بسم الله الرحمن الرحيم

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URANIUM IN SUDAN

Presented by:

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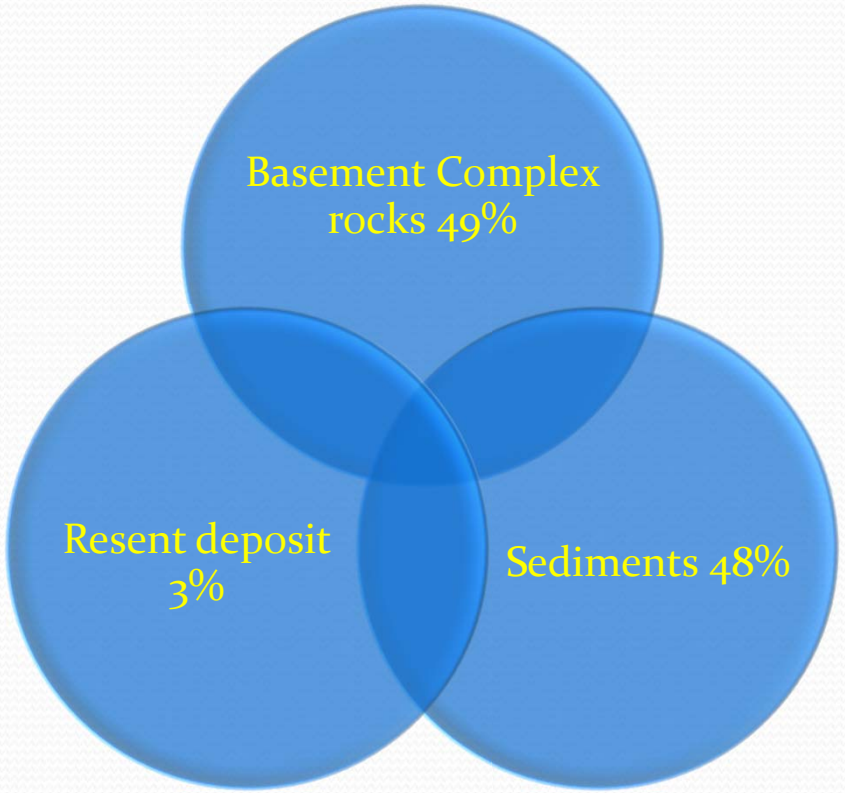
Background

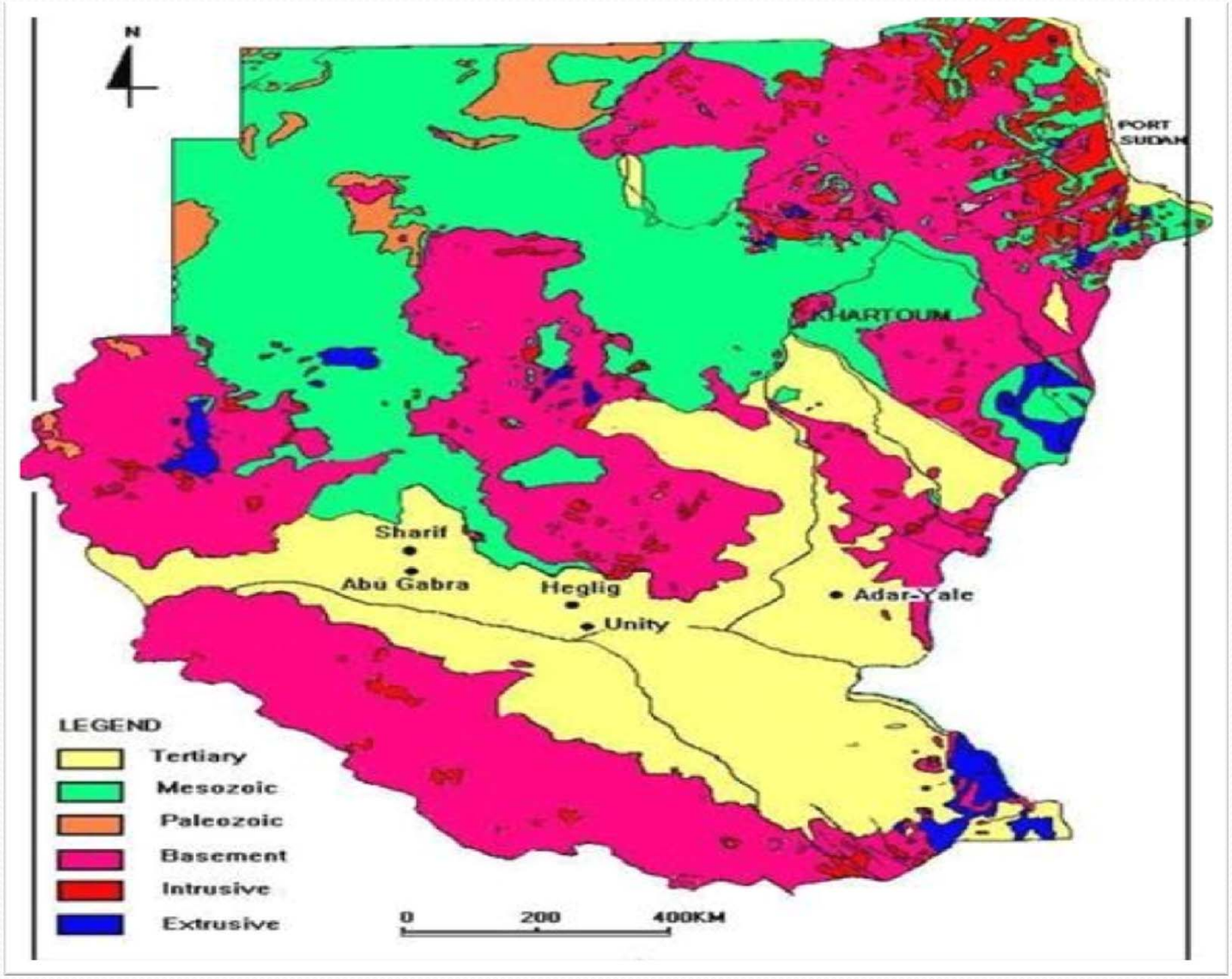
Sudan has a very unique geographical location in Africa. Bordering seven African countries, and also distinguished by its fertile land, heavy rains and the availability of water resources River Nile, Blue Nile, White Nile, and underground water.

Geology of Sudan

Surface area of Sudan is almost 1 Million square miles before the separation.

Geologically; the area is sub-divided between the following main rock categories: -




N
PORT SUDAN
KHARTOUM
Sharif
Abu Gabra
Heglig
Unity
Adar-Yale
LEGEND
Tertiary
Mesozoic
Paleozoic
Basement
Intrusive
Extrusive
0
200
400KM

Mineral resources

- Sudanese land is rich in mineral resources such as (gold, silver, chrome, gypsum. etc).

Gold mining

Uranium in Sudan

- Uranium have been discovered in the area of the Nuba Mountains and Hufrat EL Nahas in Darfur. By USA Company in 1977.
- Brinkman in 1986 discovered two types of phosphate deposits in Kurun and Uro areas in the center of eastern Nuba Mountains contain uranium
- The following slides display the regions of minerals presence in Sudan..

- The survey has resulted in discovery radioactive anomalies in a number of geological ranging from the pre-Cambrian basement complex to recent unconsolidated
- The following slides display mineralogy of well known areas in Sudan.

Red sea

Economic values:

1. Gold.
2. Manganese.
3. Copper.
4. Black Sands.
5. Garnet.
6. Talc.
7. Zinc

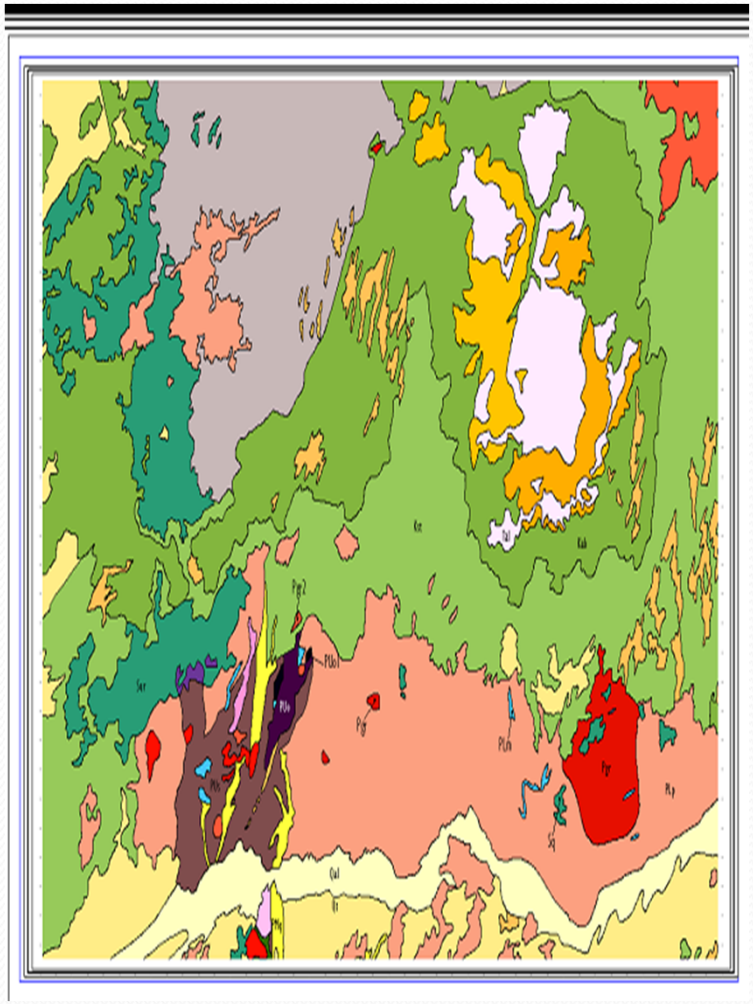
North Wadi Hawar

Economic values:

1. Bauxite.

2. Chromite

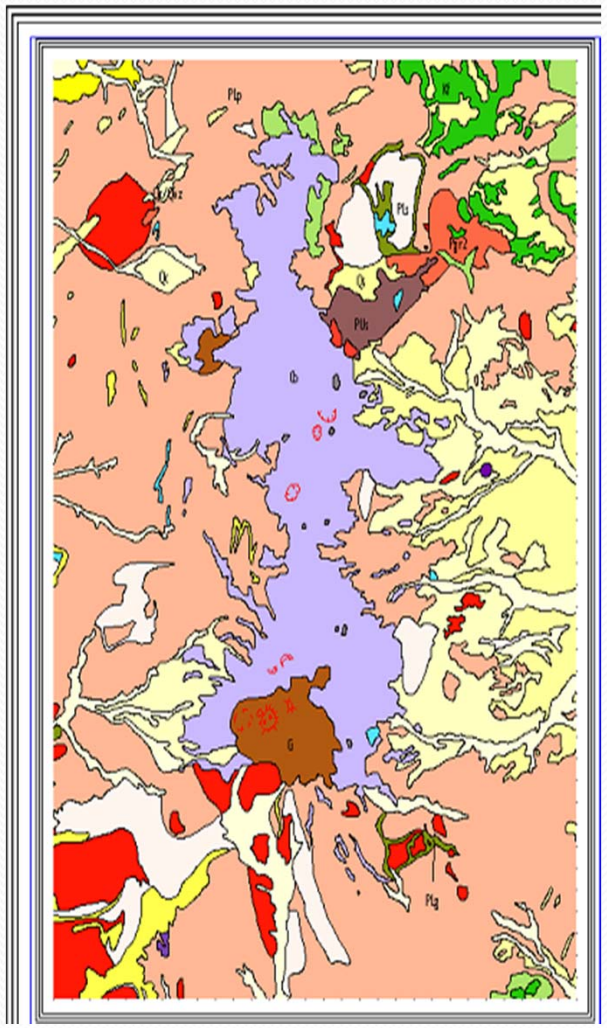
4. Archeological Sites



Jabal Marra
(Volcanic Rocks, Craters)

Economic values

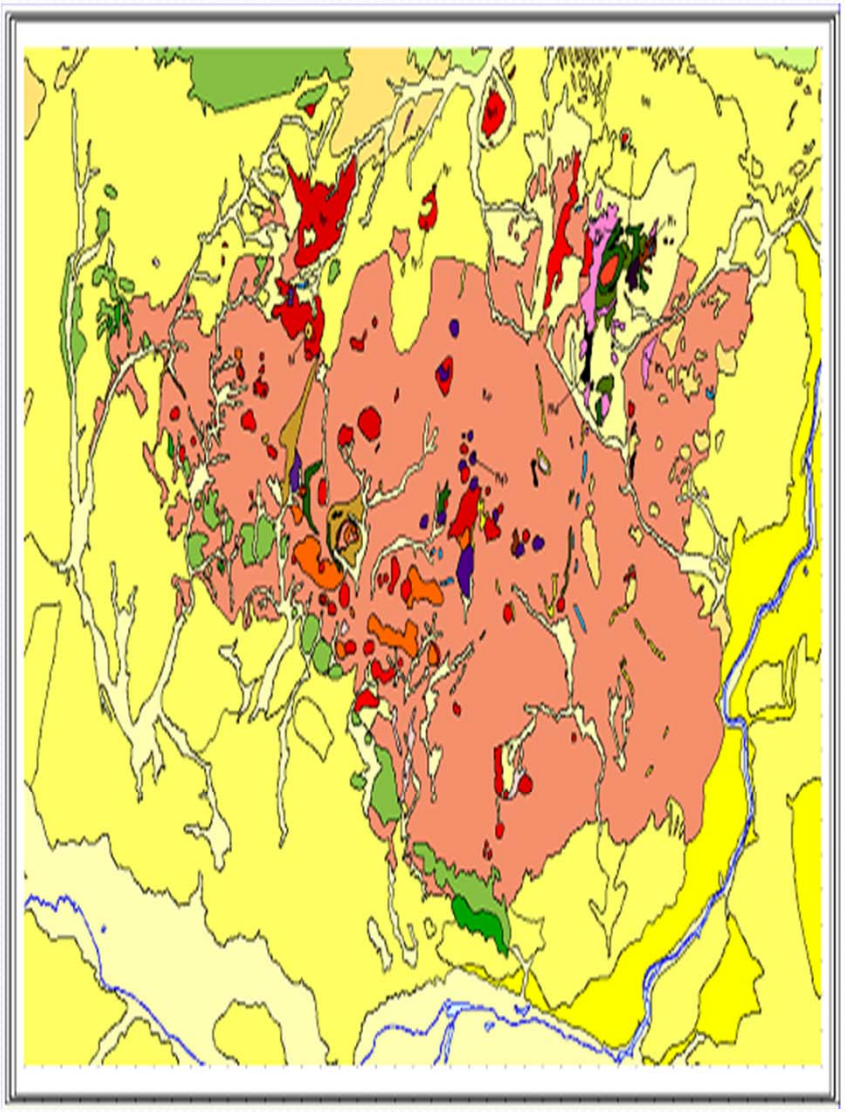
1. Base metals.
2. Garnet.
3. Kyanite.
4. Thermal Springs.
5. Sulphur.
6. Salt.



Nuba Mountains

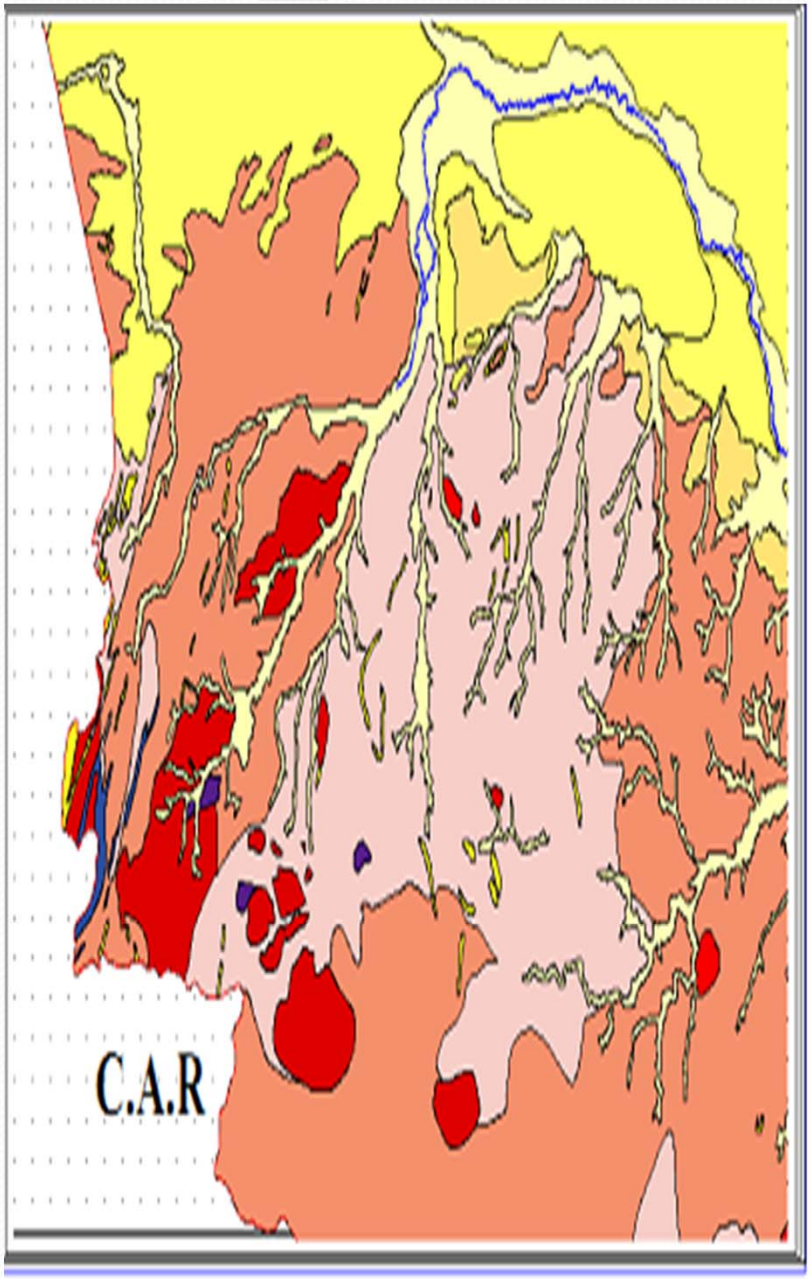
Economic values

1. Gold.
2. Iron.
3. Copper.
4. Graphite.
5. Talc.
6. Zinc.
7. Manganese
8. Chromium
9. **Uranium**
10. Marble



HOFRAT EN-NAHAS

1. Gold.
2. Copper.
3. **Uranium**
4. Precious stones



Instrumentation

Common instrument used in uranium and thorium measurement in Sudan

- Gamma spectrometry (Sodium iodide & HPGe)
- Alpha spectrometry
- Scintillation counters
- Radon meter
- XRF

Study carried out in Uranium and Thorium

Recently many studies have been conducted in different part of Sudan

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The natural radioactivity in phosphate deposits from Sudan

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Radiological and chemical assessment of Uro and Kurun rock phosphates

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Assessment of Committed Effective Dose due to consumption of Red Sea coral reef fishes collected from the local market (Sudan)

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TECHNICAL NOTE

ASSESSMENT OF TERRESTRIAL GAMMA RADIATION IN SUDAN

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TECHNICAL NOTE

ASSESSMENT OF GAMMA DOSE RATE OVER A SUSPECTED URANIUM MINERALISATION AREA OF JEBEL MUN, WESTERN SUDAN

A. K. Sam, D. A. Sirelkhatim, R. K. Hassona, R. E. Hassan, E. Hag Musa and M. M. O. Ahmed
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Uranium and thorium isotopes in some red sea sediments

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Radium-226 Uptake by Vegetation Grown in Western Sudan

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Distribution of some natural and anthropogenic radionuclides in Sudanese harbour sediments

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Investigation of natural radioactivity levels in water around Kadugli, Sudan

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TECHNICAL NOTES

ASSESSMENT OF ABSORBED DOSE RATE IN AIR OVER PLOWED ARABLE LANDS IN SINNAR STATE, CENTRAL SUDAN

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GIS PREDICTIVE MAPPING OF TERRESTRIAL GAMMA RADIATION IN THE NORTHERN STATE, SUDAN

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Conclusion

- The result of the most studies has revealed without doubt that the Uranium and Thorium concentration is lower than world wide data
- The mass concentration of uranium in the study areas is no of potential economic significance


THANK YOU!