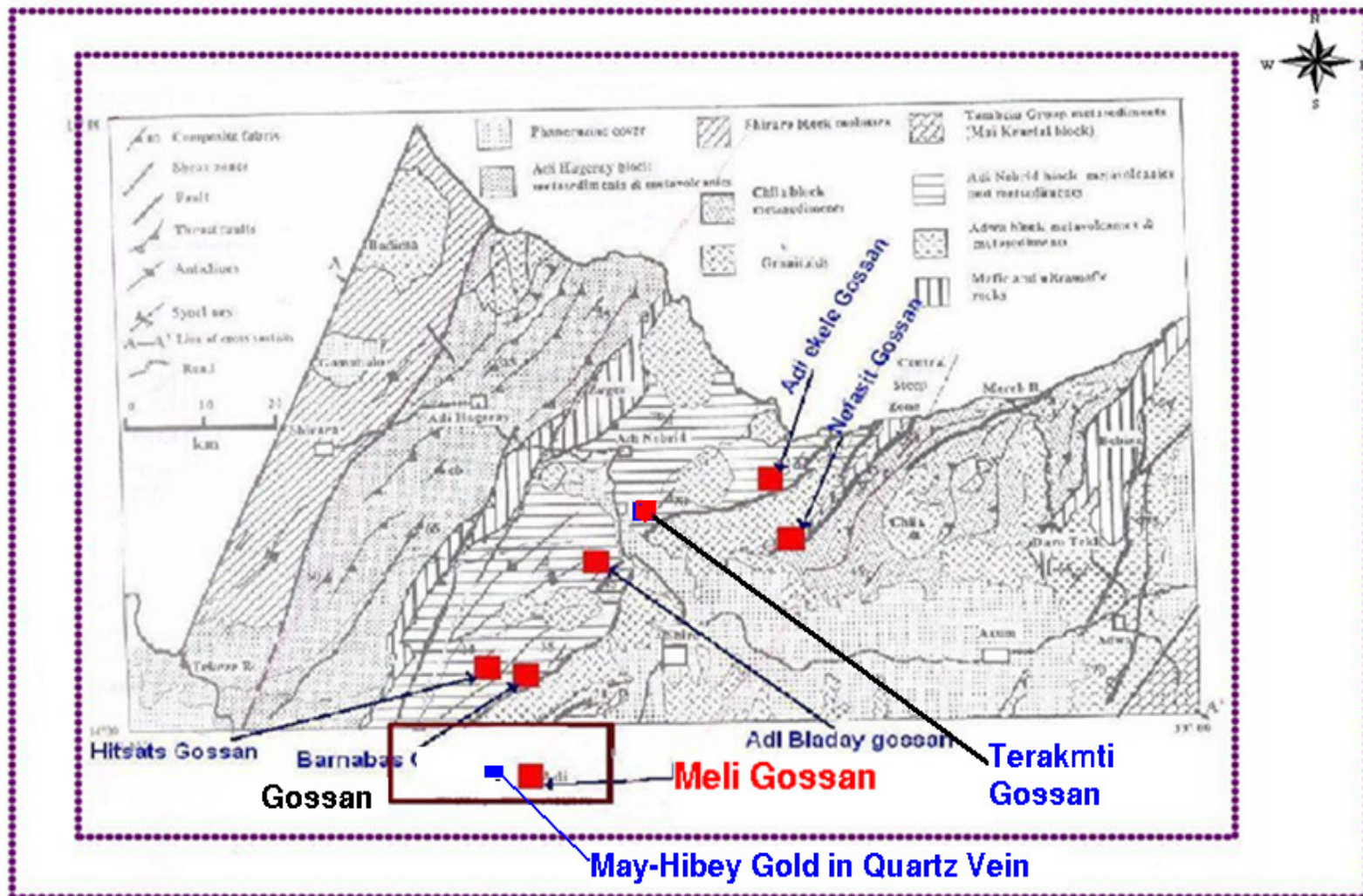
## 2. Regional Metallogeny of northern Ethiopia

- The Northern Ethiopia basement area being the southern extension of the ANS is with high potential for orogenic gold and VMS deposits
  - But it is also the least explored part
- The discoveries of gold bearing VMS deposits at Bisha, Debaruba, Embaderho in Eriteria and Terer, terakmiti, Adi-Bladai, Nefasit and Meli in Tigrai indicate the high prospectivity of the region
- The orogenic gold deposits in Koka-zara in Eriteria, Maetsobula and Maihibey in Tigrai (Ethiopia) also indicate the geological suitability of the region for economic gold deposits.

# Geology and some VMS deposits/occurrences of ANS



# Simplified geological map of Axum Map sheet and location of the auriferous gossans (after Taddesse 1997; A.Araya, 2008)



## 3. Gold and VMS prospects

### 3.1 Mineral properties

- Ezana owns gold and base metal exploration licenses over the northern Ethiopia basement rocks in Tigrai region

### 3.2 VMS prospects/occurrences

#### Terer VMS

Best RC drilling intersection indicated: 25m @2.4%Cu, 2.76% Zn, 0.71g/t Au, 35g/t Ag

- This the **first poly metallic massive sulphide discovery** in Ethiopia
- To maximize the resource Airborne Geophysical Survey was conducted over the Terer and surrounding areas
  - Conductive layers were outlined to be verified by ground surveys

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## Meli VMS(underling gold rich gossan)

- Test drill cores indicate :17.35m @1.51g/t Au, 37.1g/t Ag, 4.2%Cu, 0.7% Zn
- Geologically complex area, hence TEM geophysical survey is recommended to understand the subsurface trend and extension of the mineralization.



## Massive Sulphide on Meli area



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## AdiAbayo Gossan

- Channel samples indicated: 20m@1.8g/t including 1m@9.7 g/t
- It is under follow-up exploration
- Test drilling is recommended

### 3.4 Other base metals occurrences

- Abreha Atsibeha Zn-Cu-Ag prospect
- Tsahafiembra Cu prospect
- Both these prospects were transferred to JV with Shandong Mining(China)

## 3.3 Orogenic gold prospects

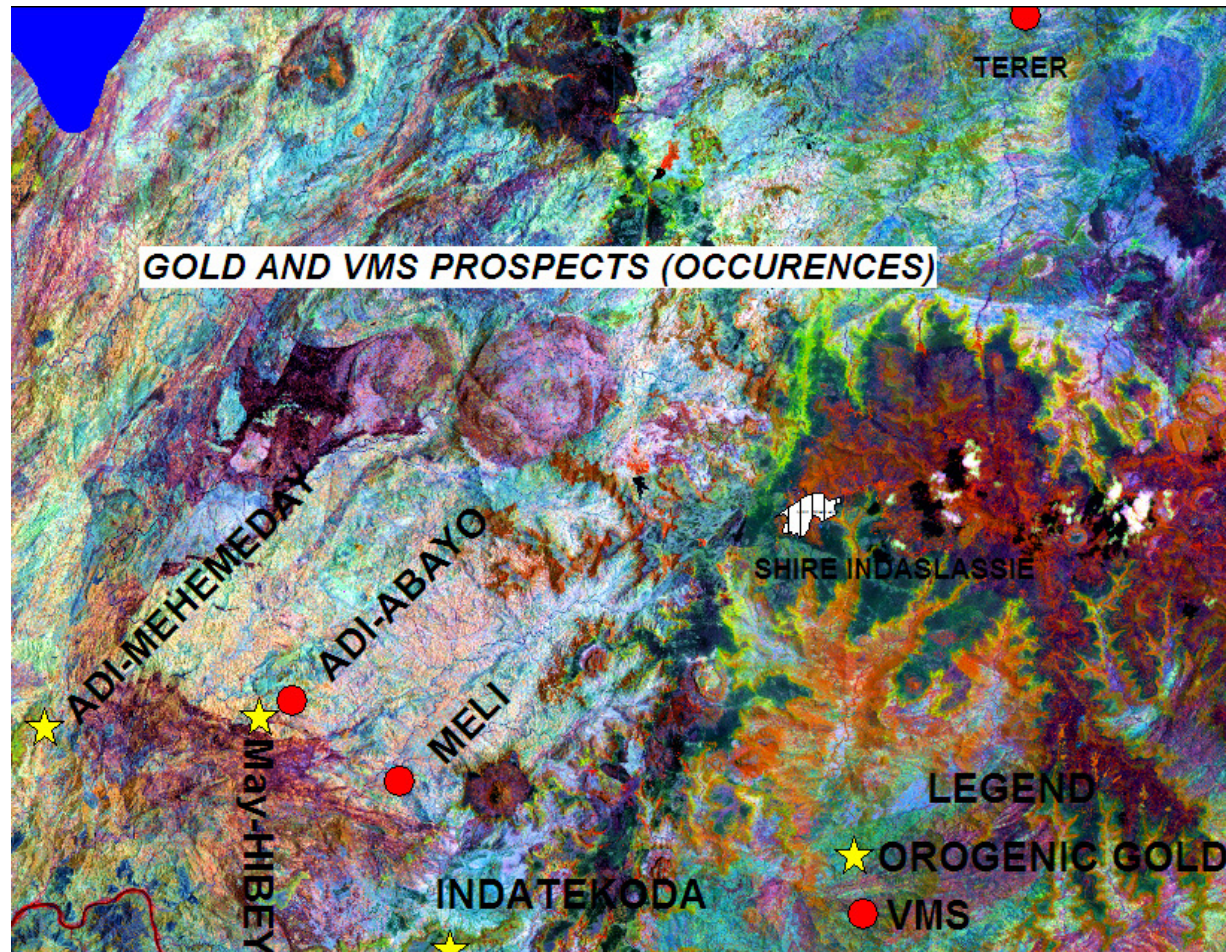
### Maihibey gold prospect

- Found in northwestern zone of Tigray region
- Located about 1150 km from Addis
- Best intersections of gold from core drilling are:
  - MH-DH-6 18.5m@9.69g/tAu including 139.69g/t/1m)
  - MH-DH-21: 21m@7.7g/tAu, 11.7m@1.6g/tAu and 20.5m@3.3g/t Au
  - MH-DH-33: 17m@6.8g/t Au
- Two main gold zones outlined
- Further drilling needed for resource evaluation and maximization

### Other gold prospect areas

- Adimehmeday: 19 g/t Au (from rock chip sample)
- Indatekoda: 8.33 g/t Au (from rock chip sample)

# Gold & VMS prospects



## 4. Gold Mine Development

### Meli gossan gold mining

- Gold rich oxide zone overlying VMS mineralization
- Gold reserve of 2.1 tones
- Procurement of Gold processing plant(CIP) is on progress
- Production plan is 840 tons ore/day(4.5kg)/day
- Infrastructures and utilities are nearly completed
- Residential and office buildings as well as tailings dam are completed
- Production is expected to commence after one year
- The Maihibey gold prospect can be potentially used as a gold resource feed to the Meli gold processing plant.

## 5. Iron Ore Exploration

- Indaselassie and Mentebteb iron deposits are Located in north western Tigrai about 1085 and 1185km from Addis respectively.
- The iron resource is 190 million ton ore with average grade of 30.5%Fe (low grade goethite-hematite ore).
- Feasibility study is on progress by Tata consulting engineers that could enable to mine the iron ore and establish iron and steel making plant.
- Currently pilot scale testing of the ore samples is on progress by an Indian laboratory, NML, to validate the bench scale test result.
- The feasibility is expected to be finalized till the end of 2014

## 6.Synergy

### Ezana

- trained an average of 15 students from Mekele university ever year with practical applications in mineral exploration and analytical laboratory
- is serving as a source of geo-science data for it has been working in the northern Ethiopia for more than 20 years.

## 7.JV partnership

- Ezana has been working jointly with two foreign companies Tigrai resources(Canadian) and Shandong (Chinese) in Tigrai, northern Ethiopia
- Recently, Ezana entered in to a JV agreement with the giant USA based mining company, Newmont Corporation

## 8. Community Development

To alleviate the water supply problem of Meli village

- one shallow bore hole drilled and one well rehabilitated and fitted with hand pumps
- The local miners are allowed to work in our prospect license areas even in primary gold workings to improve their household incomes.
- Ezana has prepared a plan in collaboration with Mines Agency of Tigray to assist the local artisanal gold miners in delineating placer gold deposits and providing technical training



## 9. Conclusions

- As an indigenous company, despite of its financial and technical constraints, it has managed to discover gold, base metals and iron ore deposits and occurrences and develop small scale gold mining
- With out owning a single mine Its involvement in assisting the local artisanal miners, community development activities reflects its commitment of discharging social responsibility
- due to the local capacity constraints, Ezana is jointly working with technically and financially capable foreign mining companies in order to boost the exploration works and ultimately mining.

Thank you