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**Extractive Industries and Sustainable Job Creation**

**Minerals potential and resources in Sudan**

By

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The views expressed are those of the author and do not necessarily reflect  
the views of UNCTAD.



**Republic of Sudan**  
**Ministry of Minerals**  
**Geological Research Authority of Sudan (GRAS)**

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**in Sudan**

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**Cubic Globe**



# Outlines

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- **Introduction**
- **General Geology**
- **Mineral Potentials**
- **Investments**
- **The Mineral wealth of the Sudan**
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- **Small Scale Mining**
  
- **Advantages of the Sudanese mining Sector**



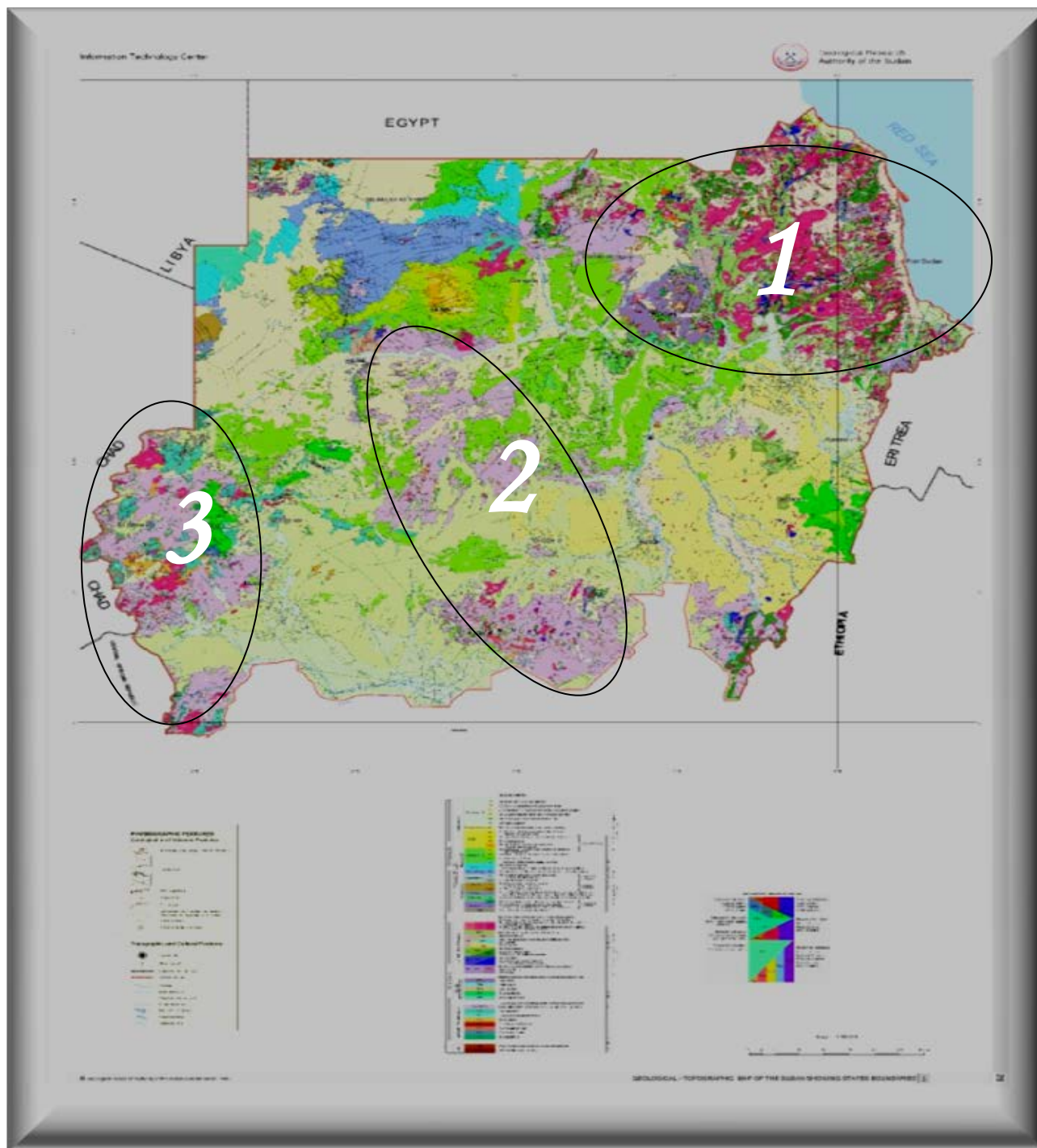
# Introduction



- Sudan is the largest country in Africa, covering about two millions squared Km. It falls between latitudes 4-22 N and longitudes 22-38 E. It is inhabited by 40 millions population.
- With such big area and diversified geology which merges across the boundaries between nine countries Sudan has a huge mineral potential yet to be evaluated and developed.
- The Ministry of Minerals, through the Geological Researches Authority of the Sudan (GRAS), the State Geological Survey, is the guardian of all metals and minerals within the lands, rivers and the continental shelf of the Sudan.
- The over-riding function of the Ministry is to organize, promote and develop the mining sector and the mineral resources of the Sudan in order to enhance the national economy and contribute in the sustainable development.
- This is generally achieved through the identification and systematic inventory of the available resources as a result of geological mapping, geophysical and geochemical exploration programs. It is also engaged in co-operation with investors to assist in, and enhance, the development of identified mineral prospects. On this respect, GRAS undertakes exploration work in co-operation with international agencies.



The geology of the Sudan is dominated by the basement complex formations that cover more than 50% of its area.



**1-Late-Precambrian  
juvenile basement.**

**2-Middle Precambrian  
basement**

**3-Early Proterozoic  
to Archean rock  
units**



# Mineral Potential of Sudan

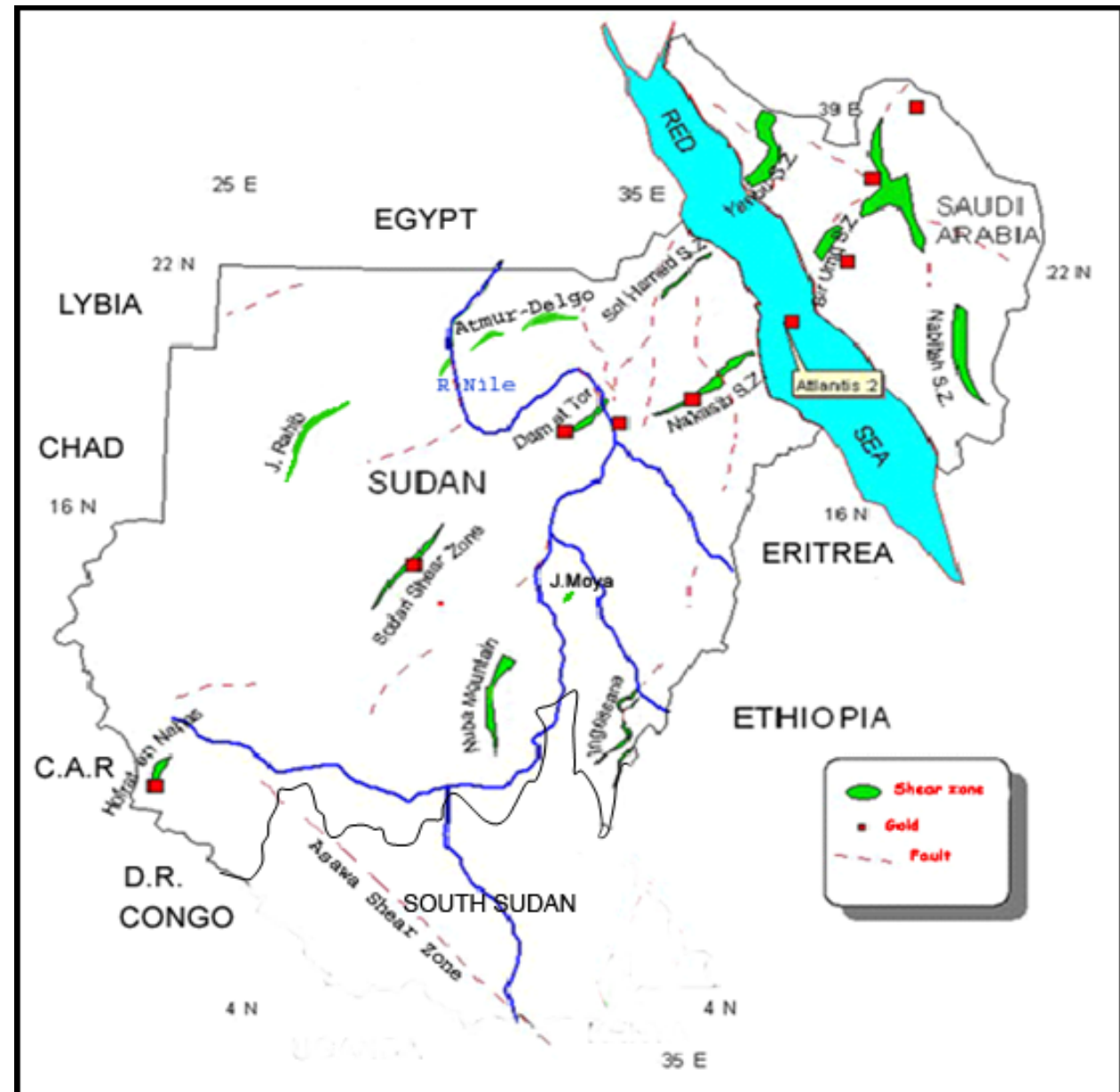
✓ Sudan has a long history and a big heritage of Mining culture which go back to three thousand years when Nubians extracted gold and base metals and smelted iron to make water wells.

✓ Mineral resources have not been fully explored as of yet but include:

petroleum, natural gas, gold, silver, gold, silver, chrome, asbestos, manganese, gypsum, mica, zinc, iron, lead, uranium, copper, kaolin, cobalt, granite, nickel and tin.



The Pan-African terrains dominate the geology of the country. These terrains were found to host most of the economically valuable mineral deposits, where huge mineral potentials are yet to be discovered and exploited.



**Major Pan-African Structures in the Nubian – Arabian Shield and the foreland**



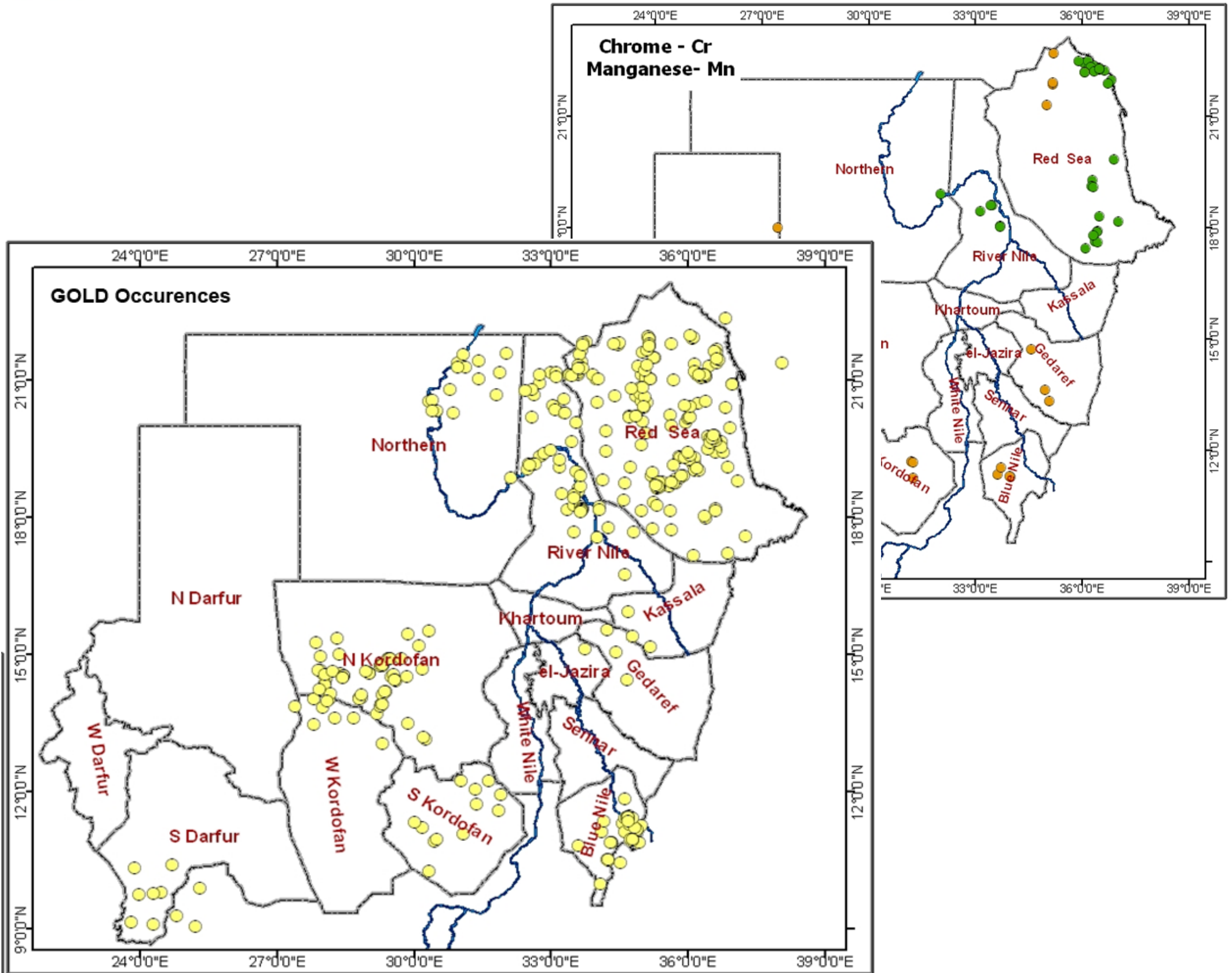
# The Mineral wealth of the Sudan



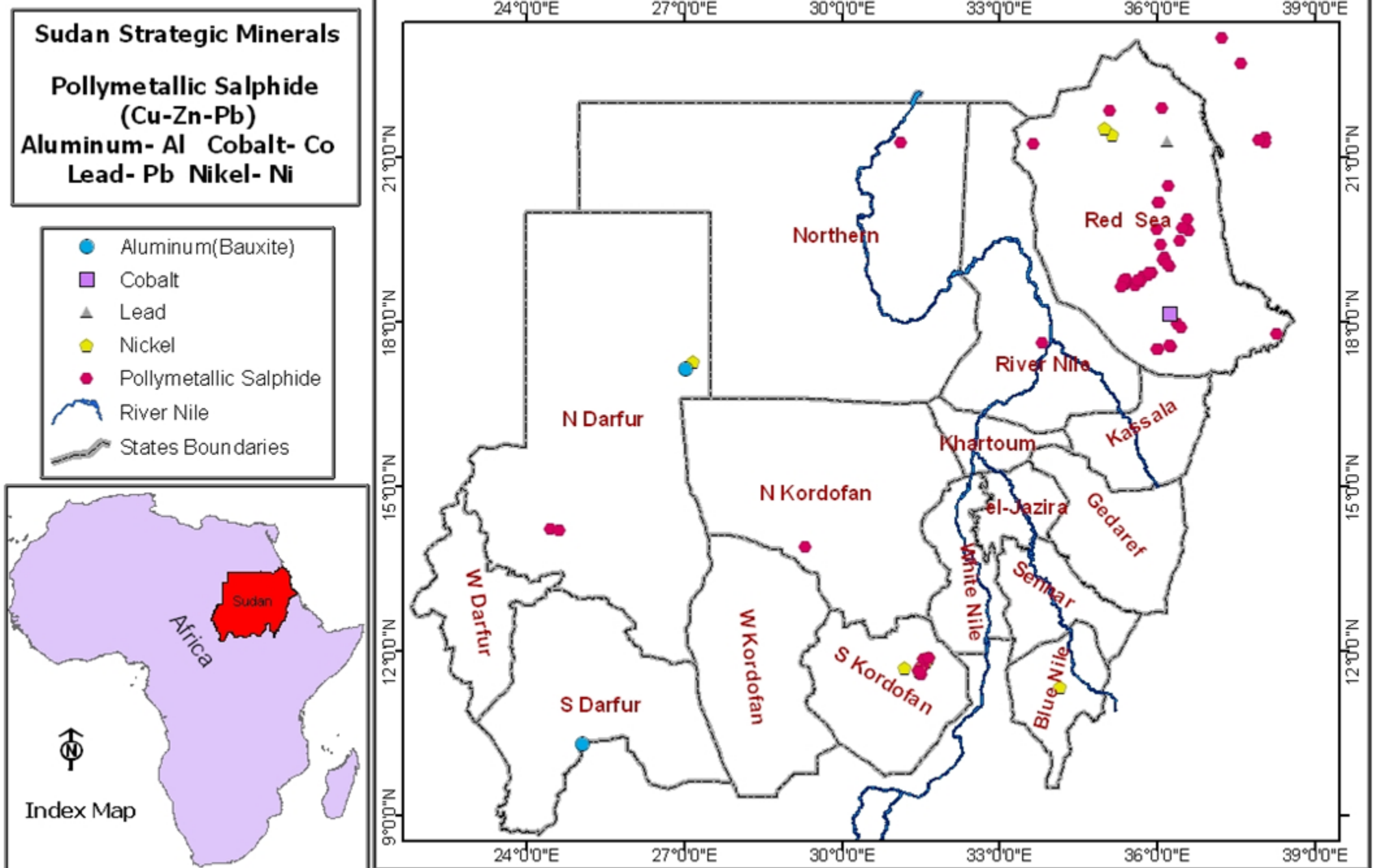
- ❖ **Massive sulphide deposits [VMS & SEDEX] of Cu, Zn, Au, Ag, Fe, Mn, together with Cr, PGM, magnesite, talc, Ni, Ba, Mn, ± As, Bi, Cd, Te, Co & other trace elements.**
- ❖ **Precious metals: Au, Ag, Pt.**
- ❖ **Tin, tungsten, zirconium Aluminum.**
- ❖ **Sedimentary & Igneous iron formations.**
- ❖ **Rare Earth Elements.**
- ❖ **Radio-Active elements, black sands.**
- ❖ **Industrial minerals: fluorite, white sands. Industrial minerals & rocks include:  
Pozolana, limestone, marble, gypsum, mica, kaolin, feldspar, kyanite, bauxite, wollastonite, graphite, potassium salts and barite.**
- ❖ **Agro minerals like phosphate, potash, gypsum, zeolite, vermiculite.**
- ❖ **Gem stones.**
- ❖ **Building materials [igneous, metamorphic & sedimentary].**
- ❖ **Dimension stones.**
- ❖ **Basalts**



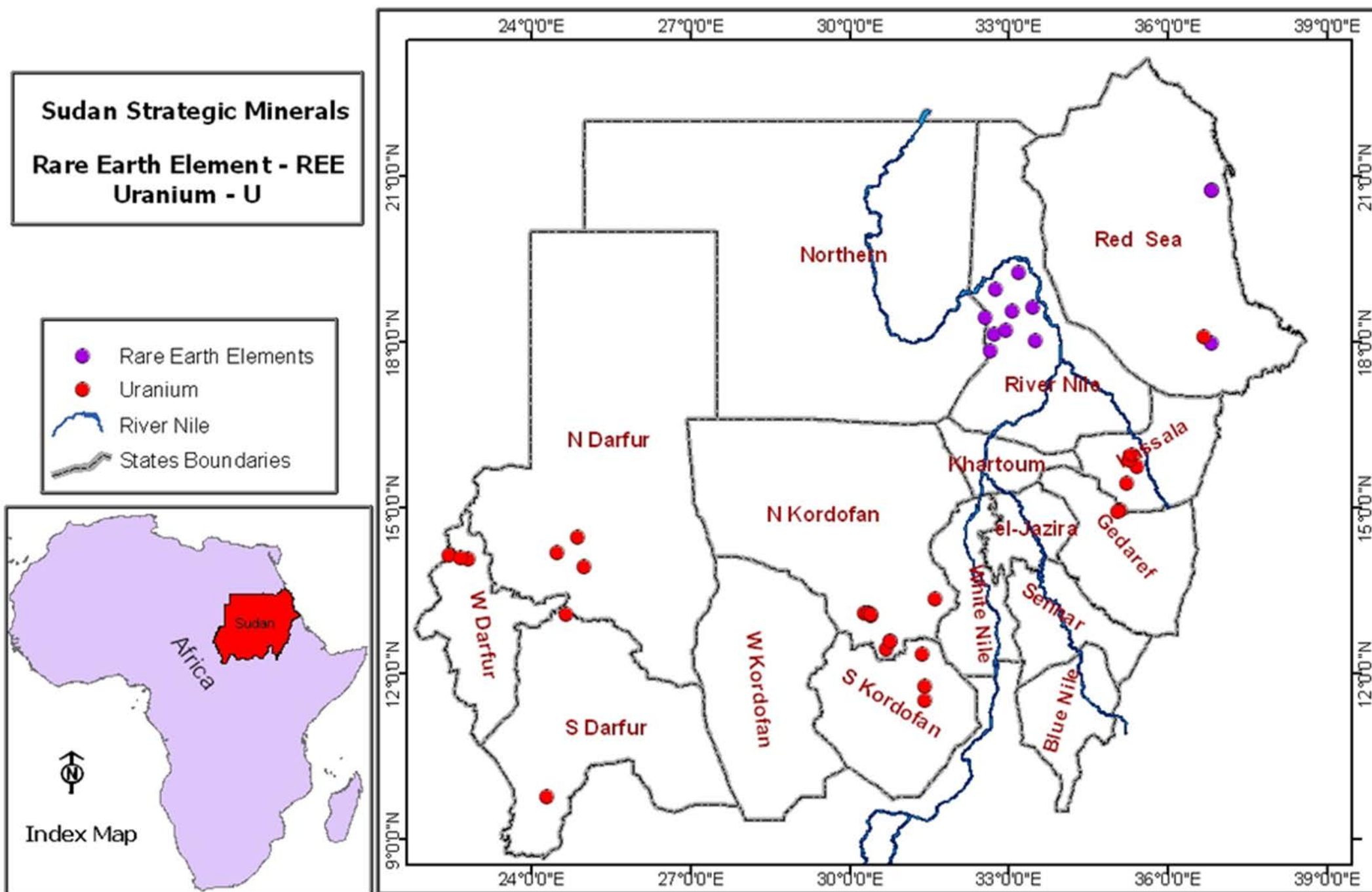
# The Mineral wealth of the Sudan (cont.)



# The Mineral wealth of the Sudan (cont.)



# The Mineral wealth of the Sudan (cont.)





- ✓ Now there are 14 (4 underway) producing companies [Au - Ag], Fe; [out of 170] companies.
- ✓ 15 companies are approaching production [Au –Ag, Cu – Zn, Fe].
- ✓ The rest companies are in various exploration stages [Au – Ag, Cu – Zn, Fe].
- ✓ More than 200 blocks are under preparation.







# Ariab Mining Company



- Is one of the most successful projects as a Franco-Sudanese joint venture. It provided important information in the field of mining.
- The company used heap-leaching processes to treat the friable ore as open-sky mining.
- The ore is encountered in friable mother rocks and is easy to process as open mining operations.
- **Produced more than 80 T/Au, and more than 140 Tones Au still to be extracted.**
- **The company has a minable reserve of 1.3 Million Tones of Cu, + 18 T/Au, 700,000 T/Zn, and silver.**





## Managem Mining Company



- **Three concession areas**
- **Proved 66 Tones of Au (in one of important 5 sites in one concession).**
- **The company is heading for 350 Tones of Au & Associated metals.**



### **Other examples of gold producing companies:**

Omdurman Mining Company, Delgo Minerals Company, El Nawaty Company, Hagagia (Poly Red Sea) Gold Mining Co. Ltd. etc ...

**Others produce Cr, Fe, Mn, Gypsum, Fe, Sands, etc.**

- ❑ More than 350 small scale mining leases have already been granted for:

**Chromite, alluvial gold, manganese, iron, talc, gypsum, feldspar, fluorite, white sands, mica, salt, building materials.**

- ❑ Investment is open for more leases in addition to:

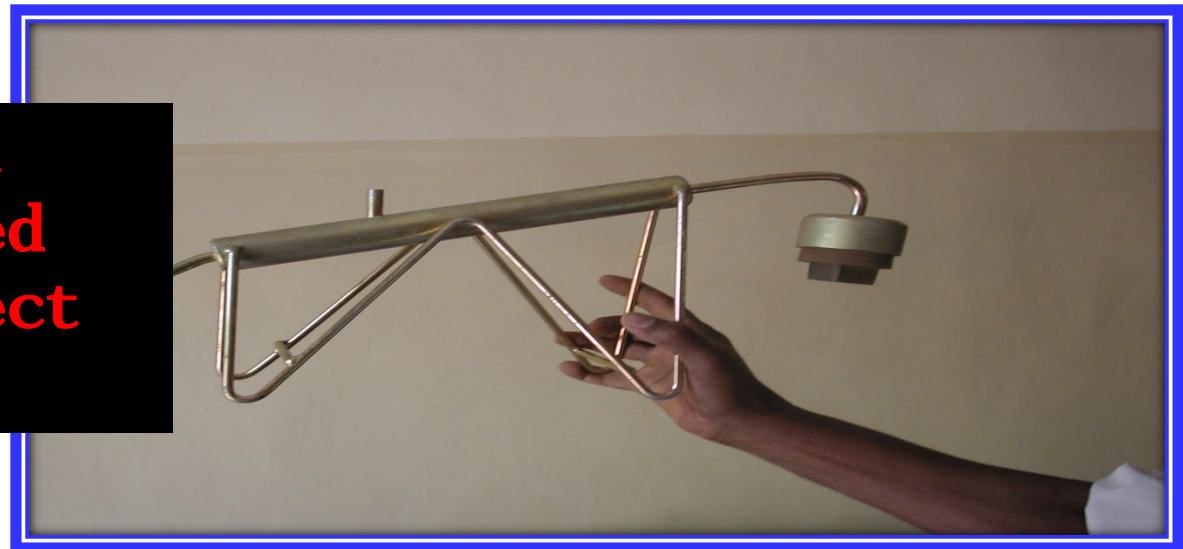
**Dimension stones [granite, marble, lime stone, sand stone, basalts and metamorphic rocks.**





- Organization, upgrading & legalization.
- Raising the awareness of the negative impacts.
- Introducing safety and health assistance.
- Managing the practice under appropriate conditions.
- Observing the environmental impact of the activities.
- Minimizing the use of mercury till completely irradiating its use.
- Introducing water mills within the system.

**An Hg close-circle retort has locally been developed in order to minimize direct exposure.**







## Mineral Production

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- **The annual production mounts as follows:**
  1. **Gold: about 50 to 70 tones/year.**
  2. **Chromite: about 100,000 tones/year.**
  3. **Copper: more than 50 tones /year.**
  4. **Iron: about 70,000/year.**
  5. **Gypsum: more than 100,000 tones/year.**
  6. **Salt: more than 100,000 tones/year.**
  7. **Marble: about 100,000 tones/year.**
  8. **Dimension stones: more than 50,000 tones/year.**
  9. **In addition to variable amounts of Talc, kaoline, flourite, feldspar, white sand and building materials.**



## Our strategy

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**The strategy of the Ministry of Minerals of the Sudan is embarked on:**

- 1. Easing concession's acquisition procedures.**
- 2. Transparency.**
- 3. Equality.**
- 4. Data acquisition and**
- 5. A high level concession agreement, to all mineral commodities of the country.**



## Investment In The Mining Services

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- A broad spectrum of activities that are considered to form profitable investment opportunities in Sudan. These are:
  - Exploration, mineral evaluation, mining development and mine design.
  - Investment in the field of providing services to companies (like drilling, feasibility studies, mineral processing & equipments etc.).
  - Investment in the Field of Laboratory-Related Industries.
  - Investment in Training.
  - The Establishment of Smelters (copper smelter - steel -aluminum – chrome - iron), and ferrochrome industry.
  - Fields of investment are open for all types of mineral industry added values.



- ❑ Also, the Ministry of Minerals encourages the financing firms and organizations to invest in financing mining and mining industry.
- ❑ Investments are also open for:
- ❑ Updating the Geological Map of the Sudan.
- ❑ Establishing a new metallogenic map of the Sudan.
- ❑ Completion of the geophysical maps of the Sudan.
- ❑ Evaluation of the mineral resources of the whole country.





## Concession Agreement

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✓ **The concession agreement is based on the Mineral Development Act 2015 and Regulations. It covers the technical , financial, environmental and the social aspects. Investors are entitled to privileges and provisions of the Investment Encouragement Act 2015 and Amendments. Investors recover all exploration and development costs.**



# The Future of Mining in Sudan

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- **Widening the arena of prospecting for all metals and minerals.**
- **Promotion for all minerals industrial, agricultural and building materials.**
- **Boost the cement industry for export.**
- **Study and evaluate the white sands for creating glass industry.**
- **Promotion of the clay minerals for the bentonite, ceramic, and isolators industries.**
- **Increasing the geo-engineering works for upgrading the infrastructures.**



## Road Map for unlimited investments

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- **Design a practical investment strategy.**
- **Improving the concession agreement towards clear rights and duties.**
- **Improving the one window-shot for quicker handling.**
- **Provide encouraging Increasing the prospecting and exploration fund.**
- **Upgrading the mineral industry.**
- **investment attractive steps.**
- **Strengthening the international relationships.**
- **Encouraging the private sector to be more involved in the mineral industry.**
- **Train the national technicians to support and manage the sector.**



## Road Map for unlimited investments *(cont.)*

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- **Train the national technicians to support and manage the sector.**
- **These should lead to:**
  - 1- diversification of income to enlarge the base of national economy.**
  - 2- enable more exports of minerals and their industrial products.**
  - 3- establish a reliable mining code.**
  - 4- ideal exploitation, management and governance of the non-renewable resources.**
  - of the country's mineral wealth.**
  - 5- development of the mining rural areas.**
  - 6- building intelligent cooperation for technology transfer.**
  - 7- Attract more capital and investments in the mining field.**
  - 8- Develop and modernize the mining areas in order to minimize the rush towards big cities.**
  - 9- Adopt new technologies and Train the minors to upgrade production and hence competition.**





## Advantages of the Sudanese mining Sector

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1. The government established a special ministry.
2. Stability of regime and policies.
3. Application of free market system.
4. Updating of laws and regulations and easing of procedures.
5. Justice, equality, transparency, guarantee of both individual and special ownership.
6. Availability of information to all.
7. Encouraging researches at all levels.
8. Infrastructure is developing, and the environment of investment is encouraging.



# Forth Coming Events

Sudan International Mining  
Business Forum @Exhibition  
February/2016

<http://www.sudansummit.com/>

<http://www.VALIANT.com/>

