GEOLOGICAL INSTITUTE OF ANGOLA

Critical Mineral Potential and Perspective Target Areas

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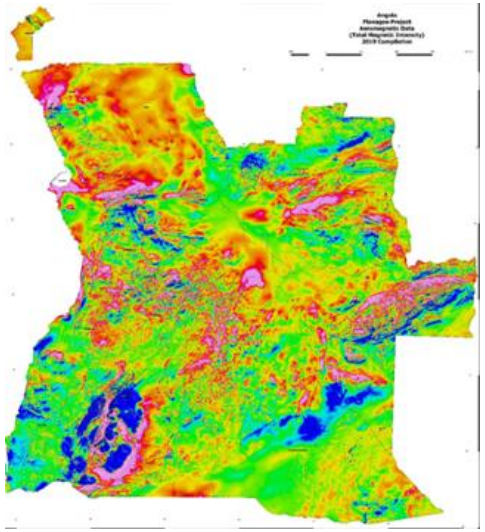
Chairman/CEO

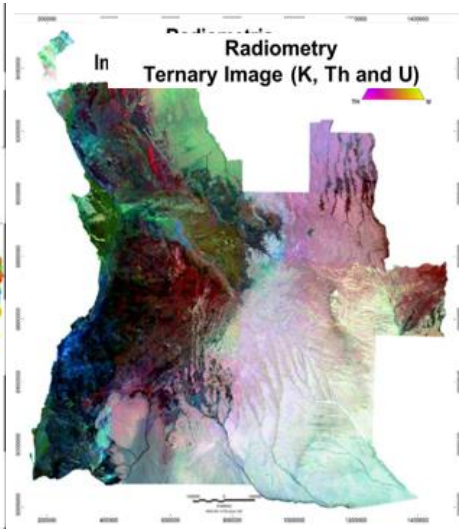
INDEX

1. GEOLOGICAL AND MINERAL POTENTIAL OF ANGOLA

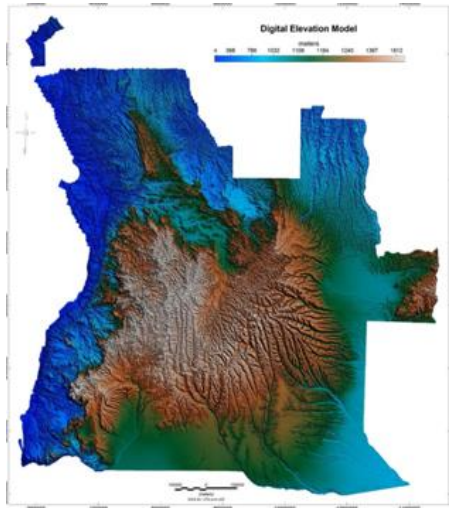
1.1.Geophysics Dataset



Magnetics

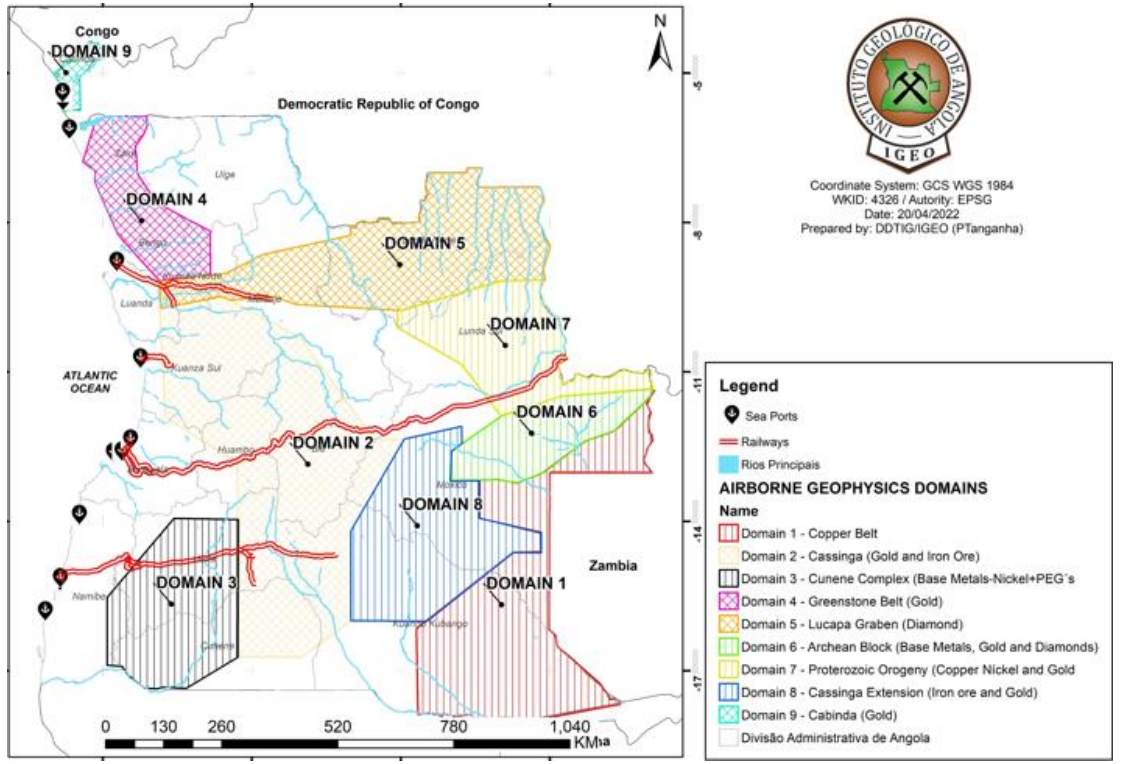


Radiometry



Digital Elevation Model

1.2.Geological Domains



Airborne Geophsysics Domains:

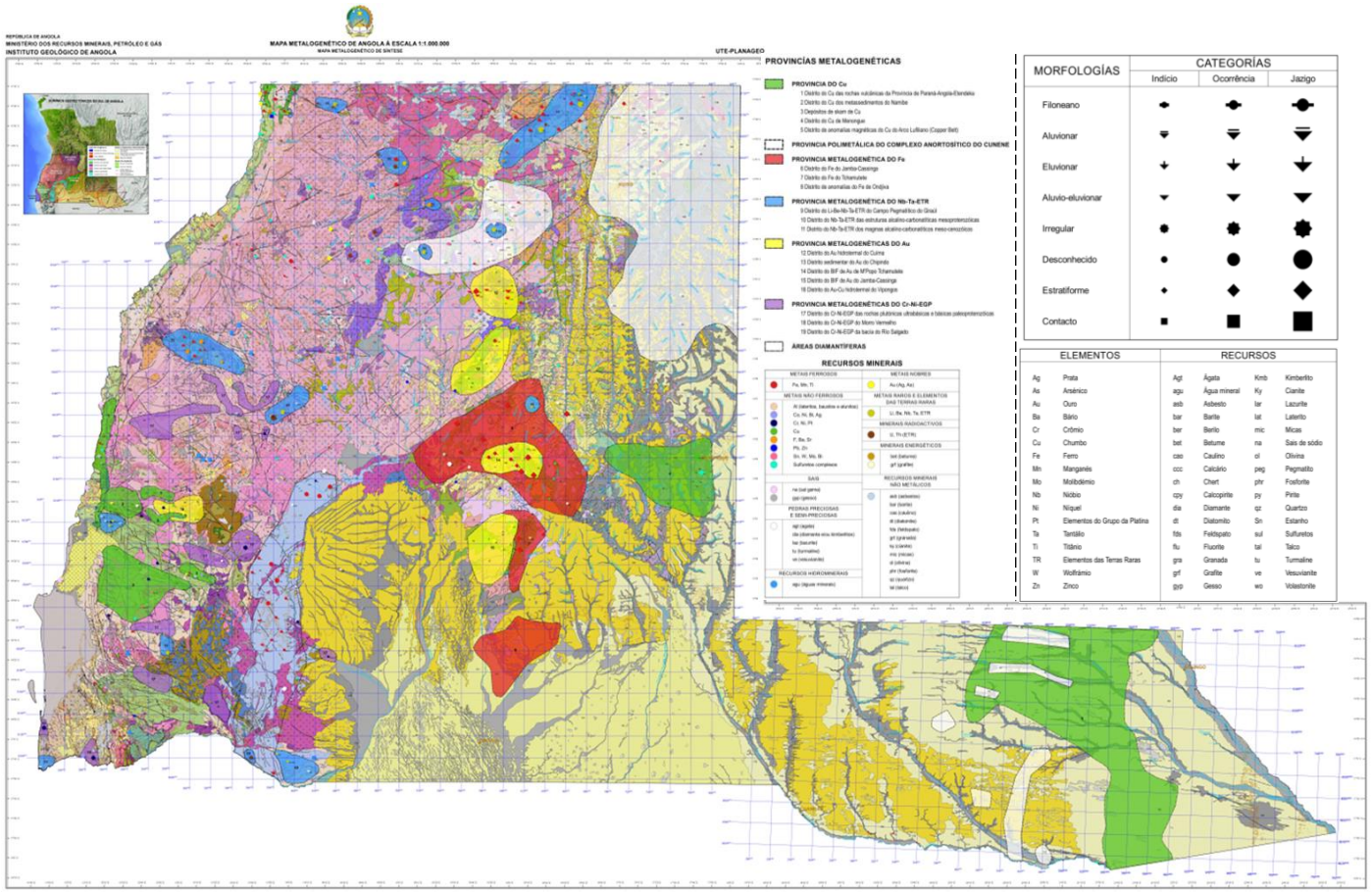
- *Allowed to devide the country into 9 (nine) Mega-Structures associated to a specific ocurrence of mineral group;*
- *Made it easier the targeting of prospecting areas;*
- *Supported in the integration with geological data to map the metallogenetic provinces in the South of Angola.*

1. GEOLOGICAL AND MINERAL POTENTIAL OF ANGOLA

1.3.Metallogenic Map

Identification of 7 (seven) mineral procinces

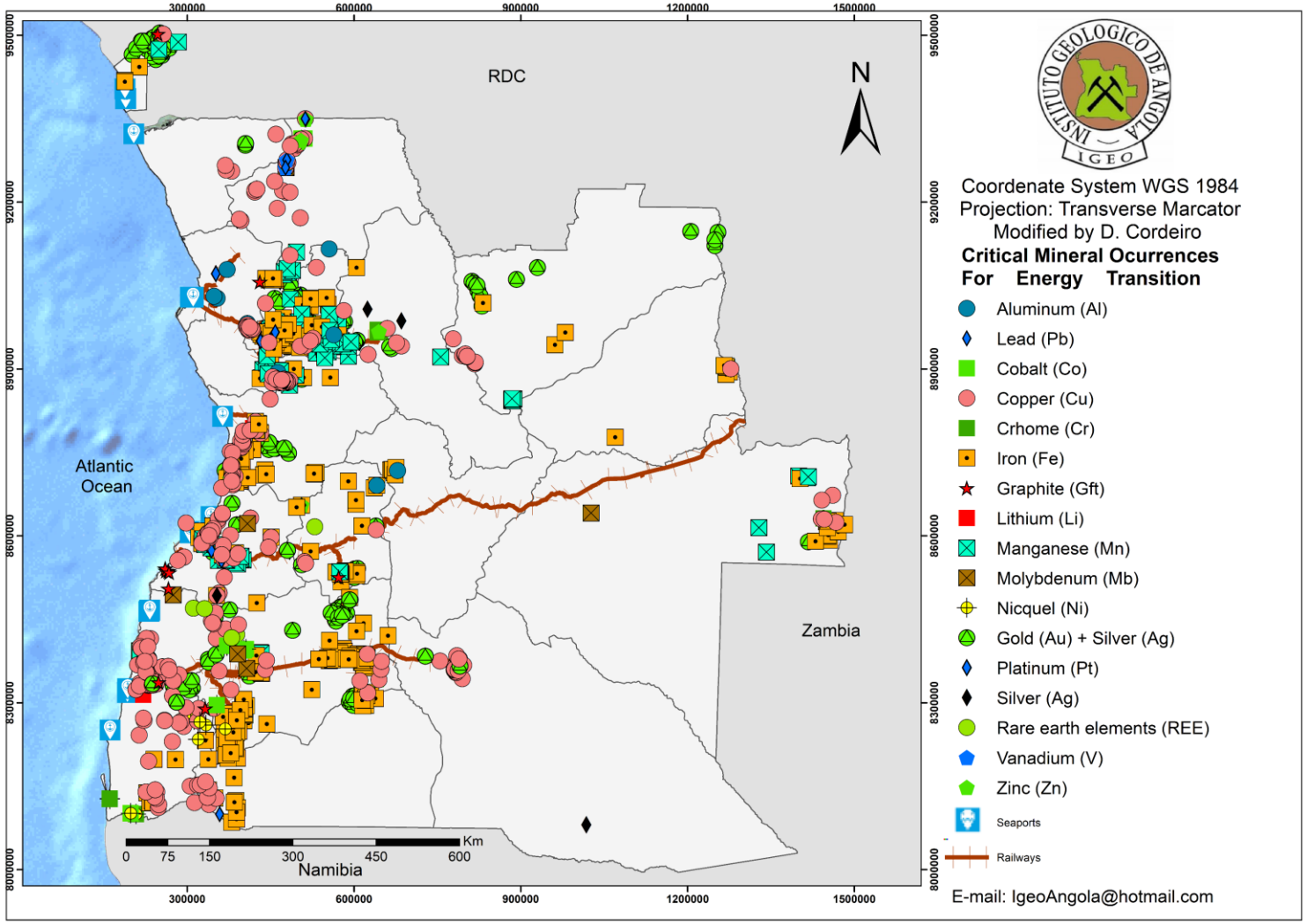
- ***Copper Provinces;***
- ***Polimetallic Province of the Cunene Complex;***
- ***Polimetallic Province for Irone Ore;***
- ***Polimetallic Province for Niobium, Tantalum and Rare Earth Elements;***
- ***Gold Province;***
- ***Polimetallic Province for Cromium, Nickel and PGE´s;***
- ***Diamond Areas***



2. OCCURRENCE OF CRITICAL MINERALS IN ANGOLA FOR ENERGY TRANSITION

The table illustrate the 51 most demand critical minerals.

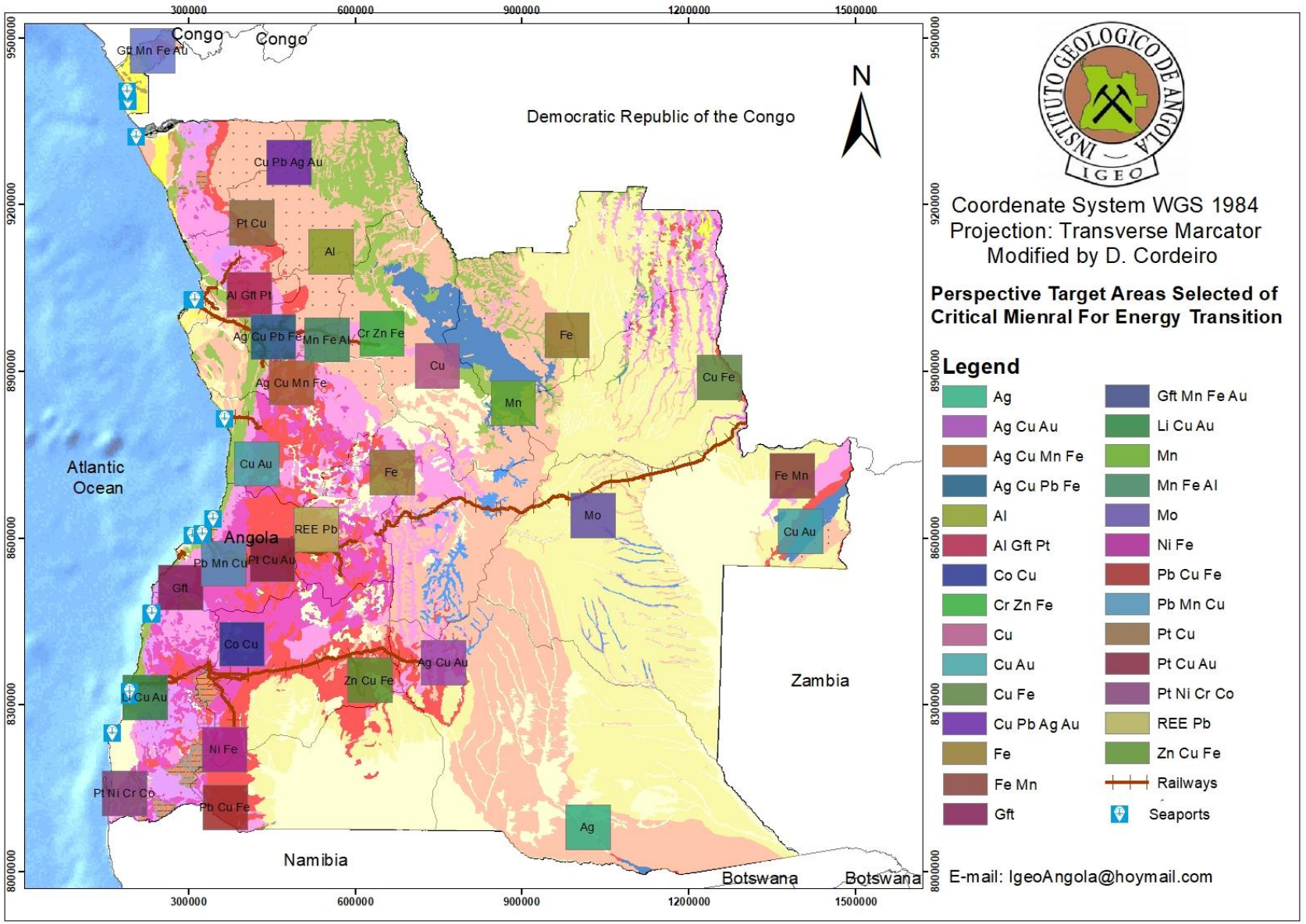
No.	Metal/Mineral	No.	Metal/Mineral	No.	Metal/Mineral
1	Aluminum	19	Gypsum	37	Light Rare Earth Elements (REE)
2	Antimony / Stibium	20	**Hafnium**	38	**Rhenium**
3	Barite	21	**Indian**	39	**Scandium**
4	Bauxite	22	Iron ore	40	**Selenium**
5	Bentonite	23	Limestone	41	Silica sand
6	Beryllium	24	Lithium	42	Silicon metal
7	Borate	25	**Magnesite**	43	Silver
8	Chromium	26	Magnesium	44	Talc
9	Clays	27	Manganese	45	Tantalum
10	Cobalt	28	Molybdenum	46	Tellurium
11	Coking coal	29	Natural graphite	47	Tin
12	Copper	30	Nickel	48	Titanium
13	Diatomite	31	Niobium	49	Tungsten
14	Feldspar	32	**Perlite**	50	Vanadium
15	Flourite	33	Platinum Group Metals (PGMs)	51	Zinc
16	**Gallium**	34	Phosphate Rock		
17	**Germanium**	35	Potash		
18	Gold	36	Heavy Rare Earth Elements (REE)		



Can be observed on the map the occurrence of Critical Minerals In Angola For Energy Transition. With more than 300 points

ANGOLA: CRITICAL MINERALS FOR ENERGY TRANSITION

2.1. perspective target Areas selected of Critical Mineral for Energy Transition



3. AVAILABLE TECHNICAL SERVICES

3.1.Geophysics Equipment

3.2. Analytical Laboratories

Name	Name of proficiency test	Reference Method
IGEO Geoscientific Laboratory	Determination of the content of heavy metals in the soil (Mn, Co ,Bi ,U)	ICP-MS Methods - 53
	Analysis of the chemical composition of gold ore	GFAAS Methods -16
	(Au, Ag)	AES Methods -12
	Determination of sulfate, nitrate, chloride and fluoride in water (SO_4^{2-} ,F^-)	IC Methods -32
	Analysis of chemical composition in silicate rock (CaO, K_2O, TiO_2, $P_2O_{5)}$	XRF Methods -51
	Qualitative phase analysis of XRD (X-Ray Diffraction) for unknown powder Qualitative phase analysis	XRD Methods -70
	Microprobe analysis	EPMA Methods - 75,76,77,78

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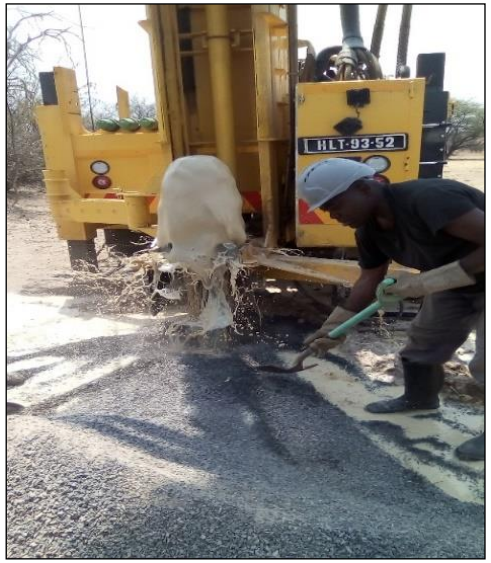
3. AVAILABLE SERVICES

3.3. Drilling Equipment



Drilling Capacity with the following methods:

- Core Drilling;
- Reverse Circulation Drilling;
- Mud Rotary Drilling;
- Bucket Auger Drilling;
- Down the Hole Drilling

4. GEOSCIENTIFIC DATAPACK

- CamadasCGeologica
- CamadasGerais
- CamadasTopografia
- DadosAmostragem
- EstiloQGIS
- Logotipos
- MapasImpressão
- ModelosCGeologica
- NoticiaExplicativa
- Relatorios
- MapaAmostragemC33T.qgs
- MapaAmostragemC33T.qgs~
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- MapaGeologicoC33T.qgs
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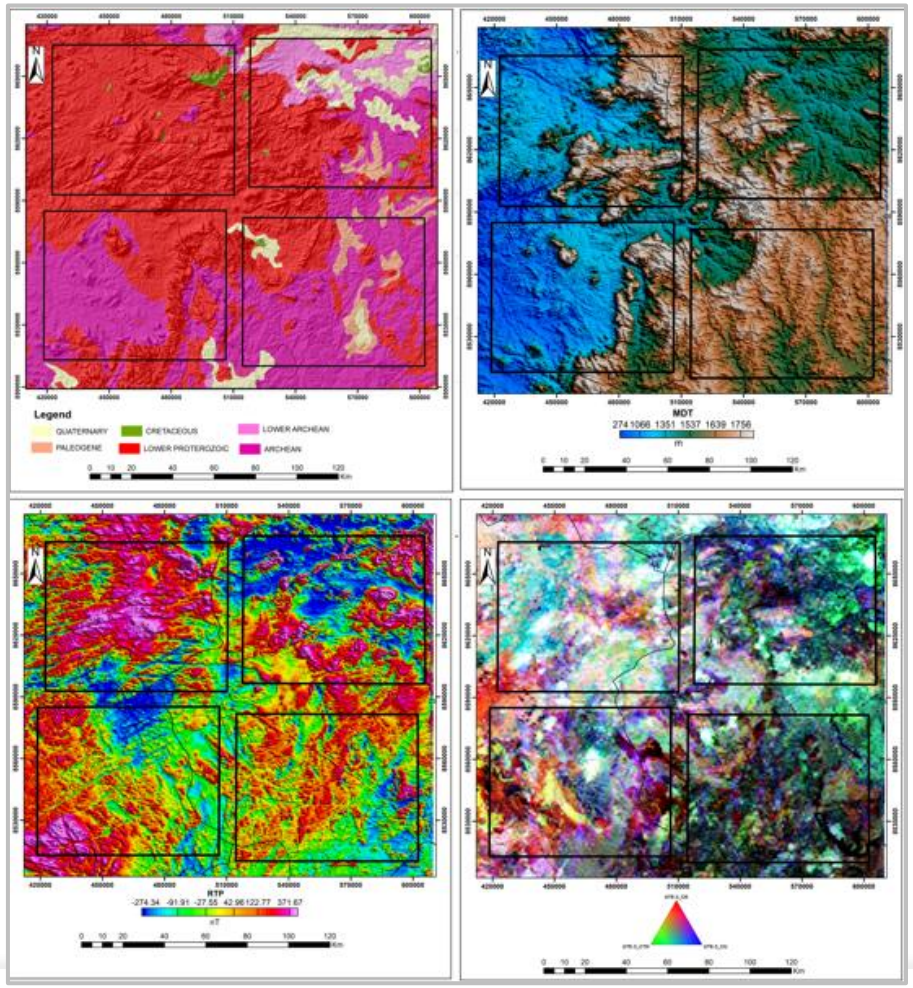
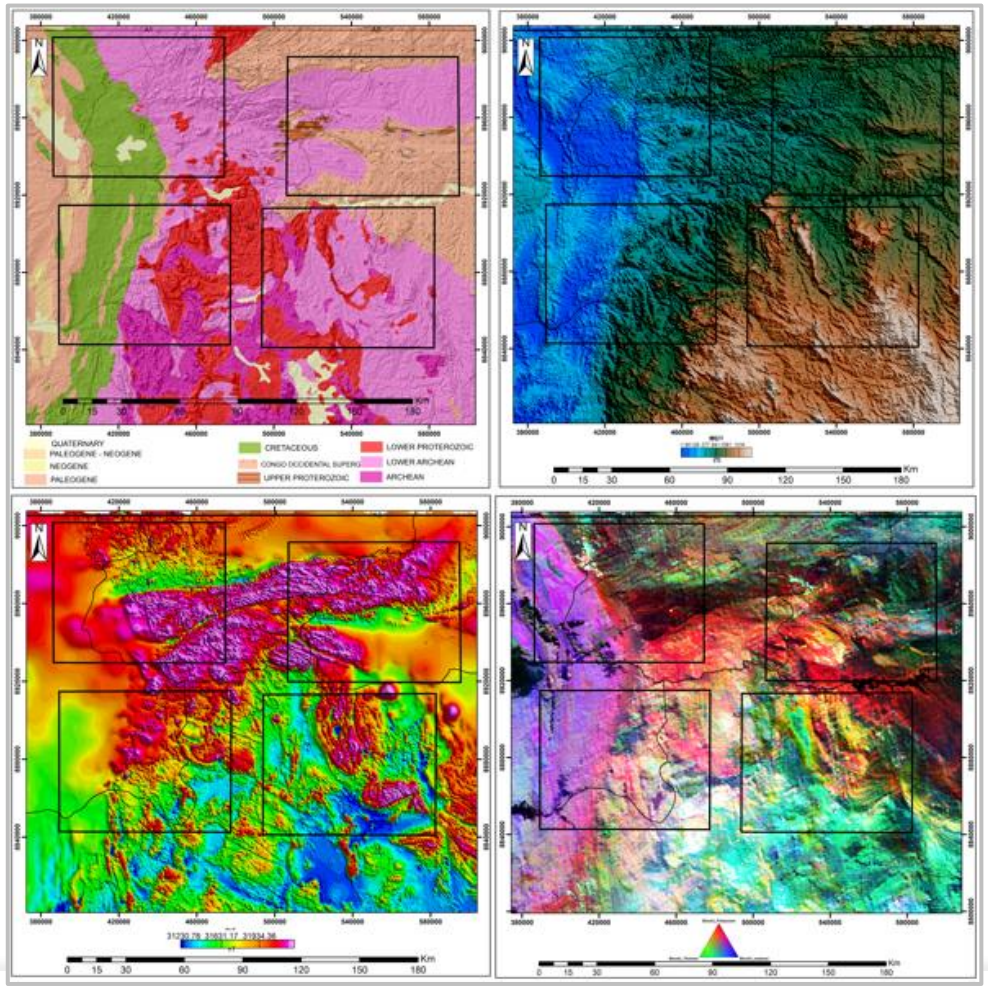
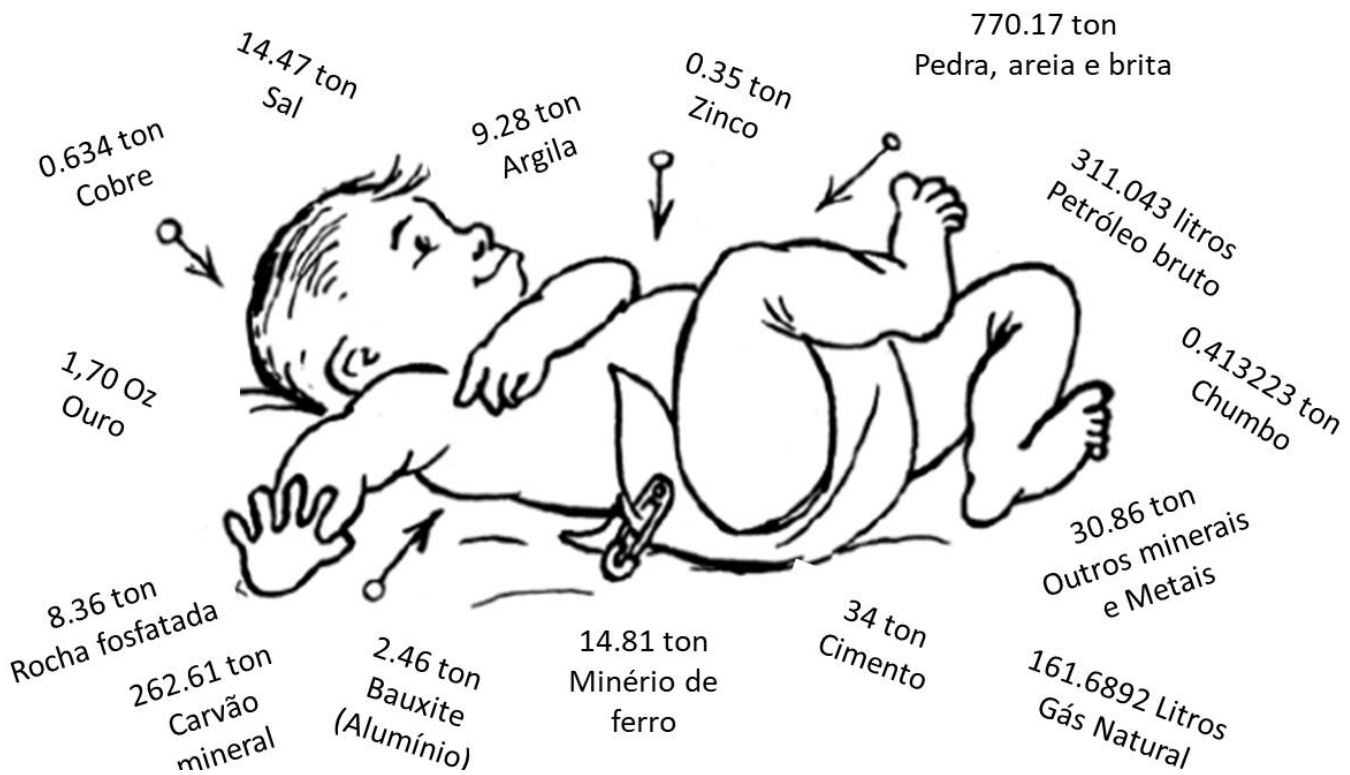
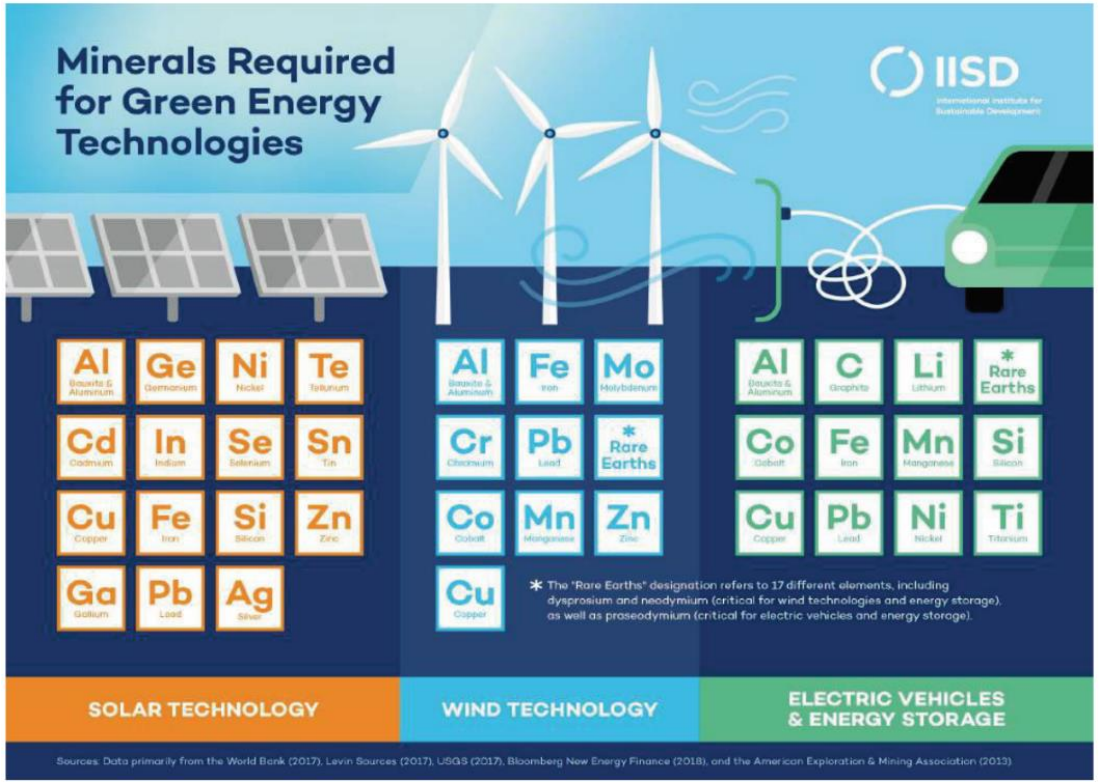




There are geological data in the different scales and geophysics datasets for selected areas to be promoted with geological and mineral potential for the development of Prospecting activities.

5. CONCLUSION !





Each person needs approximately 1,678 tons of minerals, metals, fuel during their lifetime.

Note: Considering that life expectancy is 78.74 years

THANK YOU !

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