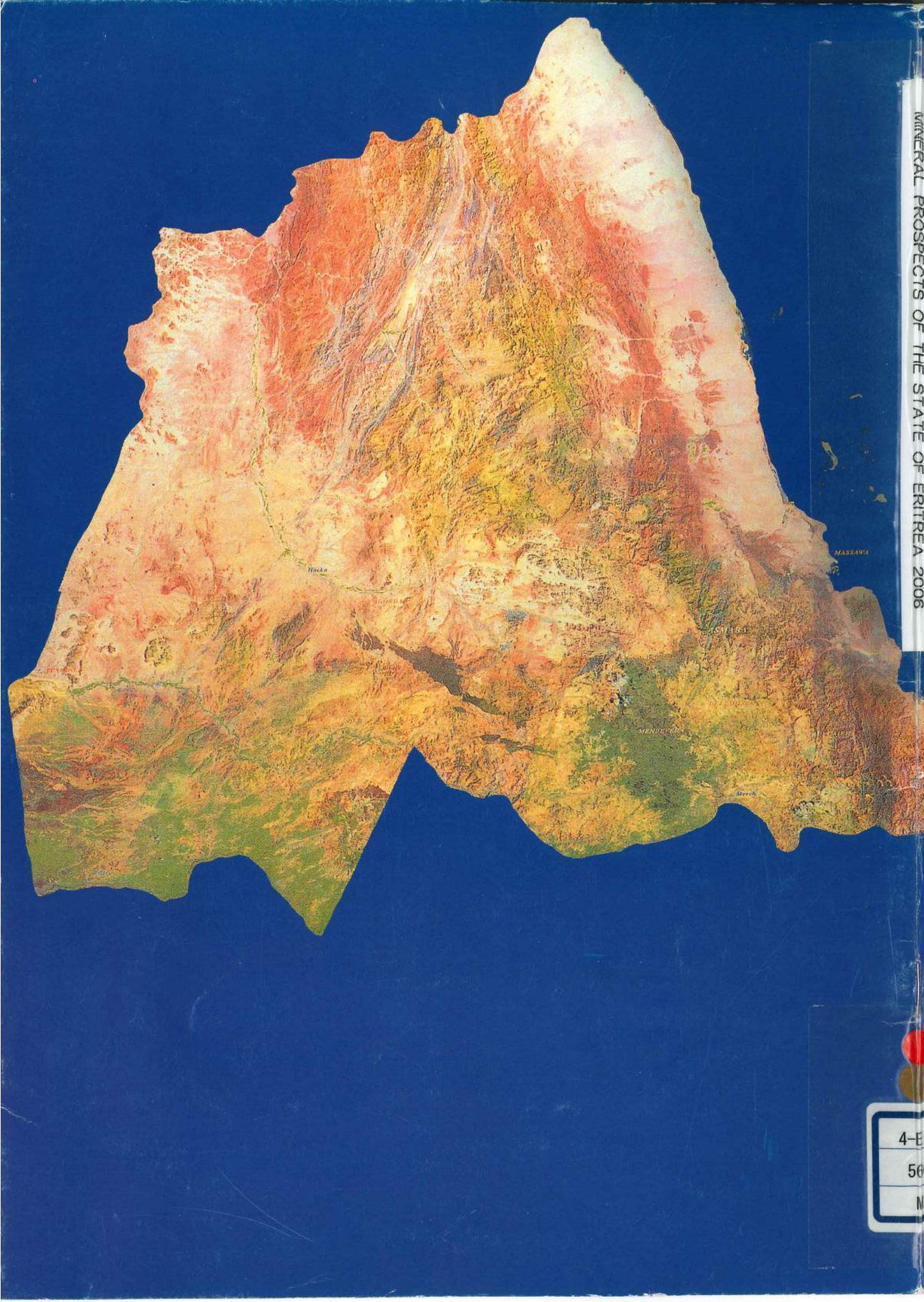

MINERAL PROSPECTS OF THE STATE OF ERITREA 2006

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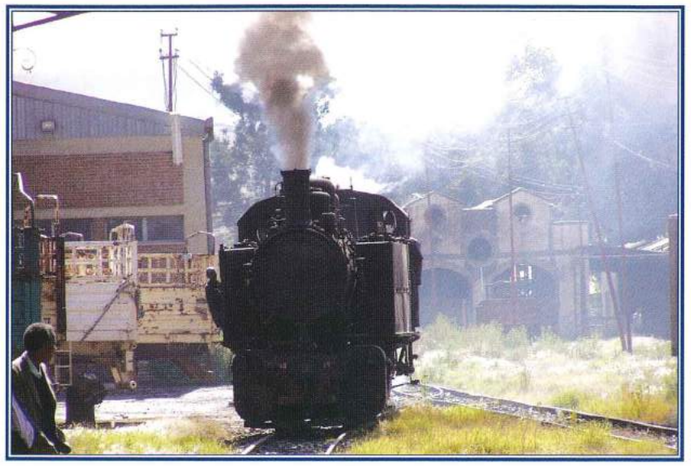
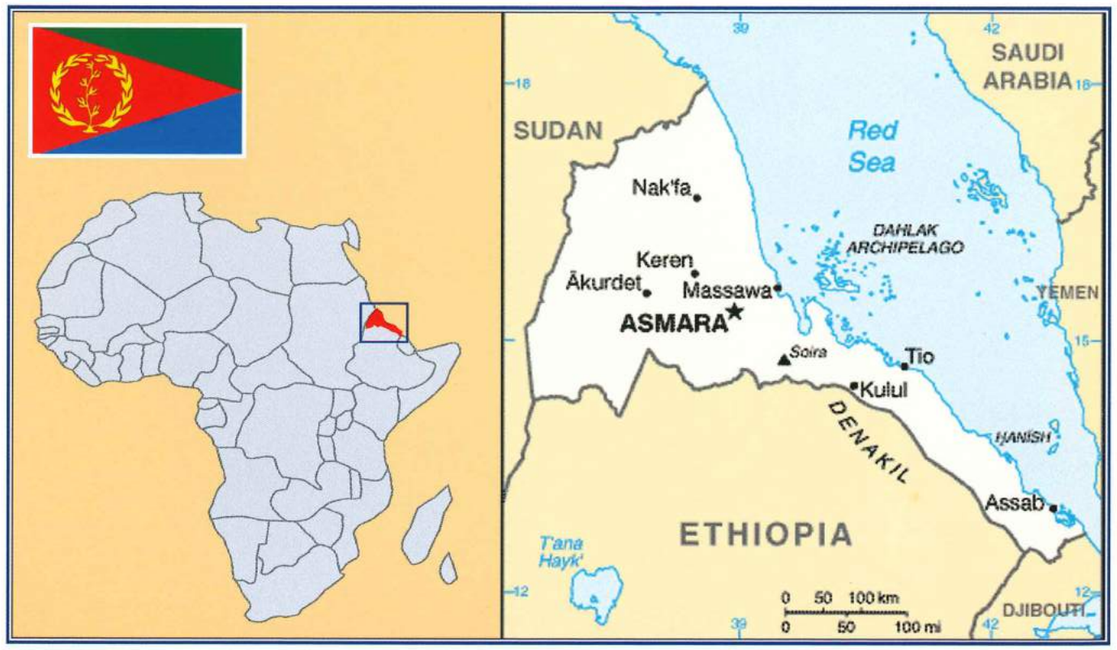
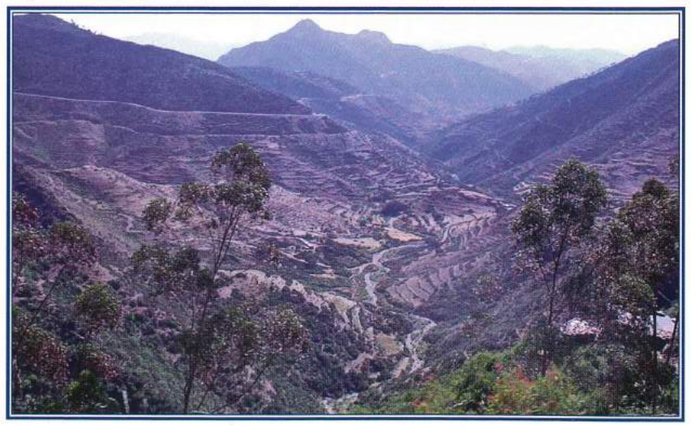
2006

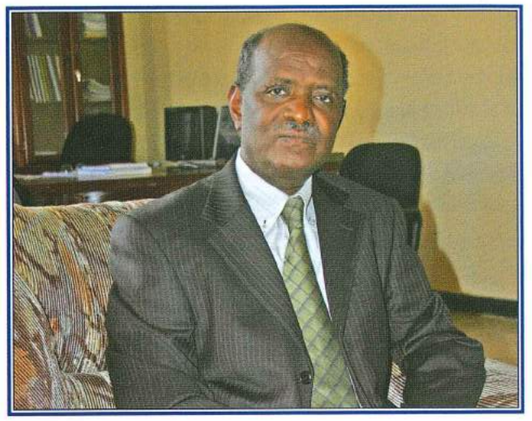


The historic railway is now operational between Asmara and Massawa





Dramatic views of the escarpment between Massawa, at sea level, and Asmara, the capital city of Eritrea



Tesfai Ghebreselassie
Minister of Energy and Mines

Dear investors

I have the great honour and pleasure to bring for your consideration the investment opportunities that my country Eritrea offers in the minerals sector.

Artisanal gold mining in Eritrea can be traced back to ancient times: even today it is commonly practiced in western Eritrea. Modern mining however only started during the Italian rule in the late twenties of the last century, when the Italian colonisers developed more than twenty small gold mines. The development of the mining industry was interrupted at an early stage, at the end of 1940's. Since then, the political and security conditions necessary for the development of the industry did not prevail in Eritrea, until the country's independence in 1991.

Despite the border dispute between Eritrea and neighbouring Ethiopia, and the latter's illegal position which has delayed the demarcation of the border in accordance with the final and binding ruling of the Boundary Commission, several exploration companies have been successfully operating in Eritrea. The recent announcements made by these companies have demonstrated the extraordinary potential that Eritrea holds for major mineral discoveries.

This brochure aims to acquaint you with the general geology, known types and areas of mineralisation, and the investment opportunities and environment of Eritrea. Brief mention is also made of the aggressive exploration activities of several foreign companies, and some of their exciting achievements. There are plenty of occurrences that suggest the potential for the discovery of economic deposits of precious and base metals. A variety of industrial minerals and good quality construction materials are also available in abundance.

The Government of the State of Eritrea is aware of the crucial role the private sector can play in the discovery and development of mineral resources. The mining law and policies of Eritrea provide an attractive legal and economic environment for investors: by setting out a number of incentives, including low royalties of two to five percent (with the option for their reduction, suspension or waiver) and a nominal half percent duty on imported capital goods. The holder of a mineral license is guaranteed the right to dispose of minerals without export tax, and to the repatriation of after-tax profits without restriction. The law also permits financial losses to be charged against gross income and to be carried forward. In addition, the Eritrean mining law provides simple procedures for the submission and processing of license applications.

I take this opportunity to extend a personal invitation to all investors to share in the pleasure and privilege of developing a cordial business partnership with us in mineral prospecting and development. The participation of international private investment in the minerals sector is more than welcome.

The prospective geology, attractive investment conditions, political stability and the friendly and industrious people of Eritrea combine to create a rare investment opportunity.

Tesfai Ghebreselassie

Minister of Energy and Mines

A highly prospective country

Eritrea joined the world community of independent states in May 1993 following a thirty year war for liberation which ended in May 1991. A UN supervised referendum held in April 1993 enabled the Eritrean people to state unequivocally to the world their strong choice for freedom and independence.

Aware of the significant and vital role the private sector has to play in the achievement of national development objectives, the Government of Eritrea has been committed to create a conducive atmosphere for the active participation of local and foreign private investors. However, since May 1998 the development of this young state has been severely curtailed by the border dispute with neighbouring Ethiopia. Despite this, the Eritrean people and Government are as resolute as ever in their commitment and endeavours to work together to rebuild their country's economy, and to secure social and economic progress.

Location, geography, infrastructure and climate

This young state is located in the north-eastern part of Africa with the Red Sea on its east coast, Sudan to the west and north, and Ethiopia and Djibouti to the south. Eritrea, with a land surface area of about 125,000 square kilometres, including hundreds of coral islands in the Red Sea, has a population of about three and a half million people. The country is home to nine ethnic groups, all with a strong sense of Eritrean national unity. Tigrinya and Tigre are the most widely spoken indigenous languages. English is commonly used in the business community, while Arabic and Italian are also frequently encountered.

The topography of Eritrea is exceptionally varied, from the 1,200 kilometre long coastal plain only a few metres above sea level, through the central highlands ranging up to 2,500 metres above sea level, to the low lying western and south western areas of the country. Rugged mountain chains run from the central plateau to the extreme north of the country. The climate in these different terrains correspondingly varies from arid, to semi-arid, to temperate. The mean annual rainfall in the coastal areas is less than 300 mm per year, whilst in the highlands and the western lowlands rainfall ranges between 500 and 1,000 mm.

Eritrea's infrastructure is centered on a well developed communications network linking the capital city Asmara to the regions of the country, including the two main sea ports of Massawa and Assab, and to the neighbouring countries. Asmara and Massawa have international airports, which also serve internal flights. Inevitably, the ravages of war have left their mark on the infrastructure, and the reconstruction of the prime facilities has been a high priority. Telecommunication facilities have also been renovated and developed, and mobile phones are now a common site in the major towns.

The Department of Mines

The Ministry of Energy and Mines is the authorised Licensing Agency and is responsible for the administration, regulation and coordination of all types of mining operations in Eritrea. The Department of Mines within the Ministry encompasses, amongst other functions, the Geological Survey and the Mines Administration Division, and is also itself actively engaged in exploration and mapping activities.

Even though there are several maps produced on different scales from various sources, there have been only two geological maps, at a scale of 1:250,000, compiled until recently, when the Eritrean Geological Survey prepared a 1:1,000,000 scale map.

The Eritrean mining sector has shown rapid development over the past few years since the Ministry of Energy and Mines started issuing licenses in 1997. Since then, several exploration companies have been involved in assessing and exploring the mineral potential of the country. In the successive years additional licenses have been issued on the first-come-first-served principle. The Department of Mines has also been developing a national minerals database.

The Ministry has a responsibility to provide preliminary information to exploration companies interested in conducting detailed investigations in Eritrea, and to make a contribution towards enriching the geological database of the country. As part of its routine works, the Department of Mines through the Mines Administration Division issues licenses to artisanal miners, and controls and supervises exploration and mining activities so that they are in line with the directives of the Ministry and are environmentally compliant. In addition, the Department of Mines, through its research wing – the Geological Survey – has been working, together with various foreign governmental aid agencies and international organizations, to carry out geological mapping and mineral exploration.

The Eritrean Geological Survey has been conducting an assessment of the raw materials for cement manufacture in the Adailo Area, in the Southern Red Sea Region. This survey has included geological mapping, geochemical sampling, hydrogeological and geophysical work. The results indicate that this area does have the potential for these materials, including adequate groundwater for a production plant.

A remote sensing project was launched in 2004. This consists of training, preparing a library of spectral signatures, and geological mapping; all using remote sensing techniques. Training in remote sensing technology has been given to 25 members of the Department of Mines. In addition, geological mapping and the identification of mineral potential using remote sensing has been conducted at different locations in the Northern and Southern Red Sea Regions as part of the same project.

To increase the data that is already available on the Alid geothermal potential, the Department of Mines has conducted geological and geophysical surveys of the area. These studies have included geological and structural lineation map production, and resistivity surveys consisting of profiling and sounding. The Department has also contacted appropriate investors with a view to extending these studies towards eventual development of the Alid geothermal potential. Preliminary geological and hydrogeological studies have also been conducted around Dubi in the Southern Red Sea Region.

Mining law

The legal framework governing the conduct of all mining and related operations within the territory of Eritrea is embodied in a Mining Law comprising: *Minerals Proclamation No 68/1995, Mining Income Tax Proclamation No. 69/1995 and Regulations on Mining Operations Legal Notice No. 19/1995,* all of which were promulgated in March 1995.

Key Policy issues upon which the newly promulgated Mining Law is based include:

- All mineral resources in Eritrea are public property. The State has a duty to ensure the conservation and sustainable development of these resources for the benefit of the people;
- The intention is to create a favourable atmosphere for foreign investment in the mining sector. Due recognition is made of the significant role that foreign investment and skills can play in the development of this sector and the capital intensive, long term, and risky nature of mining investments;
- The necessity for formulating regulations which ensure protection of the natural environment, together with sustainable development of the country's mineral resources, in accordance with sound principles of resource management and land use.

The Eritrean Mining Law is up-to-date, attractive and competitive, as it provides considerable benefits and incentives to investors. For example, the law provides for:

- The right to exploit any commercial discoveries made pursuant to a valid exploration license;
- The right to sell locally or export, free of all duties and taxes and without being required to obtain any other authorisation or permission from any other Government agency, all minerals produced pursuant to a mining license;
- A simple and fair taxation system which recognises the risky nature of mining investments, and hence allows:
  - Accelerated depreciation (straight line method over 4 years) of all capital and preproduction costs;
  - Write-offs of exploration expenditure incurred anywhere in the country;
  - The carrying forward of losses;
  - A generous reinvestment deduction (5% of gross income);
  - No dividend tax
  - A nominal rate of import duty (0,5%) on all inputs necessary for mining operations;
  - Normal royalty rates as well as an option for the reduction, suspension or waiver of the royalty in appropriate circumstances;
- Equitable foreign exchange regulations permitting;
  - Free and unrestricted repatriation of earnings;
  - Retention of a portion of foreign currency earnings abroad in external accounts;
  - Maintenance of foreign currency accounts in banks in Eritrea.
- A simple "one-stop" licensing system enabling all the formalities for all types of licenses for mining operations to be completed by a single Government agency - the Department of Mines with the Ministry of Energy and Mines.

The mineral licensing system

The Mining Law permits the following types of licenses:

- Prospecting License, valid for one year and non-renewable;
- Exploration License, valid for an initial period of three years, but which may be renewed twice for additional terms of one year each, with an option for further renewals in appropriate circumstances; and
- Mining License, valid for a period of 20 years with optional 10-year renewals.

All of these licenses are exclusive and grant their holders an automatic right to obtain an Exploration License from within a Prospecting License and a Mining License from an Exploration License, subject to the fulfillment of the obligations under the preceding license. Although the maximum area that a single license can cover is fixed at 100km² for a Prospecting License, 50 km² for an Exploration License and 10km² for a Mining License, simultaneous possession of multiple contiguous licenses is permitted.

Applications for any of these licenses may be made by individuals or legal entities of any nationality. All applications are to be made on specified forms that can be obtained from the Department of Mines of the Ministry of Energy and Mines and must be accompanied by a non-refundable processing (registration) fee of US$1 per page of each application and the supporting documentation presented. Successful applicants are also subject to a payment of license fees and the first year's rental upon the issue of a license. The rate of these fees is governed by Regulation and is at present as follows:

License	License Fee (per License) US$ (approx.)	Annual Rentals (per km²) US$ (approx.)
Prospecting	80	8
Exploration	240	32
Mining	960	96

The geology of Eritrea

The geological environment of Eritrea is made up of Precambrian basement rocks that are overlain unconformably by predominantly Mesozoic sedimentary rocks and Tertiary to Quaternary volcanic and sedimentary rocks.

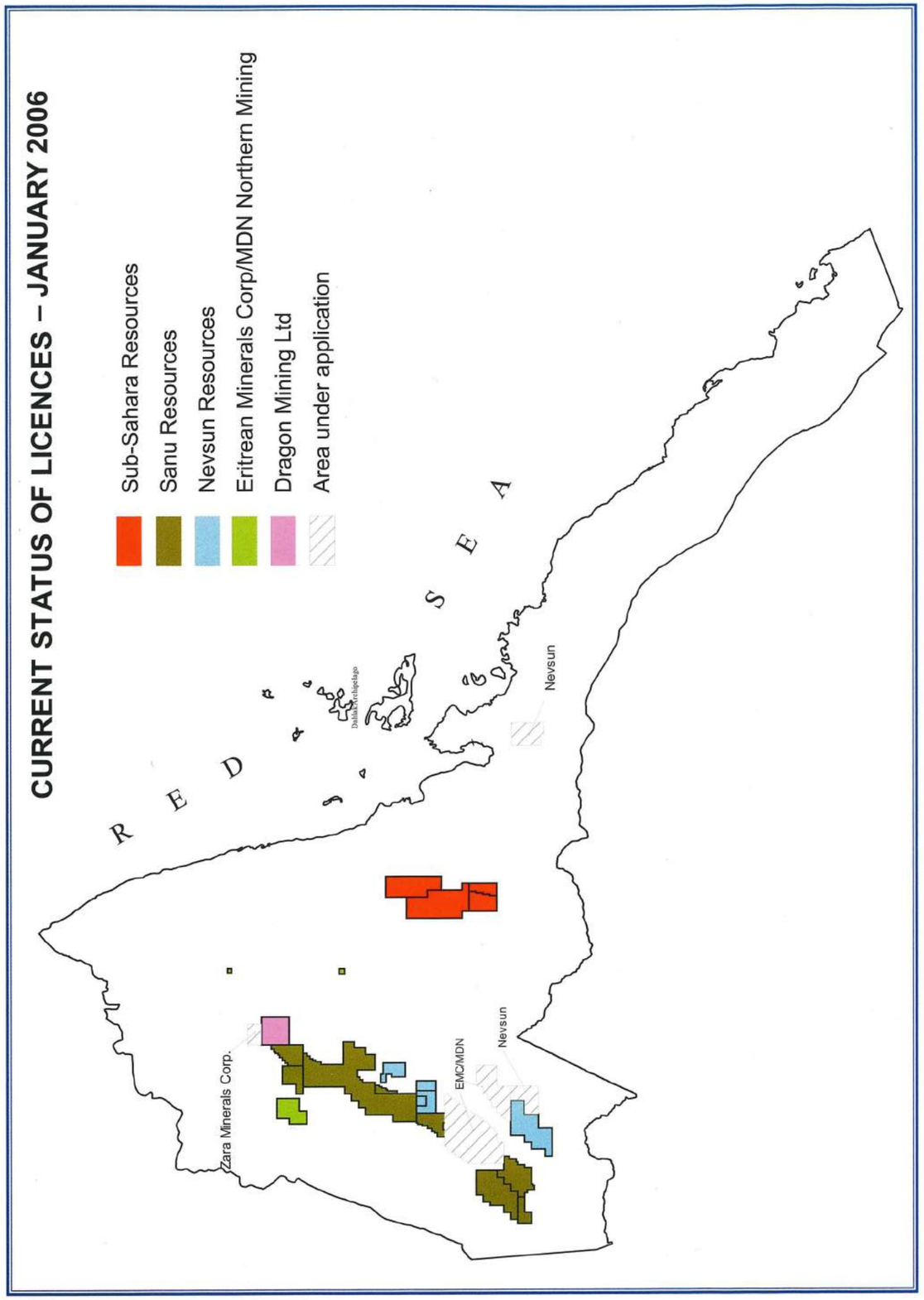
Precambrian Basement Rocks

Basement rocks in Eritrea cover more than 60% of the surface of the country. The basement rocks of Eritrea are part of the Arabian Nubian Shield (ANS) which are exposed in north east Africa (Egypt, Sudan, Eritrea, and Ethiopia) and in Saudi Arabia, northern and northwestern parts of Yemen and part of the western Middle East.

The shield is believed to represent a suture between East and West Gondwana. The older components of the shield include archaean and palaeoproterozoic continental crust, and neoproterozoic (c. 870-670 Ma) continental-marginal and juvenile intraoceanic magmatic-arc terrains, that accumulated in an oceanic environment referred to as the Mozambique Ocean. Archaean and palaeoproterozoic continental crust rocks make up the older components of the shield and occupy a very small part of the basement rocks. The major part of the shield consists of the neoproterozoic (c. 870-670 Ma) continental-marginal and juvenile intraoceanic magmatic-arc rocks.

In Eritrea, the basement rocks have not been well studied until the last few years, despite their high mineral resource potential. Studies based largely on satellite image interpretation aided by limited ground controls, suggest that the rocks can be subdivided into four tectonic blocks or segments, separated by tectonic boundaries. Three of these blocks, the western, central and eastern segments, underlie northern and central Eritrea, whilst the fourth, the Danakil segment, occurs in the southeastern part of the country.

The western segment, the Barka Terrain - is exposed in the northwestern part of the country and underlies the Barka lowlands. The Barka Terrain is made up of amphibolite facies pelites containing kyanite and staurolite, together with quartzites and marbles.



The central segment, referred to as the Hagar Terrain, extends from the Barka River up to the Adobha Abi valley in the east, and comprises several large elliptical bodies of various tectonic units that are dominantly composed of oceanic and accretionary wedge materials. The western margin is composed dominantly of ophiolitic rocks and, occasionally, layered sequences of chloritic schists are seen, inter-layered with epidotic and chloritic metabasalts, occasional thin and discontinuous marbles, and manganiferous and ferruginous cherts. The Hagar Terrain displays an east verging thrust contact with the adjacent segment to the east. The Hagar Terrain is known to be prospective for chromite, platinum group elements, nickel, gold and copper mineralisation.

The eastern segment- the Nakfa Terrain - is bounded by the Adobha Abi valley in the west and by the Red Sea escarpment to the east. It is made up of calc-alkaline volcanic and volcanoclastic rocks conformably overlain by a metasedimentary sequence of chlorite schists, grits and polymict conglomerates with occasional pelitic sericite schists and carbonates. The metavolcanic rocks are intruded by variably deformed plutonic to hypabyssal calc-alkaline bodies. The sequence is cut in places by post-kinematic granites and gabbros and is also transected by several narrow shear zones sub- parallel to the regional strike. The Nakfa Terrain is considered to represent a relict island arc assemblage. Several VMS (Volcanogenic Massive Sulphide) base metal occurrences and gold showings are associated with this tectonic unit.

The southern segment - The Danakil Terrain - is composed of metamorphic rocks which may be grouped into three formations:- (1) migmatitic hornblende biotite gneisses; (2) a phyllitic formation consisting of schists, conglomeratic phyllites, crystalline limestones, and graphitic schists; and (3) post-tectonic granitoids.

Mesozoic Sediments

The lower Mesozoic sediments are represented by the Merbet (Adigrat) Sandstone which outcrops in the southern part of the country and in the Danakil area, and is commonly intercalated with siltstones and haematitic layers. It lies unconformably over thin layers of conglomeratic sandstones which, in places, appear to have the characteristics of a glacial deposit. Overlying the sandstone is the Jurassic Adailo (Antalo) Limestone. This unit is exposed over a large area in the Danakil and is made up of limestones that are compact, partly shelly, fossiliferous and layered. Alternations of quartzitic layers are present in the lower part, whilst towards the upper part the sequence becomes mainly gypsiferous to dolomitic. The Upper Sandstone forms pockets of sandstones that have been preserved from erosion. Commonly this sandstone is medium to coarse grained, light coloured, and dominantly quartzitic but partly conglomeratic.

Tertiary Volcanics and Sediments

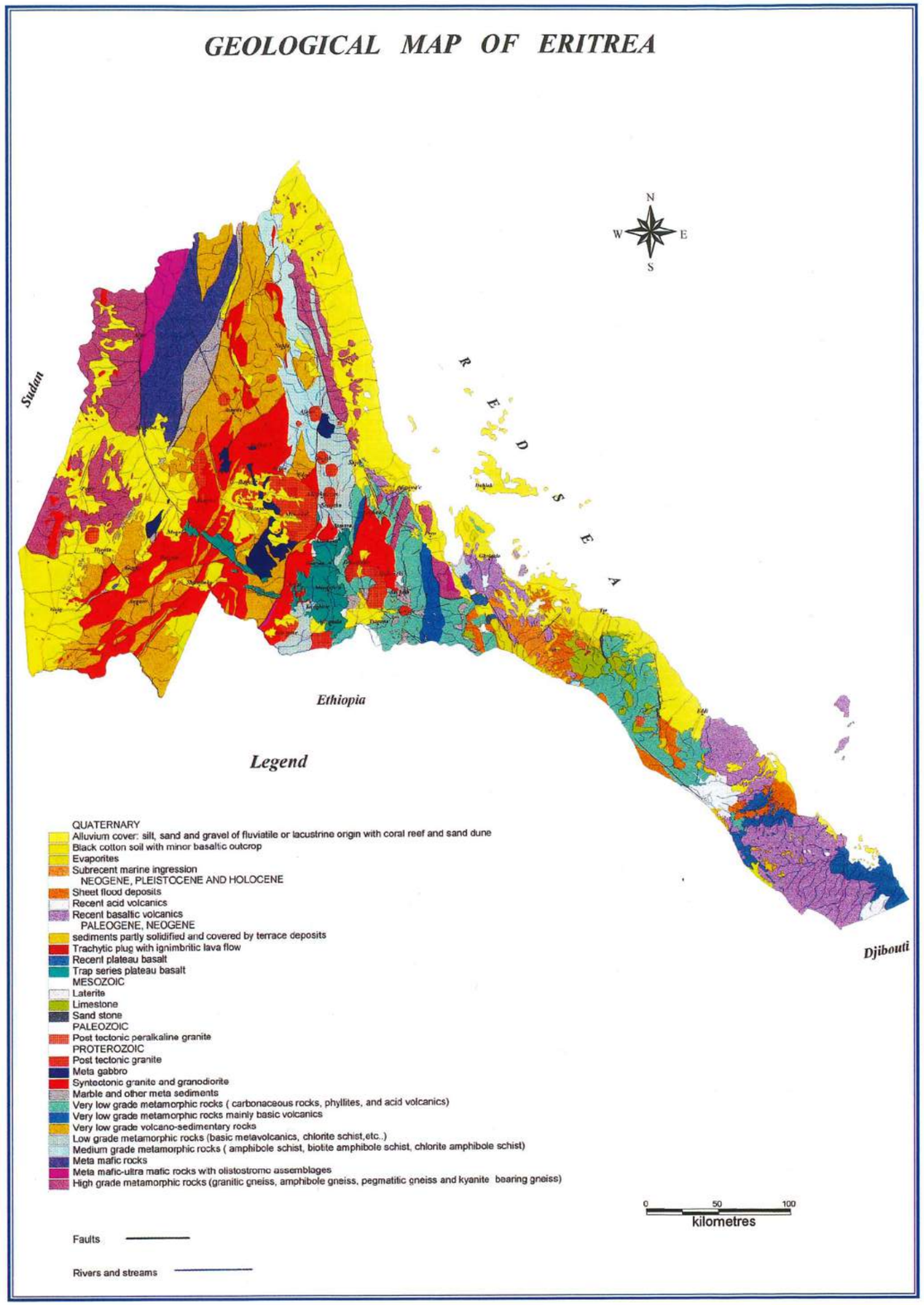
The Tertiary volcanics can be divided into three units: (1) the plateau-forming Tertiary basalts that are predominantly olivine basalts with intercalations of intermediate lavas and tuffs; (2) the lower Afar stratified basalts composed of basaltic lava flows and tuffs that are usually found intercalated with sediments of the Danakil Formation; and (3) the Afar Basalts composed of recent lava flows and volcanic cones, with minor acid to intermediate volcanics, mainly trachytes, rhyolites and ignimbrites. The Tertiary basalts are currently actively exploited for aggregates.

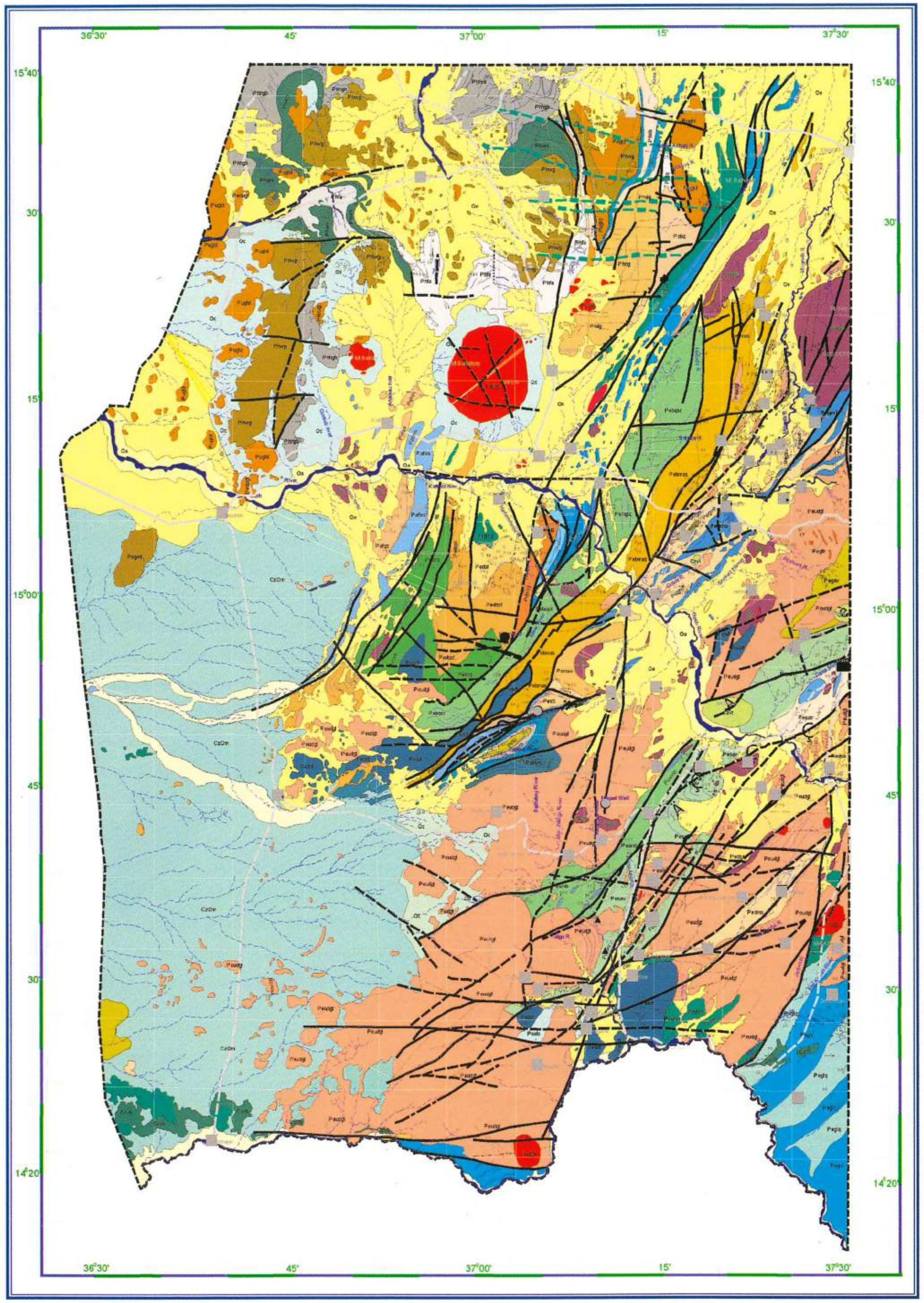
The Tertiary Sediments

The Tertiary sediments lie along the Rift escarpment and in central Afar. Three sedimentary formations have been identified: the Danakil, Dogali and Desset Formations. The Danakil and Dogali Formations are of late Tertiary age and are composed mainly of limestones intercalated with conglomeratic sandstones and siltstones. They are overlain by calcareous sands with coral reefs, partly consisting of pebbles of volcanic origin, and gravels with sand, silt and clay horizons. The Desset Formation comprises sandstones, clays and fine beds of anhydrite and halite unconformably overlying the Dogali formation in the northern part of the coast, while the Red Series containing coarse clastic fresh water sediments occupies the southern part of the coast.

Quaternary Sediments

A thick evaporitic formation of bedded halite, gypsum, anhydrite, potassium and magnesium salts, with shell material fills the basin in the Danakil Depression. Deposits of sheetflood terraces, silt, sand and gravel are present in some locations occasionally covered by windblown sands. Basaltic flows and related spatter cones represent Quaternary volcanic activity in the Danakil region.





GEOLOGY OF Gash Area

SCALE: 1:250,000

UNIVERSAL TRANSVERSE MERCATOR PROJECT CLARKE 1880
SPHEROID LATITUDE OF ORIGIN: 0, LONGITUDE OF ORIGIN:38

Legend

Quaternary Deposits

- Qa – Alluvium Deposits
- Qc – Colluvium Stone orstus with fine equivalents
- Qe – Elluvium Deposits

Cenozoic Deposits

- Cenozoic Basalt flows
- Czvl – Porphyritic volcanic domes and agglomerates
- CzDm – Cenozoic clays, silt

Proterozoic Rocks

- Felsic dikes
- Basaltic dikes Doleritic, plagioporphyry
- Pegk – Pinkish Granitic Dikes, and Aplitic dikes
- Syn to late tectonic Granite

Gulgula Formation

- Fine grained clastics and chemically precipitated sediments
- Pegiq – Polymictic conglomerate, metasandstone

Intrusive Rocks

- Metadiorites
- Peudg – Undifferentiated Granitoids
- Metagabbro

Fanco Metasediments

- Metasediments commonly quartzites?
- Basal conglomerate followed by metasandstone (?) and/or quartzites, marbles, little phyllites and? volcanic flows

Tokombia Metasediments

- Intermediate to basic metavolcanics, vesicular and agglomeratic at places
- Pests – Tuffaceous phyllites (quartz, sericite, plag., chlorite schist (Bagundi phyllite)
- Mainly clastic sediments, sandstone, graphitic bands and phyllites
- Metasediments involving phyllites, graphitic schists, calcareous sediments and interbeds of minor volcanic flows and pyroclastics and/or tuffs

Augaro Group

- Pyroclastic (reworked volcanic and sediments)
- Metasediments mainly clastics and marble lenses
- Massive andesites, andesitic agglomerates and/or breccia, diabase, tuffaceous slates and rhyo-dacitic varieties
- Dominantly Metasediments including marble lenses
- Mafic metavolcanic rocks intermixed with granitoid intrusion (Hypabyssal Intrusion)

Gogne Group (Metasediments)

Gogne Area

- Biotite quartz schist, mafic intermediate lavaflows with interlayers of cherts or ferrugineous quartzite, calcareous Schists, graphitic schists and marble
- Metavolcanic rock within the main unit, probably occupies the lower parts

Bildere Lubanyay Meta-Andesite and associated volcanoclastic sediments

- Tuffaceous phyllite, mica quartz schist, meta agglomerate and minor quartzite
- Meta-andesite with minor metasediments
- Chlorite sericite quartz schist, phyllite and minor lava flows thin metaconglomerates. Minor ferrugineous quartzite, phyllites (slates) graphitic interlayers

Gurgur Group

- Marble
- Lava flows with little quartzites and quartzitic schists and tuffaceous phyllites
- Dominantly metavolcanic Mafic lava flows, agglomerates and minor phyllites
- Metasandstone and sandy metaconglomerate

Hademdemi Group

- Highly foliated rocks appearing as phyllites (phyllonites)
- Metavolcanic rocks with interbeds of metasediments
- Metasandstone with minor volcanoclastic sediments and metavolcanic rocks (lava flows)
- Sericite-quartz schists, quartzite with interlayers of phyllites and minor metavolcanic rocks metashales, phyllites, clastic sediments including greywackes, marble and little cherts
- Metavolcanic mafic to intermediate rocks and associated volcanoclastic sediments

Obel Metavolcano-sediments

- Pabq – Altered (carbonaceous) metavolcanic (meta andesite?) with little tuffaceous phyllite muscovite sericite schists and ferrugineous quartzite
- Paiq – Micaceous quartz feldspar schist and an amphibolite schist-ose rock

High grade rocks

- Undifferentiated Granitoid bodies occuring within the high grade rocks
- Layered amphibolite and/or amphibole gneisses associated with metagabbro and quartz diorite (in Hawashite area: amphibole gneisses
- Amphibole mica schists, with interlayers of amphibolites, calc silicates, graphitic schists, ferrugineous quartzites and little marbles
- Garnet mica schists and interlayers of garnet bearing biotite amphibole gneisses and interlayers and lenses of marble
- Biotite-quartz schist alternating with quartzofeldspathic and graphitic schists and little lenses of marble, locally migmatized
- Debk Keyih Mica quartz schists interlayered with granitic gneisses
- Granitic gneisses and migmatites with minor partially migmatized amphibolites and quartzo-feldspathic gneisses

Talawa Area

- Marble with carbonaceous metavolcanic rock
- Micaceous schist cut by mafic dikes and granitic dikes
- Marble interlayered with amphibolite and chloritic schists
- Amphibolite with layered metasediments
- Amphibolite and interlayered metavolcanic and metasediments

Daretay Area

- Chlorite schists and quartzites with marble
- Quartzites, sericite-quartzite schists, phyllites, carbonaceous metavolcanic and a quartz porphyry
- Marble and associated metasediments
- Metasandstone with marble lenses and intercalations and porphyritic metavolcanics

Structural Symbols

- Foliation
- Minor faults and/or lineaments
- Structural trends
- Sense of displacement
- Thrust fault
- Major fault/Lineament
- Major fault inferred

Other Symbols

- Town/Village
- Highway
- Dry weather road
- Vehicle track
- River

Scale 1:250,000

Mineral potential of Eritrea

Eritrea has a long mining history that stretches back to Biblical times. Gold production in Eritrea was recorded in the times of the Pharaohs of the Fourth Dynasty, and later gold mining during the Portuguese occupation in the seventeenth century is also well recorded. Further evidence of the work of ancient miners is found in several places in the country, indicating that mining operations were active in Eritrea long before colonial times.

Modern mining, however, began at the beginning of the 20th century following the Italian colonisation of the country. Following the Second World War, mining and related operations continued throughout the country, although intermittently. In the early seventies this resulted in the development of the short-lived modern mine at Debarwa, before the independence struggle forced its closure.

The mining operations were generally unsystematic and poorly documented. The technology and exploration methods employed at the time, as well as the understanding of styles of mineralisation, have now been greatly improved. Newer technology and exploration methods is leading to the identification of previously unexpected styles of mineralisation, and it is also possible that known deposits previously regarded as unpayable may prove to be economically viable with today's extractive processes.

It is now recognised that Eritrea has the potential to host significant, economically viable, VMS deposits. These are typified by the Bisha discovery located in the western part of the country, as well as the already known deposits at Debarwa and Adi Nefas. The traditionally recognised gold mineralization was predominantly hosted in quartz veins and disseminations within shear zones. Recently a new discovery has emerged at the remote Zara deposit in the north west of the country, to add to the well-known historic sites such as Augaro and Harab Suit.

Gold

Recent exploration activities have shown that economic gold deposits occur widely in many parts of the country. The previously known areas of primary gold occurrence were in the Central Highlands (which includes the Hamasien gold fields) at Shillalo in the southwestern area, and those in the southern areas of Eritrea. To add to these, the last decade of exploration activity has shown the presence of economic gold deposits in the Western Lowlands; at Bisha; at the gold showings in Haykota; at areas southeast of Tessaney; and in northern Eritrea at the Zara deposit.

Head grades in most of the historic vein gold mines that were active during the Italian colonial time up to the late 1950s, were reported to be as high as 25 - 45 g/t, with reasonably good recoveries.

Eritrea's historic gold mineralization is usually hosted in quartz veins and stockworks in shear zones associated with felsic volcanic rocks, dioritic intrusions and in various schists. These shears are frequently sub-parallel to the strike of the pronounced cleavage of the neoproterozoic rocks, typically north-north-east. Occurrences of gold within exhalative VMS deposits, and in the weathered and supergene zones overlying them, are becoming more evident with recent additional discoveries of gold in Debarwa and Adi Nefas (in the central highlands), and at Bisha and Harena (in the western lowlands).

Base Metal Deposits

North-north-west to north-north-east trending belts of ferruginous quartzites, gossans, and exhalative cherts are recorded in Eritrea. The economically important minerals in these massive sulphide deposits and their supergene zones are predominantly chalcocite, pyrite with minor amounts of sphalerite, chalcopyrite and bornite. A major belt that passes through Asmara includes Debarwa, Adi Nefas, Ad Rassi, Embaderho and numerous other localities. This belt is roughly 50 kms wide over a strike length of 250 kms, extending for more than 50 kms north of Asmara and to the southern border.

Copper: A further sequence that includes the Bisha and Harena deposits is under exploration. There is a belt of copper showings in the Raba-Semait area, in Mt. Seccar and in Mt Tullului (Bedeho) in the Sahel of northern Eritrea and the Sheib area of the Eastern Lowlands.

Nickel and Chromium: Garnierite-chromite-magnesite deposits with nickel contents up to 4% are known to occur in northern Eritrea near the Shamege river, a tributary of the Anseba river.

Iron Ore: For many hundreds, perhaps thousands, of years small quantities of iron ore have been smelted in Eritrea for the manufacture of tools, utensils and weapons. During the Italian occupation several iron ore deposits were worked, and tens of thousands of tons of ore were mined in Eritrea and exported to Italy. Iron deposits in potentially economic concentrations are known to exist in at least five areas: the iron-manganese deposits of Ghedem, the Agametta-Sabub deposit, the deposit of Mt. Tullului, the Eritrean highland deposits, and the deposits of Woki Defere and Taereshi.

Industrial Minerals

Potash, sylvite and gypsum-bearing evaporates occur at Colluli, south of Bada. Substantial deposit of the latter are found at Desset area, north-west of Massawa. Large deposits of common salt also occur at several places along the Red Sea coast.

Considerable quantities of high quality silica are found at Merbet, which has been exploited for glass manufacture. In addition, deposits of silica sand with feldspar occur at various wadis of Eritrea. High purity feldspars occur in pegmatites at Lahazen, 35 kms south of Massawa. Sub economic deposits of mica, which was once exported by the Italians, are found south east of Lahazien. Large deposits of kaolin occur in the lateritic horizon in parts of Teraimni, at Adi Koteio close to Adi Kwala, Adi Keih, Zeghib, Adi Hawusha, Adi Ahderom and west and south-west areas of Himbirti.

Extensive deposits of the raw materials for cement manufacture are found at Adailo, close to Tio with all the constituents including limestone, marl, clay and gypsum occurring close together.

Barite occurrences have been identified around the Heneb, Meter and Gharsa wadis to the north west of Mersa Gulbub. Barite veins also occur associated with faults in the sediments of the Dogali and Desset Formations. Other barite deposits of economic significance, with reported grades of 95-97% are known to exist at Debarwa and Ketina. Gypsum deposits are also found in the Desset plains.

Construction Materials

Large deposits of marble occur as belts running north-northeast including in the Gogne area extending from Gogne to Goranda, and in the Adobha area. Other significant marble deposits occur at Afhimbol, Amberbeb, and Mt Kuruku (in the upper valley of Barka). The Kertse-Komte and Debri black and gray marble deposits occur south of Decamhare and have been exploited for a long time. Recrystallised limestone deposits with variegated colours occur at Dichinema area, in the southwest of Eritrea.

Granites of various colours and textures are exposed over large areas. Granites of dimension stone qualities, and which are currently being exploited, occur at Geleb (pink granite), and in the Arato, Korbaria, and Tukul areas (grey granite). The Mai mine granite and Elabered granite are also suitable candidates for dimension stone.

A narrow outcrop of coral limestone extends along the coast from the headland of Ras Kassar to the coastline of Tio. Immense deposits of limestone occur in the Adailo-Atosh area south west of Tio. A narrow outcrop of coral limestone extends northwards parallel to the coast from Massawa up to the headland of Ras Kassar.

Geothermal Potential

The possibility of the economic exploitation of the geothermal potential for power generation occurs in the rift area, associated with volcanic activity. Alid, Nebro, and Dubi are the main target locations where geothermal activity is known to be intensive. Lower temperature activity also occurs at Mai Wuui, 30 kms west of Massawa.

Geothermal energy: hot springs at Alid

Geothermal activity, evidenced by fumaroles and hot springs with extensive alteration of the ground, are abundant in the Alid geothermal field. Studies carried out so far in this area indicate that the presence of a possible sub-surface high temperature reservoir. The geothermal manifestations at Nebro and Dubbi are also promising, but further study will be required to estimate the reservoir temperature.

The current situation in the mining sector

The mineral exploration companies that are currently active in Eritrea are: Eritrean Minerals Corporation (a subsidiary of MDN Northern Mining), Sunridge Gold Corporation, Nevsun Resources Inc and Sanu Resources Ltd, all of Canada and Sub-Sahara Resources NL of Australia.

Nevsun Resources Inc: **www.nevsun.com. TSE: NSU**

Bisha is a large precious metal and base metal-rich VMS deposit, which has been described, by Dr C. Tucker Barrie in August 2004 as "the most significant VMS discovery found worldwide since Neves Corvo (in Portugal) was discovered in 1977". Suggested models for the deposit include felsic dominated bimodal-siliciclastic VMS and Noranda/Kuroko type deposits and a comparison was made, by Barrie, with the Matagami VMS district in Quebec. At Bisha the total gold in the measured and indicated category is 1,084 million ounces. Overall measured and indicated copper resources in the supergene and primary horizons now stands at 1,005 million pounds. Overall zinc resources in the measured and indicated primary horizons now stand at 1,956 million pounds. The inferred resources category now contains 1,38 billion pounds of zinc and 235 million pounds of copper.

Continued exploration has led to the discovery of two additional satellite deposits within the Bisha Concession; The Northwest Zone, located approximately 1.5 kms northwest of the Bisha Main Zone, and the Harena deposit, located approximately 9.5 kms, along strike, to the southwest of the Bisha Main Zone.

Nevsun Resources (Eritrea) Ltd also holds exploration licences at Okreb adjacent to Bisha, and the AK licence 30 kms northwest of the town of Akordat.

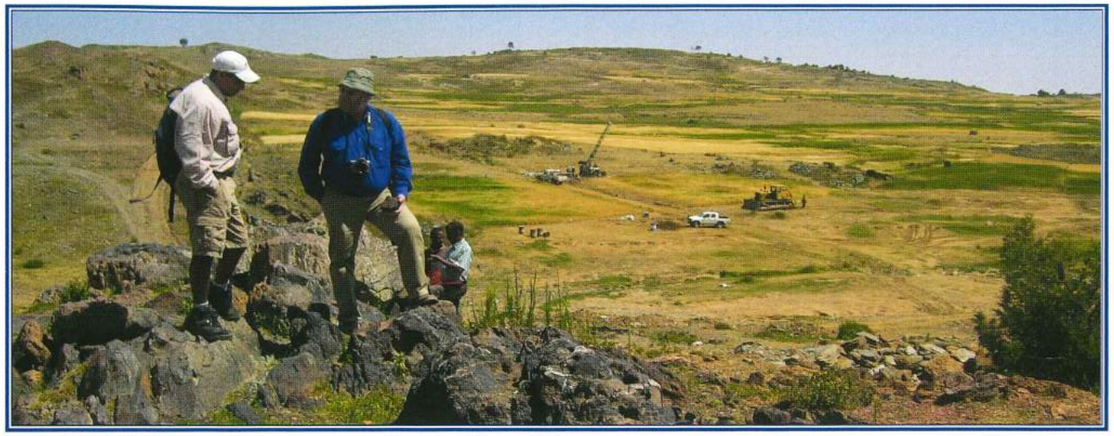
Drilling work on its Augaro Exploration Licence has focussed on targets defined by geochemical anomalies generated by previous exploration.

Sunridge Gold Corp, with Sub Sahara Resources.
www.sunridgegold.com TSX:SGC ASX: SBS

The Sunridge/Sub Sahara licences contain a number of known deposits including: the Debarwa copper/gold deposit; the Adi Nefas Doop gold deposit; the Adi Nefas zinc and gold deposit; and the Medrizien colonial gold mines.

In 1999 Phelps Dodge estimated a resource (not CIM compliant) at Debarwa in the supergene and primary mineralisation, based on their drilling of 12 holes and the drilling of previous operators, of 1,654,420 tonnes at an average grade of 5.10% copper and 1.40 grams per tonne gold. Reverse circulation and diamond core drilling is going on to test the potential strike extensions of the main zone to the south for at least 500 metres and to depth.

Bisha gold – VMS Deposit



The gossan at Adi Neffas, and drilling in 2005

At Adi Nefas drilling has extended the high-grade zinc, gold and copper mineralisation to a total strike length of 400 metres, and the depth to 250 metres vertical depth from surface. Detail mapping and an IP/resistivity survey are underway to look for the extension of the gossan to the south. At the nearby Gupo gold deposit, drilling by a previous operator has outlined an inferred gold resource of 1.965 mt at 2.99 g/t gold.

At the Emba Derho VMS target eleven diamond drill holes have been completed. Sunridge believes that Emba Derho has strong potential for a new discovery based on the significant gossan exposure at surface; over 700 metres in length.

Sub-Sahara Resources NL. **www.subsahara.com.au ASX:SBS**

In addition to its interest in the Asmara project in joint-venture with Sunridge (see above) Sub-Sahara Resources NL (on behalf of Dragon Mining NL) holds the Zara exploration licence, and has undertaken drilling on two of the prospect areas: Koka and Konat.

High-grade gold results have been intercepted on Koka with drillholes intersecting a zone of hydrothermal alteration characterised by carbonate/sericite/chlorite alteration, silicification and sulphidisation. In addition, anomalous values for copper, lead and zinc associated with the high grade gold intercepts could indicate a possible VMS origin to the mineralisation.

Eritrean manpower carrying drill rods up to the Zara prospect

Sanu Resources Ltd. www.sanuresources.com TSX:SNU

Sanu Resources Ltd., has seven exploration licenses at Kerkebet, Fanco, Guluj, Hurum, Lokage, Mograib and Dieba Satta. Work performed on the licenses includes Landsat image interpretation, airborne and ground geophysics, regional and detailed mapping, stream sediment sampling, rock chip sampling, soil sampling, trenching and drilling. This work has identified gold and VMS prospects.

At Bisha North, in the Kerkebet license drilling has encountered disseminated sulphide mineralization, as well as massive sulphide and stringer mineralization. At Mai Melih, in the Mograib license, drilling has tested an exposed gossan horizon and encountered disseminated sulphide (dominantly pyrite) mineralization in graphitic metapelites and narrow stringers of galena mineralization. At Ashelli, drilling to test a gossan and siliceous horizon encountered a corresponding oxide zone extending to about 100 metres below the surface as well as a disseminated and stratiform sulphide mineralization at depth.

The Mai-Melih gossan

Drill holes on the Melhoy gold prospect tested the extent of gold mineralization discovered previously on the Adi Kelbay quartz vein swarm on the Fanco License. In the Adi Kelbay and Hablesh South prospects rock chip sampling of quartz veins have returned up to 10 and 32 grams gold per tonne.

Bulky equipment carried by traditional transport

MDN Northern Mining/Eritrean Minerals Corporation. www.xnord.com TSE:MDN

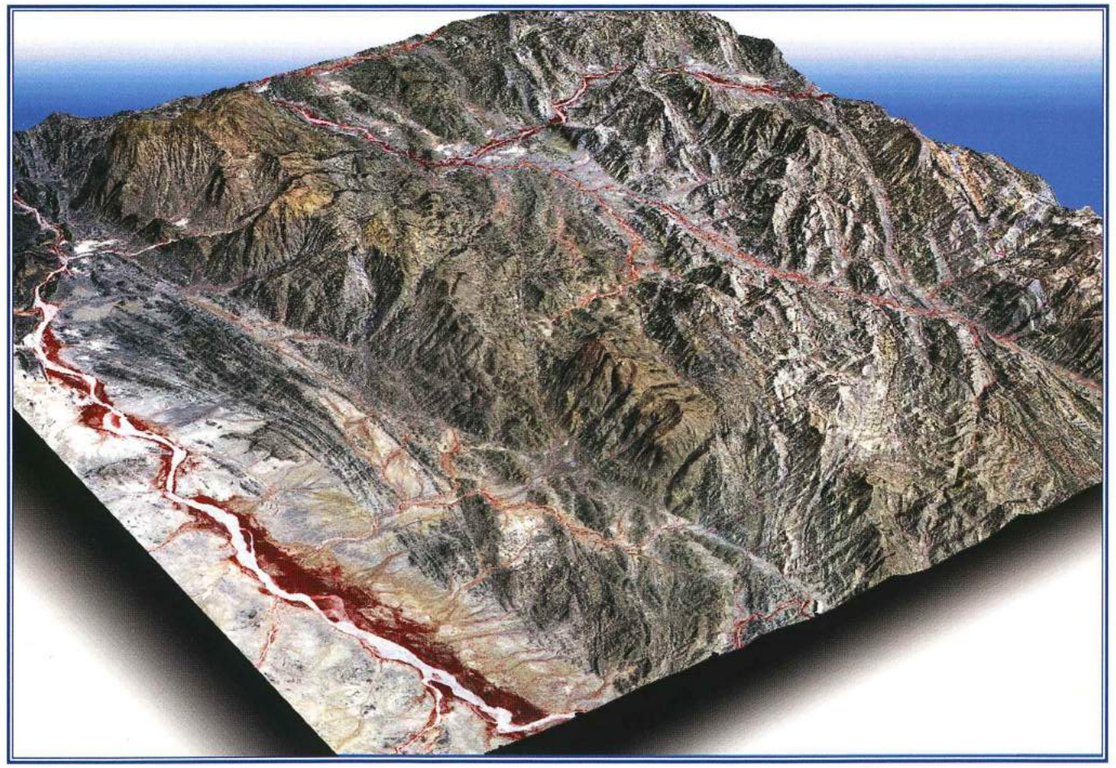
EMC is a 75% subsidiary of MDN Northern Mining and has been exploring in Eritrea for over ten years. Recently, surface exploration programs at the Harab Suit Exploration License area, which includes the abandoned Tamanti gold mine from the Italian era, have identified several promising drill targets on the two main outcropping shear zones that traverse the property. The sampling methods include traverses of contiguous surface channels cut with portable cutters, which have returned values of more than 2 g/t gold over 50 metres at the surface. There are indications in this area of the possible presence of VMS mineralisation, which could be the primary source of the shear-hosted gold deposits. A drilling program is planned for early 2006.

MDN Northern Mining/EMC has also been working on its Matite and Seroa Hill licences, and has lodged applications for two important new license areas in Eritrea.

The future investment opportunities

The future looks promising for the development of a successful mining industry in Eritrea. The recent announcements on the progress of the development projects in the country underline the highly prospective geology. A competitive investment regime, and the Government's commitment to support the progress of the industry, make Eritrea one of the most attractive and rewarding mining investment destinations.

Mineralisation in many parts of the country may be far more complex and extensive than apparent. The level of technology and understanding of the styles of mineralisation that was available in the Italian era was relatively primitive, and most of the historic mines and old mining operations in Eritrea were terminated because of the Second World War.



Harab Suit view looking northeast across the Barka river

The investment climate that prevailed during the independence struggle that followed was hardly conducive to the development of these operations.

Although all the areas of the exposed volcano-sedimentary rocks are obvious targets for mineral exploration, there are other prospective areas that are available for investment, and some of these are summarised below:

Gold Prospects in South-Western and Western Eritrea

The south-western part of Eritrea is one of the most prospective gold regions in the country. It contains hundreds of small historic mining operations that were active during the Italian occupation including the Augaro mine (in an area currently under licence to Nevsun Resources) which was reportedly the most productive mine in Eritrea. There are also areas where artisanal gold mining is currently being undertaken by the local people. Most of these mineral showings and historical mines and old workings are grouped along three river basins: the Gash, Setit, and Barka river basins.

Deposits in the Augaro-Antore Belt

The Augaro-Antore belt is situated in the southeastern part of Western Lowlands of Eritrea. It stretches from the border in the south to the Barka River to the north where its extension is masked by intrusions. Localities known for gold in the lower Augaro-Antore belt include Augaro, Damishoba, Dase, Tokombia, Ranyo and Doboro. The Augaro mine appears to have been developed on a series of quartz veins and stringers, some showing sulphide mineralisation and formed in a low-pressure region associated with a regional shear zone. The mineralised system is known to extend for a distance of 2,900 metres, of which only about 350 metres was mined. The main quartz vein, about 240 metres long, and having an average width of 10 metres, ends in a stockwork of stringers. The main en-echelon system extends over a strike length of 300 metres with widths of 20 – 30 metres. The recovered gold grade is reported to have been 30 – 40 grams per tonne and production during the periods 1933 – 1941 and 1955 – 1956 is recorded at 874 kg, although it is widely believed that the actual production was greatly in excess of this estimate. The mine was closed in 1941 due to war and all its mining equipment was removed. It was re-opened briefly in 1955 to re-treat the tailings.

Other interesting localities in this belt that reached production include Damishoba, Dase, and Ranyo. Doboro, Tokombia and others were still at the development stage, involving pitting and underground exploration, when the Italian occupation ended in 1941.

In the southern part of the belt operations at Antore and Damanoshila, and in the eastern zone of the Berbere River, all were at various stages of development before the Second World War. In the northern part of the belt, at Suzena, prospecting started in 1932, and mining was carried out from 1937 – 40.

Deposits in the Bisha VMS Belt

Based on regional works and satellite image interpretation, the Bisha VMS and associated volcanosedimentary belt is estimated to have a maximum width of about 30 kms and extends for more than 100 kms to the south, while its northern extension is not clear. This belt is believed to be highly prospective and may continue for a substantial distance to the north as well as to the south.

In addition, records of past exploration in this area indicate that quartz veins with varying gold contents have been reported from some locations including Okere (Okreb). Some of these were prospected and exploited before mining stopped due to WWII.

Gold & Base Metal Prospects in Southern Eritrea

There are indications of the continuity of the Asmara/Debarwa VMS belt for long distance to the south. Outcrops are known of gossanous rocks, exhalatives and rock assemblages (felsic and mafic) such as those of the Debarwa area, in the Ketina area. There are also many places where local people are conducting artisanal mining.

Gold & Base Metal mineralisation in Northern Eritrea.

There are indications of gold and base metal mineralization in several parts in northern Eritrea. There are old workings and prospects from the Italian era in Seroa and Arruba, and at Harab Suit. Copper mineralization is known along a belt that passes through the Raba and Semait areas where old workings are reported. Gossanous rocks running for hundreds of metres occur in Halibet area in the far northern part of the country.

Useful information on Eritrea

www.shaebia.com www.shabait.com www.dehai.org

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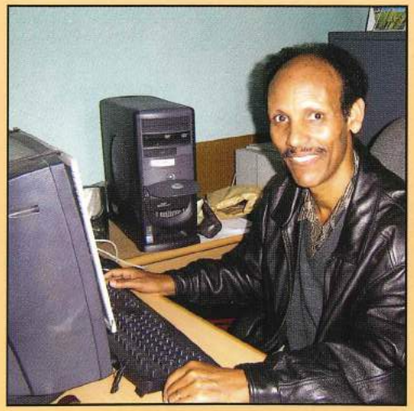

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