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GEOLOGICAL SURVEY OF ETHIOPIA



Special Forum 2: Forum of Mining Investment in Ethiopia GEOLOGY and MINERAL RESOURCES OF ETHIOPIA

Presented By Hundie Melka, GSE
at China Mining Conference 2016
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Outline of Presentation

- 1. Introduction**
- 2. Geo-Science data coverage**
- 3. Geology and Mineral Potential**
- 4. Conclusion**

I. Introduction

Location:- East Africa (latitude 3°N - 15°N
& longitude 33°E - 48°E)

Surface Area :- 1.14 M km²

Population :- over 85 million

Administration:- Federal System (9 regional states & 2 City Admin.)

Economy - Agricultural country with $>80\%$ of the population live on farming

Export-

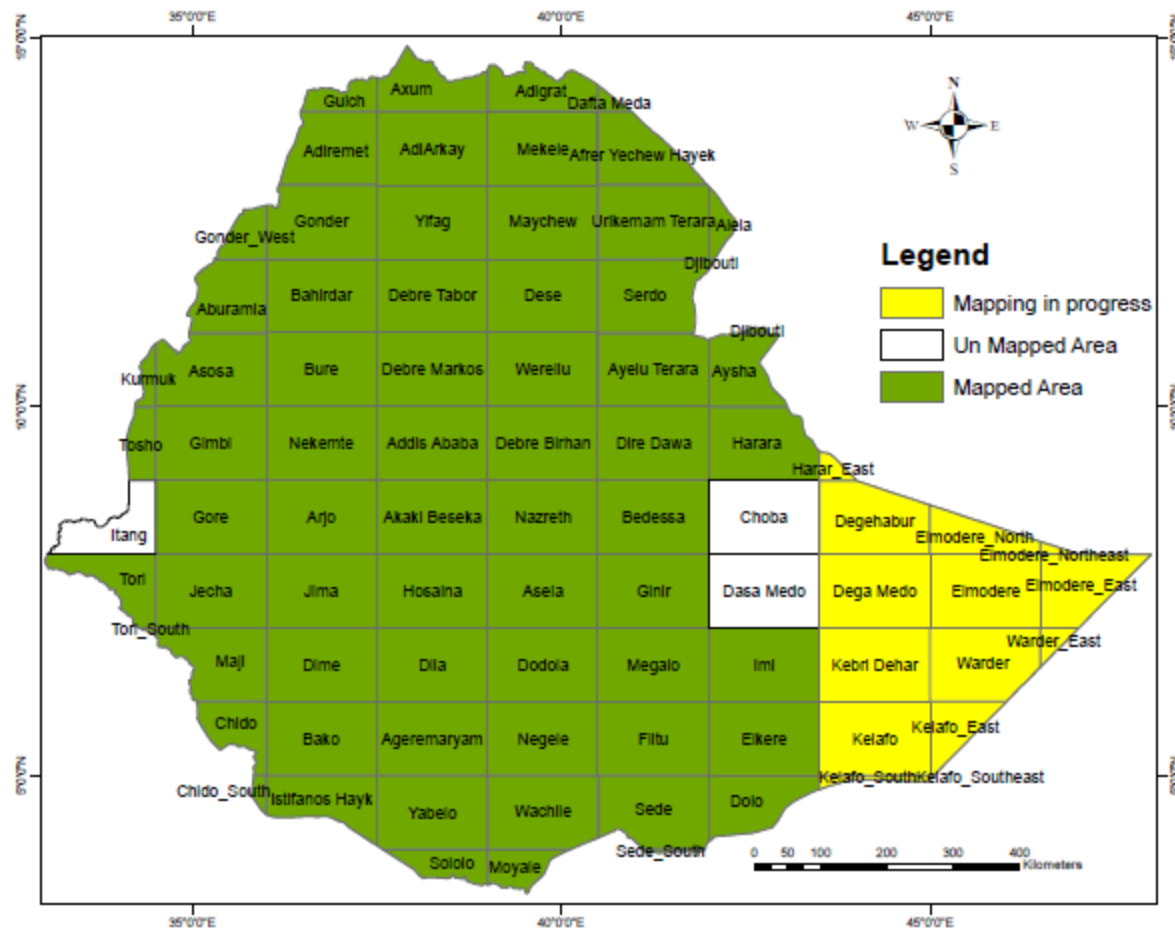
Agriculture- mainly coffee, oil seed, flower, leather etc.

Mining - gold, tantalite, gemstones & dimension stones

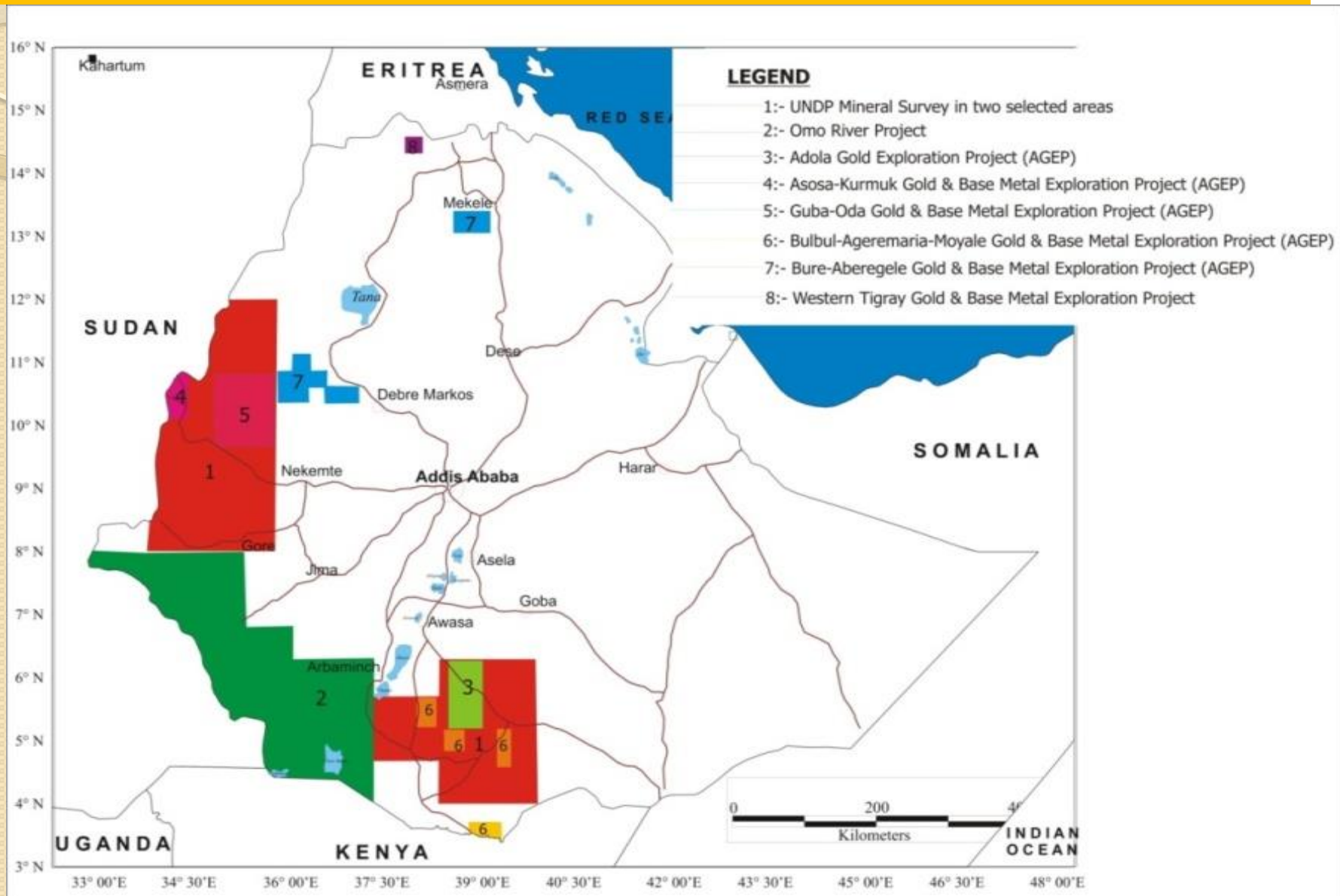


2. Geoscience Data Coverage

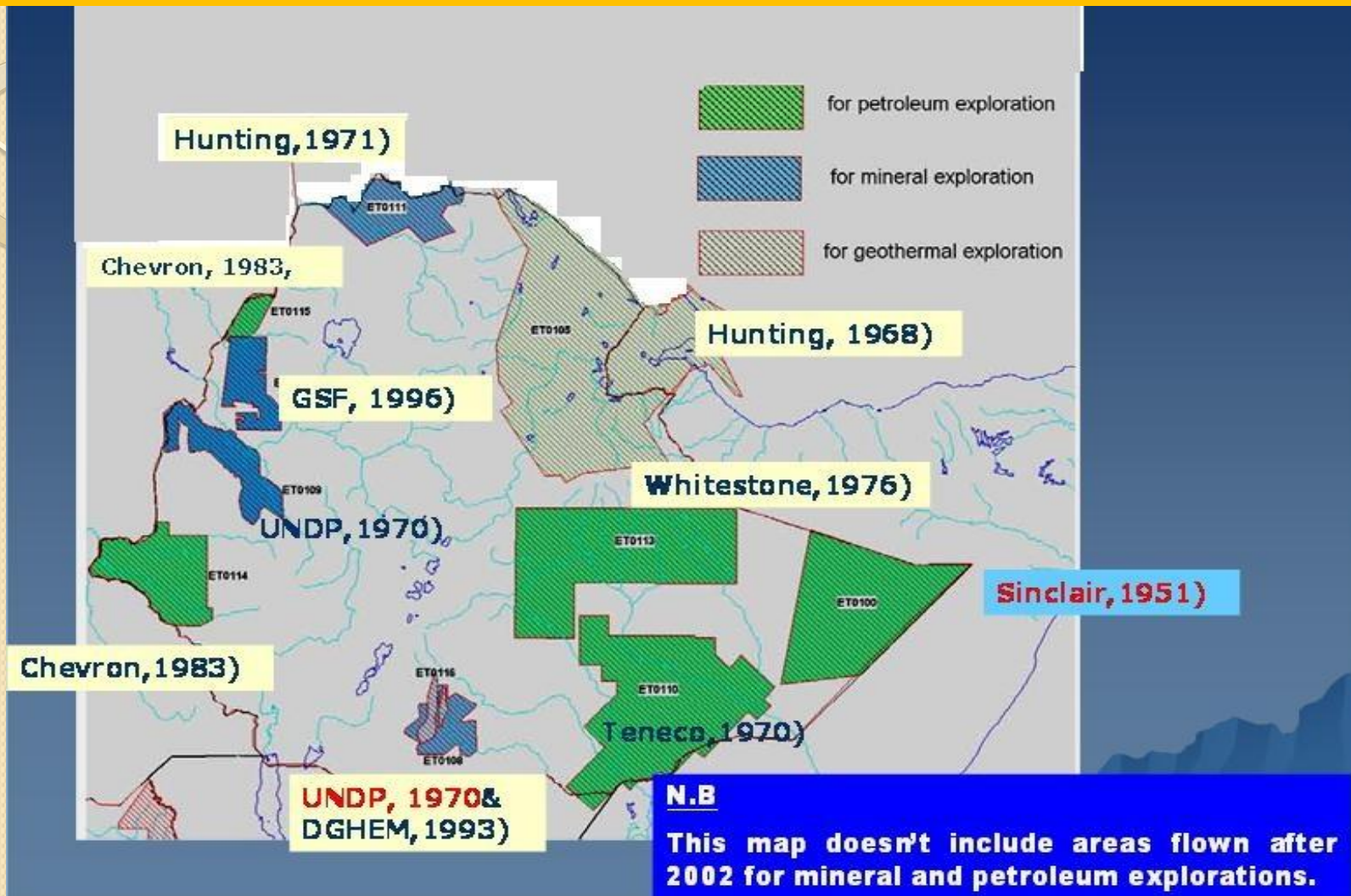
Regional Geological Map Coverage 1: 250,000 Scale
94 % of the land mass of Ethiopia



Geochemical Survey coverage is only 4% of the country



Airborne geophysical Survey Coverage is 30%



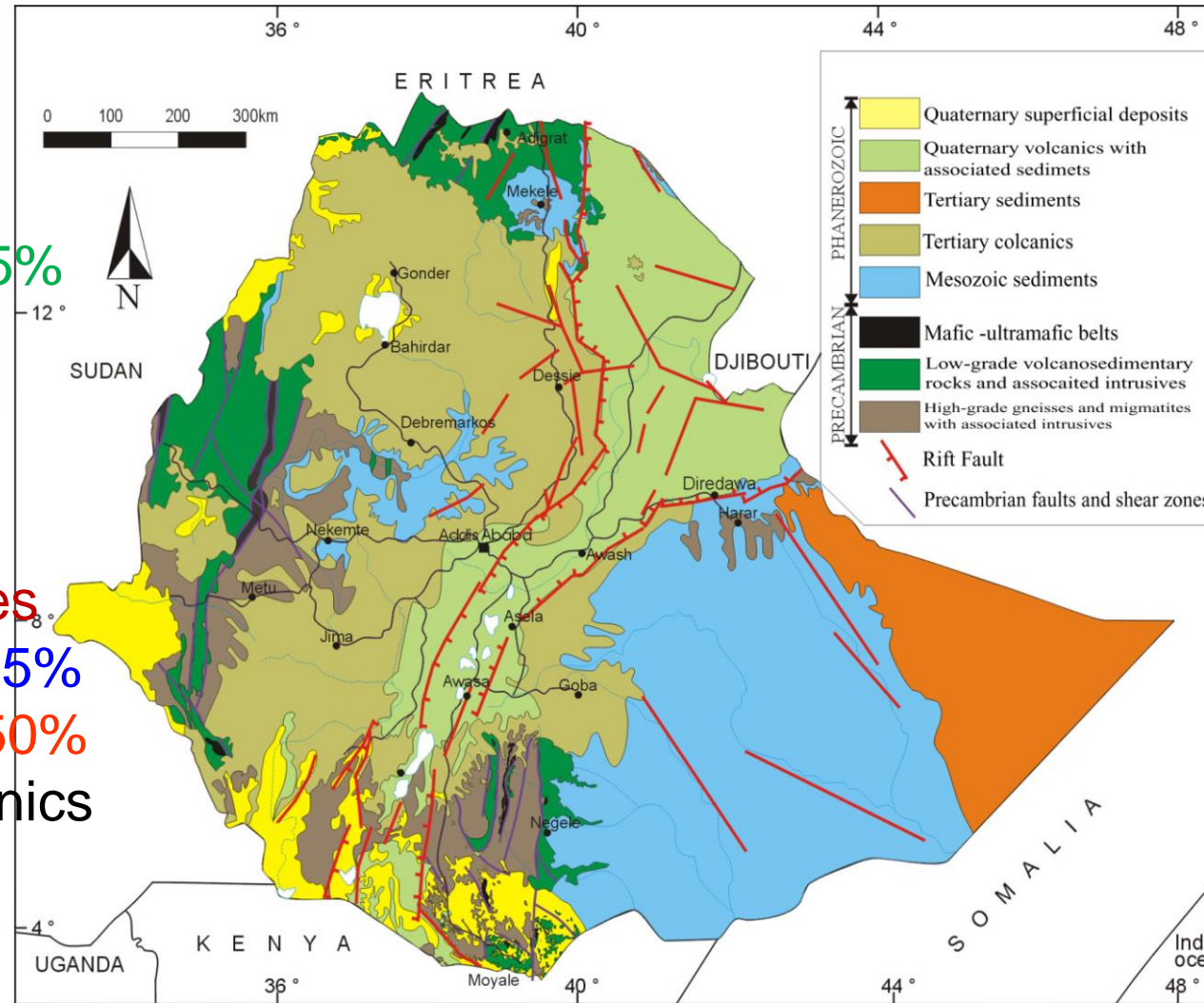
Regional Ground Gravity at 1:500,000 Scale – 100% of the country

3. Geology and Mineral Potential of Ethiopia

Geology

underlain by rocks of Precambrian to recent

- Precambrian covers 25% (low-grade volcano-sedimentary rocks, high grade rocks and mafic to felsic intrusives)
- Palaeozoic – few places
- Mesozoic sed. Rocks-25%
- Cenozoic volc. & sed. 50%
- Highland Tertiary volcanics (basalts)
- Tertiary as well as Quaternary volcanics & sediments of the rift valley



- Quaternary sediments & volcanics different parts of Ethiopia

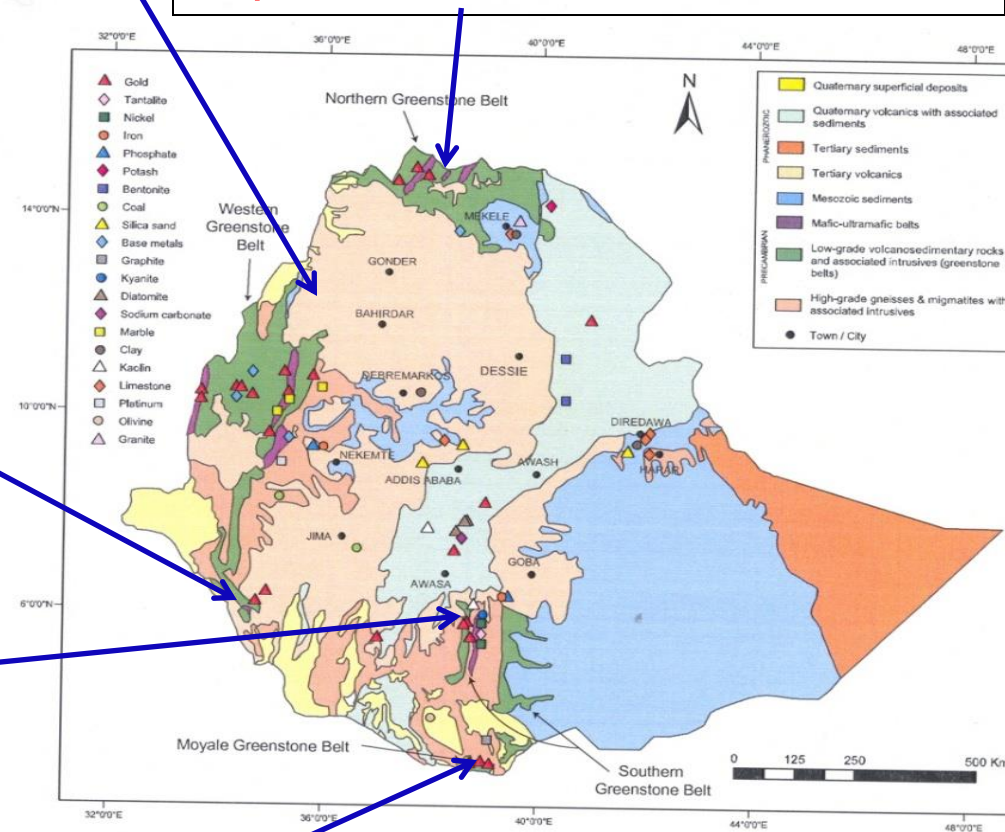
Mineral Potential

Western & SW Belt:-

- Tulu Kape, Dul, Metekel, Chamo, Oda- Godere Pri. Au deposits &
- Yubdo Platinum deposit
- Bikilal, Chago, Gordana, Sirba & Kore iron deposits & mineralization
- Keta & Abetselo Base metals Mineraliz.
- Fakusho Molybdenum mineraliz.
- Placer Gold deposits

Northern Belt:-

- Terkemti, Adi Zersenay, zager
- Primary gold mineralization
- Base Metals mineralization
- Placer gold occurrences & deposits



Southern Belt:- Adola & Moyale

- Lege –Dembi, Sakaro, Moyale, Dawa, Okote Primary Gold deposits & occur.
- Adola Nickel
- Kenticha Tanatalum
- Placer gold deposits
- Chromite mineralization

Industrial Minerals

Cement Raw Minerals:-

LST,Gyp,Cly,Pumice- M tones

Fertilizer Raw Minerals:-

Potash-billion tones & phosphate-181Mt

Ceramics Raw Minerals:-

Kaolin-20Mt, Feldspar-500000t,
Qtz-400000t

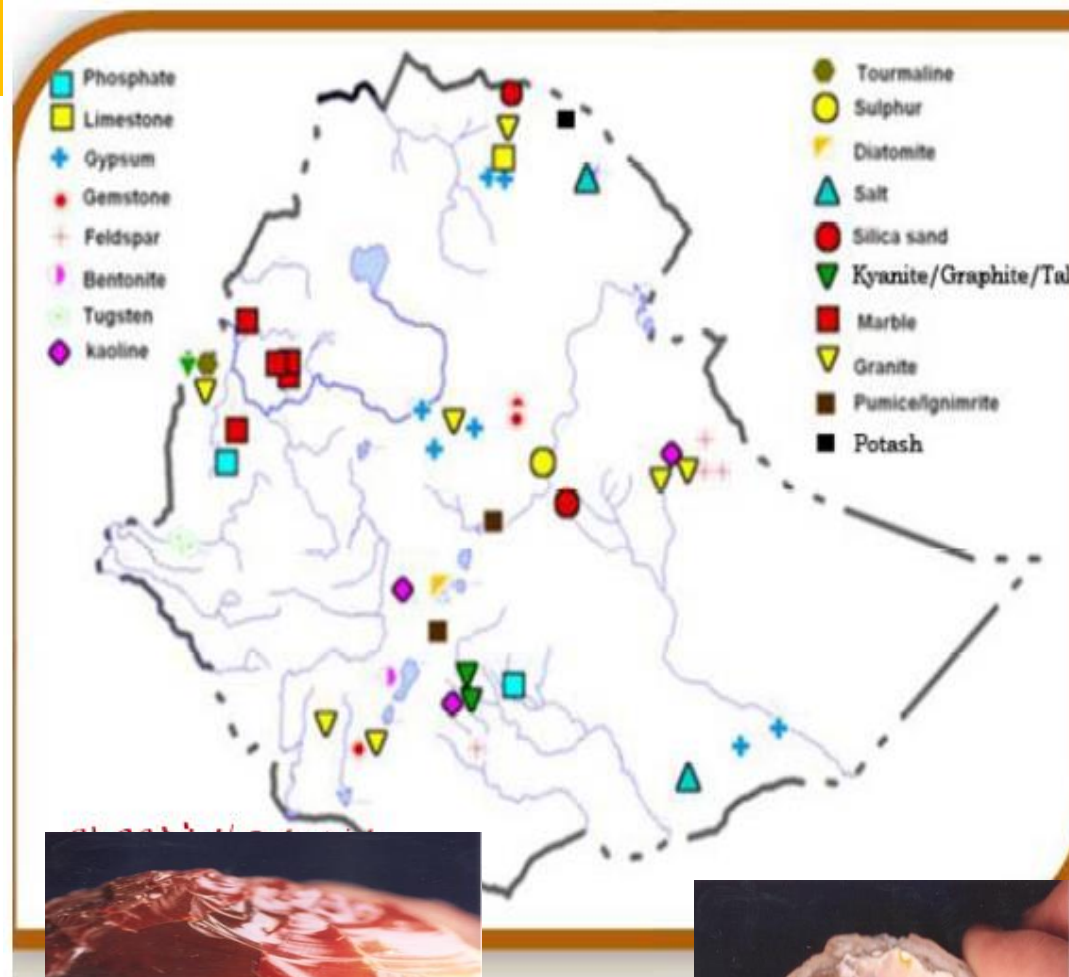
Glass Raw Minerals

Silica Sand-more than 3.4Mt,

Dimension Stones:-

Marble, Granite,Lst,SSt – in Mt

Diatomite- 120Mt,Bentonite-172Mt
Soda ash-460Mt,Salt-4.3Bt,
Graphit-460000t, Sulfur-6Mt, Talc-120000t,
kayanite -10Mt



Gemstones:-

Opal, Emerald, Sapphire, ruby
Peridot, Tourmaline, garnet

ENERGY MINERALS

A) Geothermal Potential

- In the Ethiopian Rift Valley
- More than 10,000MW for power generation
- More than 22 geothermal Fields identified
- Two of the Fields (Aluto Langano & Tendaho) are at detailed stage

THE ALUTO-LANGANO PILOT POWER PLANT (BINARY)

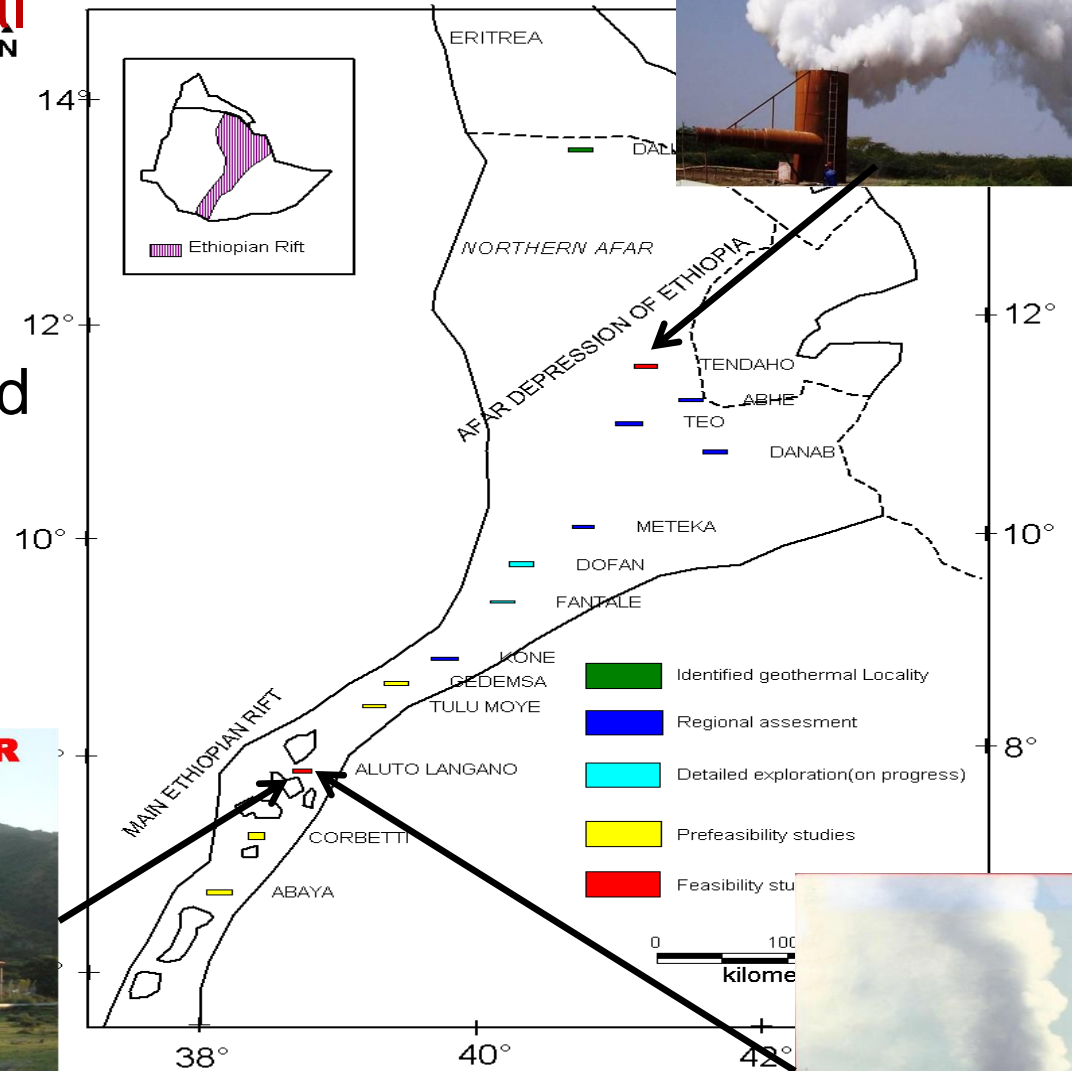


Fig.1 Location Map of the Geothermal Prospect Area in the Ethiopian Rift Valley

B) Coal – more than 500mt



Kunzela & Chilga

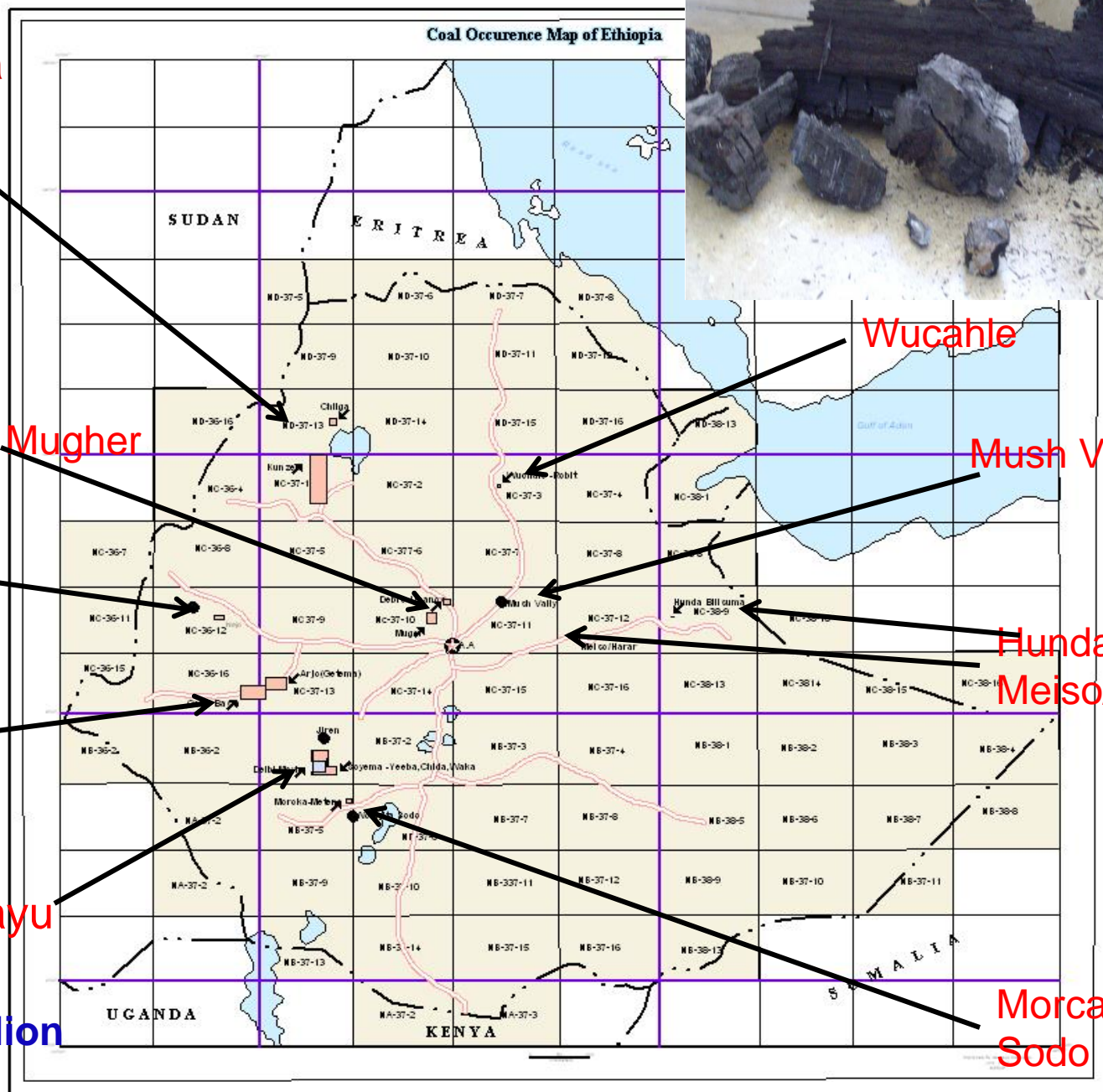
Debre Libanos & Mugher

Nejo

Geba, Arjo

Delbi, Moye, Yayu

Oil Shale – 1 billion tones



Wucahle

Mush Valley

Hunda Bilisuma,
Meiso/Harar

Morca, Walayta-
Sodo

C) Petroleum Potential



The Discovery to date is mainly for natural gas in the Ogaden basin estimated around 6TCF

Conclusion

The Geological Setup of Ethiopia is diverse and attractive :-

- ❑ For mineral exploration and development operations
- ❑ For Potential investor & research in the fields of geo-science
- ❑ The investment environment is also attractive
 - Competitive legal framework
 - Commitment of government to support investment
 - adequate infrastructure
 - Political stability

Potential Investors and researchers are welcome to operate for mutual benefit

Geological Survey of Ethiopia

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THANK YOU

