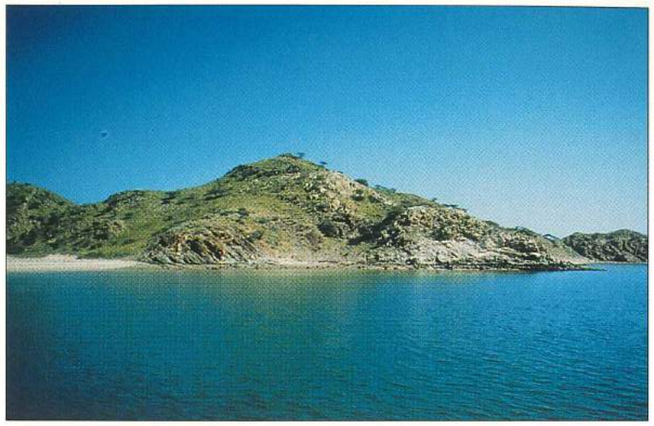
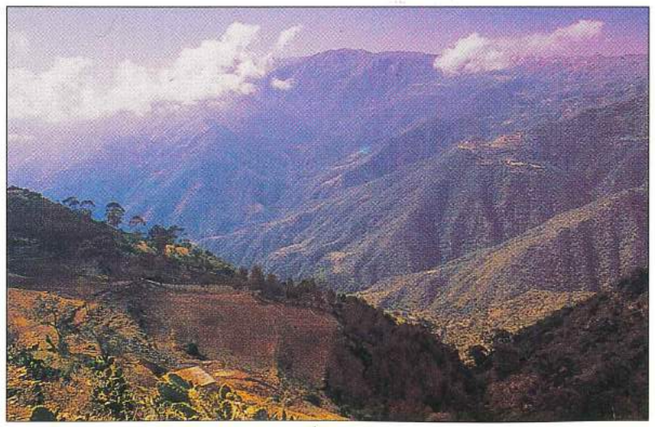
MINERAL PROSPECTS
OF THE
STATE OF ERITREA



ERITREA HAS A COASTLINE OF 1200 KILOMETRES ON THE RED SEA.



THE TOPOGRAPHY OF ERITREA RANGES TO 2,500 METRES ABOVE SEA LEVEL

TESFAI GHEBRESELASIE
MINISTER OF ENERGY AND MINES.

Dear Investors:

I am delighted to bring to your attention the splendid opportunities that Eritrea is offering for investments in mineral exploration.

This brochure aims to acquaint you with the general geological settings and the known mineralized areas of Eritrea. There are ample indications of potential deposits of precious metals - gold in particular, as well as base metals and various industrial minerals and high quality construction materials.

Gold mining in Eritrea can be traced back to ancient times of the Pharaohs. The Italian colonizers were aware of this and sank as many as twenty one gold mines in the country in the 1930's and 40's. Even today, artisanal mining of placer gold by rudimentary methods, and the extraction of gold from quartz veins are widespread in western Eritrea. Despite this activity, the enabling political and security conditions necessary for the development of a modern mining industry did not exist before the Independence of our country.

The Government of the young State of Eritrea is aware of the vital role that the private sector can play in the development of the industry, and in 1995 enacted a Mining Code which is very attractive to investors. The code sets out a number of incentives including a low income tax rate of 38%, 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 repatriate after-tax profits without restriction. The law also permits financial losses to be charged against gross incomes and to be carried forward.

In addition, the Eritrean mining code provides simple procedures for the submission and processing of license applications. During 1996 fifteen prospecting and exploration licenses were granted to seven foreign companies, and an increasing number of international mining and exploration companies are expressing interest in the mineral sector of Eritrea.

The Ministry of Energy and Mines has finalized preparations for a second round of licensing and I take this opportunity to extend a personal invitation to all investors to share in the pleasure and privilege of developing a partnership with us in mineral prospecting and development.

The interesting geology, attractive investment conditions, and favorable political climate in free Eritrea create a rare investment opportunity.

Yours sincerely

Tesfai Ghebreselasie
Minister of Energy and Mines

LEFT:
THE 30 YEAR WAR FOR LIBERATION ENDED IN MAY 1991.

ERITREA: A HIGHLY PROSPECTIVE COUNTRY

Eritrea joined the world community of independent states in May 1993 following a bitter 30 year war for liberation which ended in victory in May 1991. Subsequently, through a UN supervised referendum held in April 1993, the Eritrean people unequivocally reiterated to the world their strong choice for independence.

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 three and a half million people. The country is home to nine ethnic groups, all with a strong sense of Eritrean national unity. Tigrina 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, to the two main sea ports of Massawa and Assab, and to the neighbouring countries. Asmara has an international airport which also serves internal flights. Inevitably, the ravages of war have left their mark on the infrastructure, and the reconstruction of the prime facilities is a high priority. Telecommunication facilities are also being rapidly renovated and developed. Most of the towns in the country now have local exchanges and a newly established communications network has enabled direct telecommunication services with the rest of the world.

RIGHT:
THE RECONSTRUCTION OF THE ROAD NETWORK IS A HIGH PRIORITY.

Eritreans today are working together to rebuild their country. The country's economic policies are directed to the development of a market economy. Eritrea is aware of the significant part that foreign and local private investment and skills will play in the achievement of the country's objectives, and is embarking on policies that will encourage foreign investment and an open market economy.

TOP:
A COPTIC CHRISTIAN CHURCH IN ASMARA.

CENTRE:
THE MOSQUE IN ASMARA SITUATED CLOSE TO THE MAIN THOROUGHFARES.

LOWER:
THE CATHOLIC CATHEDRAL IN THE CENTRE OF ASMARA, CAPITAL CITY OF ERITREA.

The Government of Eritrea enjoys the overwhelming support of the people, and is committed to the creation of an environment in which economic development can flourish by maintaining the highest standards of honesty, integrity and democratic accountability. The government is also determined to encourage the growth of the mining industry, both by individual and corporate involvement, and has put in place a range of fiscal concessions in addition to the incentives contained in the Investment Code.

Eritrea is now actively seeking new investment in the mineral industries. Every effort is being made to facilitate the long term growth of the mining industry to the benefit of the country. Already several major mining companies from around the world, together with some junior exploration companies, are engaged in significant prospecting and exploration programs in different parts of the country, and more are contemplating substantial involvement.

THE GEOLOGY OF ERITREA

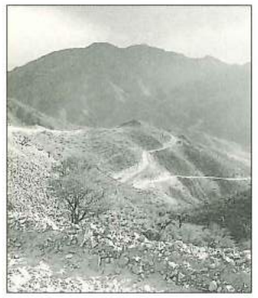
The geological environment of Eritrea is made up of Precambrian basement, rocks which are overlain unconformably by predominantly Mesozoic sedimentary rocks and Tertiary to Quaternary volcanic and sedimentary rocks.

Precambrian Basement Rocks

The basement rocks in Eritrea are exposed over more than 60% of the surface of the country. Previous descriptions have subdivided these basement sequences into high grade gneisses, and low grade volcanosedimentary successions. Recent studies however, largely based on satellite image interpretations 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 south eastern part of the country.

The western segment -the **Barka Terrain** - is exposed in the north-western part of the country and underlies the Barka lowlands. The Barka Terrain is made up of amphibolite, amphibole facies pelites containing kyanite and staurolite, quartzites and marbles. Because of the presence of features indicating a polyphase structural history and evidence of high (upper amphibolite) metamorphic grade, the Barka Terrain has been interpreted as older continental crust or displaced deep Pan African crust.

The central segment, referred to as the **Hagar Terrain**, extends from the Barka river up to the Adobha Abiy valley in the east, and comprises several large elliptical bodies of various tectonic units which are largely composed of oceanic and accretionary wedge materials. Occasionally, layered sequences of chloritic schists are seen, inter-layered with epidotic



RUGGED MOUNTAIN CHAINS RUN FROM THE CENTRAL PLATEAU TO THE NORTH OF THE COUNTRY.

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 and nickel mineralisation.

The eastern segment- the **Nakfa Terrain** - is bounded by the Adobha Abiy 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 is also transected by several narrow shear zones sub-parallel to the regional strike. The Nacfa Terrain is considered to represent a relict island arc assemblage. Several 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 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 at places appear to have the characteristics of a glacial deposit. Overlying the sandstone is the Jurassic Antalo Limestone. This unit is exposed over a large area in the Danakil and is made up of limestones which 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 marly, gypsiferous to dolomitic. The Amba Aradom, or 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 which are predominantly olivine basalts with intercalations of intermediate lavas and tuffs; (2) the lower Afar Stratoid 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,

LEFT: LOCAL FARMING COMMUNITIES FORM AN IMPORTANT PART OF THE ERITREAN ECONOMY.

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.

RIGHT:
LOCAL GIRLS PANNING GOLD AT TOCOMBIA.

MINERAL POTENTIAL OF ERITREA

Eritrea has a long mining history which 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 this century following the Italian colonisation of the country. 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 war forced its closure.

Recent re-evaluation of the available records on these early operations strongly indicates that these 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 superceded. It can be expected that more up-to date technology and exploration methods will lead to the identification of previously unsuspected styles of mineralisation, and it is also possible that known deposits previously regarded as uneconomic may prove to be

THE COUNTRY IS HOME TO NINE ETHNIC GROUPS, ALL WITH A STRONG SENSE OF ERITREAN NATIONAL UNITY.

economically viable with today's technology.

Several areas of significant mineralisation are known in the country, and Eritrea has a geological setting that is favourable for both precious metals and base metal mineralisation, as well as for industrial minerals. The range of identified deposits covers gold, polymetallics and several base metals hosted in both quartz veins and in massive sulphide type deposits. There is also chromite known from the ultrabasic rocks in the far north of the country, potash and sulphur evaporites in the Danakil depression, and a variety of construction materials, including marble, granite and others recognised in several parts of the country.

Gold

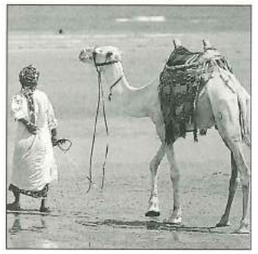
At present, two main regions are known for their primary gold: the central highland area (which includes Medrizien, Adi Shemagle, Hara Hot, Adi Nefas, Debarwa, Adi Rassi and others), and the Gash-Setit area (which includes Augaro, Damishoba, Antore and Suzena). Significant alluvial gold is also known at Shillalo and in southern Seraye. The average head grade in most of the historic mines was reported to be as high as 25-45 grams per ton, with reasonably good recovery after milling. The known primary gold deposits in Eritrea occur in veins associated with quartz sericite, chlorite, amphibole, cordierite, and other schists. Many of these veins are associated with dioritic or diabasic intrusions, or occur in shear zones, and are frequently sub-parallel to the strike of the pronounced cleavage of the Precambrian rocks.

Base Metal Deposits

Base metal deposits, mainly of copper, zinc, and lead sulphides have been known for a long time in the Asmara region. The ores of these massive sulphide deposits are predominantly chalcocite, pyrite with minor amounts of sphalerite, chalcopyrite and bornite. Major massive sulphide deposits occur in Embaderho, Adi Rassi, Debarwa and Adi Nefas. In addition, copper mineralisation is reported in the Raba-Semait area, in Mt. Seccar, and in Mt. Tullului near Bedeho (Challenge Road), in the Sahel province.

Detailed investigation carried out by joint Ethiopian-Japanese experts in the Asmara region in the early seventies revealed that this zone contains apparently economic quantities of other associated valuable minerals including gold and silver. The areas examined included the Debarwa, Adi Rassi, Embadaho, and Adi Nefas deposits and the Shiketi, Lamza Saharti Woki and Catina areas. At Debarwa, an average grade of 7.63% Cu, 1.29 g/t gold, 30 g/t silver and 1.80% zinc has been estimated, while at Adi Nefas grade estimates have been reported to be 13% Zn, 1.4% Cu, 1.6% Pb, 4 g/t Au and 160 g/t Ag.

More recent investigations by several senior experts of various companies have confirmed that Eritrea has excellent potential for the discovery of major base metal deposits. The presence of banded ironstone formation in some areas has also added further interest.



TOP
THE PORT OF MASSAWA ON THE RED SEA IS ABOUT 80 KILOMETRES FROM ASMARA.

BOTTOM
CAMELS STILL PROVIDE AN EFFICIENT MODE OF TRANSPORT IN THE COASTAL REGIONS.

Nickel, Chromium and Asbestos

Garnierite-chromite-magnesite-asbestos deposits with nickel contents up to 4% are known to occur in northern Eritrea near the Shamege river, a tributary of the Anseba river. Besides nickel and chromium, the serpentinites of Shamage contain asbestos, and other asbestos showings are also known at Arafali on the Red Sea coast, in the Danduro valley and at Durfo.

Iron Ore Deposits

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 discovered, 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 evaporites occur at Colluli, 16 km east of Dallol in the Danakil area. Large reserves of common salt occur in the Dahlak Archipelago and at several places along the Red Sea coast.

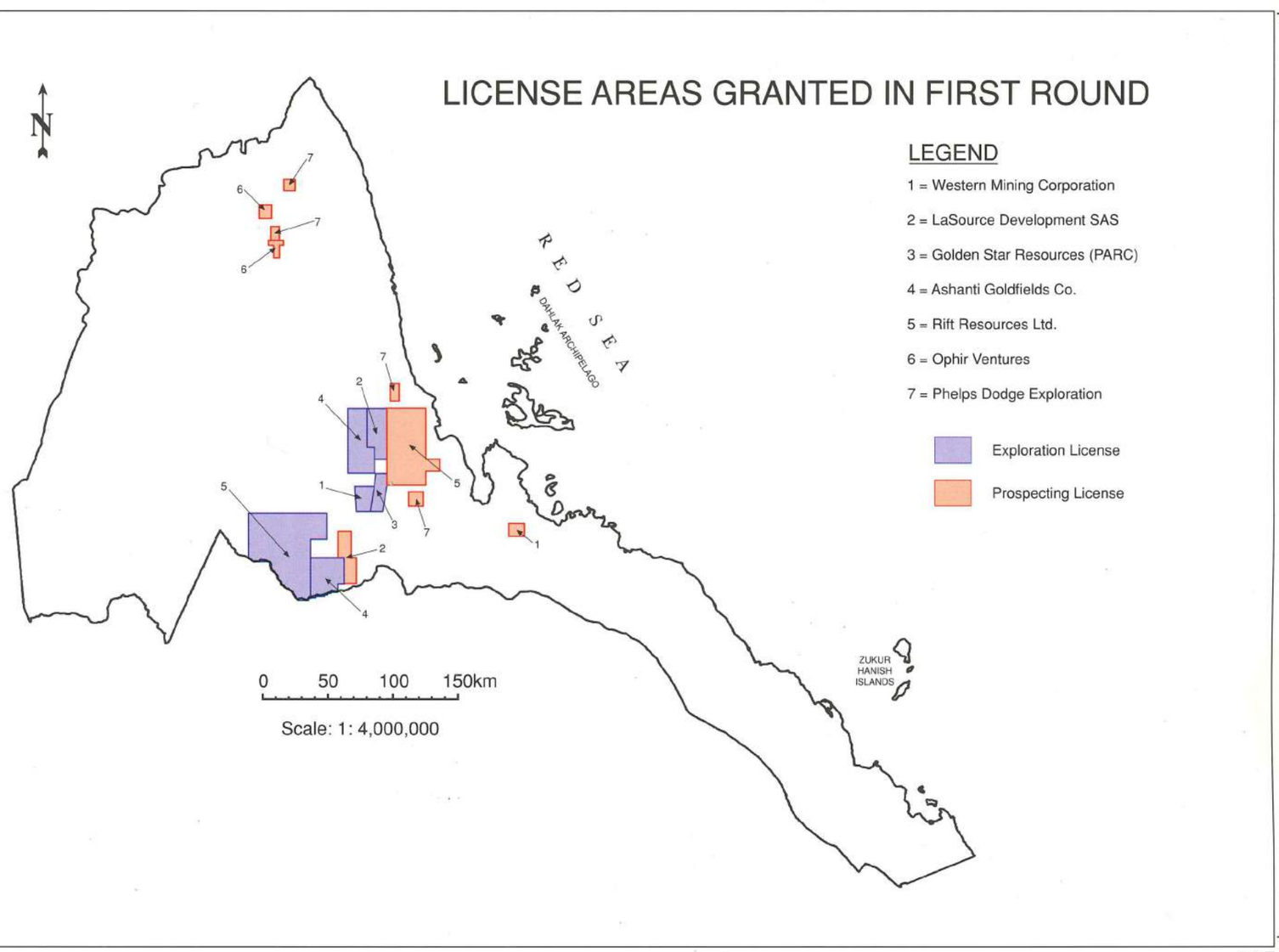
Large reserves of silica sand with admixtures of feldspar are found in various wadis of Eritrea, and high quality feldspars occur at Shiliki, 35 km south of Massawa. Sub economic deposits of mica, which had been exploited by the Italians for export, are found south-east of Shiliki. Large deposits of kaolin occur in the lateritic areas of Teramni, Adi Kaieh, Adi Hauesha, Zegrib, Adi Ahderom and Adi Abeito.

Barite occurrences have been identified around the Heneb, Meter and Gharsa wadis to the north west of Mersa Bulbub. 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.

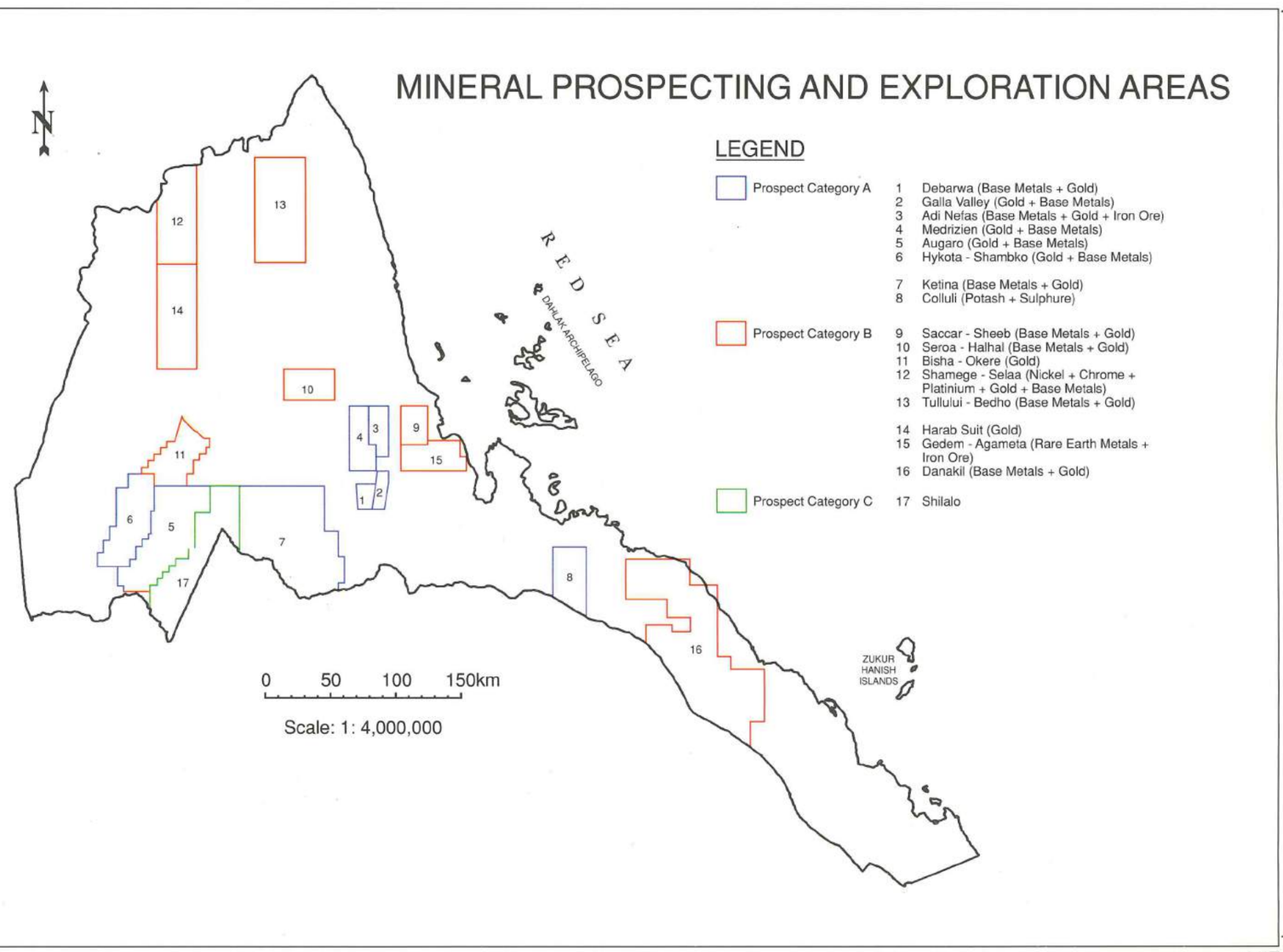
Construction Minerals

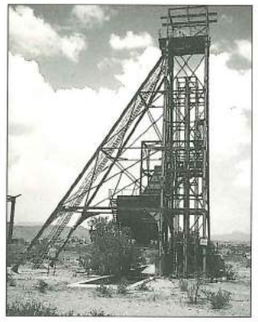
Large deposits of marble occur at Gogne, Amberbeb, Mt Kuruku (in the upper Barka valley) and at the Kertsekomte and Debri areas in southern Eritrea. Granites of various colour and texture outcrop over large areas in Eritrea. A narrow outcrop of coral limestone extends northwards parallel to the coast from Massawa up to the headland of Ras Kassar. Also, in the southern part of Eritrea, limestone outcrops between Digsa and Barakit, near Adi Kaieh and Arberebu.

LICENSE AREAS GRANTED IN FIRST ROUND



MINERAL PROSPECTING AND EXPLORATION AREAS





THE HEADGEAR OF THE DEBARWA COPPER MINE, CLOSED DUE TO HOSTILITIES IN 1974.

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: *Mining 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 ski11s 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 newly promulgated 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;

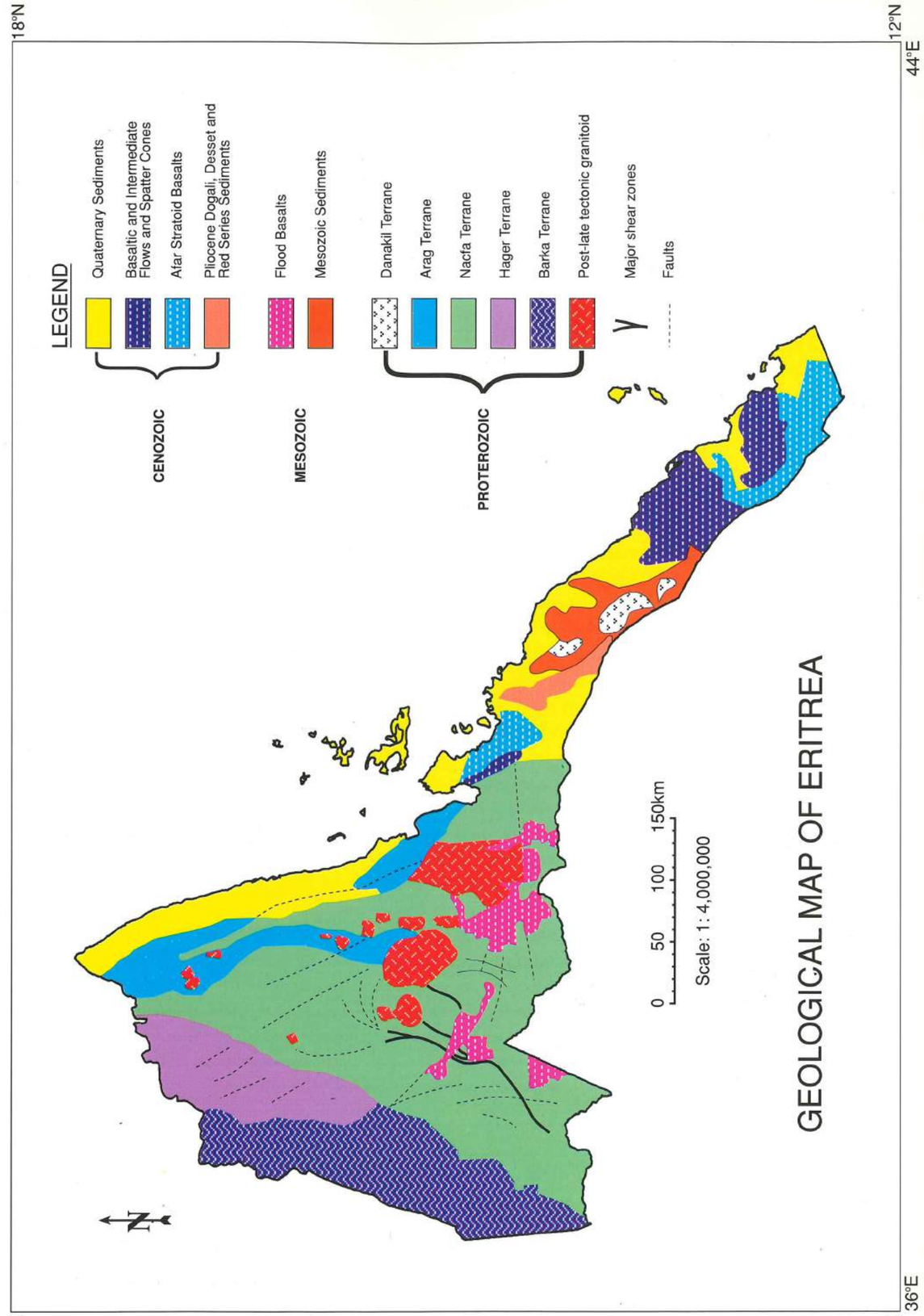
- A simple and fair taxation system which recognises the risky nature of mining investments, and hence allows:
  * Accelerated depreciation (straight line method over 4 years) of all capital and pre-production costs;
  * Write-offs of exploration expenditure incurred anywhere in the country;
  * The 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;

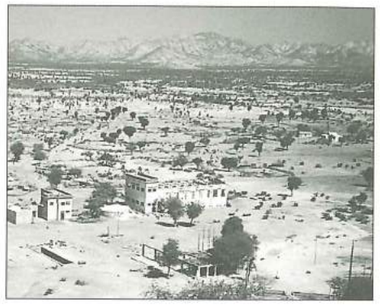
- Normal royalty rates as well as an option for the reduction, suspension or waiver of the royalty in appropriate circumstances.

- 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 Ministry of Energy and Mines.



AN ABANDONED GOLD MINE FROM THE ITALIAN COLONIAL ERA.



THE MINERAL LICENSING SYSTEM

The Ministry of Energy and Mines is the appointed 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 Control Division and is also itself actively engaged in exploration and mapping activities.

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 100km^2 for a Prospecting License, 50 km^2 for an Exploration License and 10km^2 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 Mines Department of the Ministry and must be accompanied by a non-refundable processing (registration) fee of Birr 10 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)		Annual Rentals (per km^2)	
	Birr	US$ (approx.)	Birr	US$ (approx)
Prospecting	500	80	50	8
Exploration	1500	240	200	32
Mining	6000	960	600	96

A DRILL RIG OPERATED BY A MAJOR MINING COMPANY NEAR ASMARA DURING 1997.

THE CURRENT SITUATION IN THE MINING SECTOR

The Eritrean mining sector has shown rapid development over the past few years. Since the independence of the country, the Ministry has been making every effort to rehabilitate the mining industry.

As a start, the Ministry has made great efforts to collect and reclaim all the available data on previous exploration and mining activities in Eritrea. The Ministry is now in possession of most of the documentation on past exploration, and this is readily available to interested parties. To facilitate access to and retrieval of this data, the Ministry is working on a project to establish a computerised database of geological and related information.

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. The Department of Mines, through its research wing - the Geological Survey - has been working, together with various foreign governmental aid agencies, to carry out geological mapping and mineral exploration.

The AusAid (Australian Aid Agency) sponsored Eritrea-Australia Mineral Exploration Project, EAMAP, has been conducting geological mapping at a scale of 1:100,000. EAMAP has also completed geochemical sampling, including stream sediment and pan concentrate sampling, in the southern part of the country, and has recently handed over the encouraging results that it has obtained to exploration companies which have acquired exploration rights in the area. The Eritrea-Norway Geological Co-operation Project–ERINOR - a project funded by NORAD (the Norwegian Aid Agency) is conducting similar activities in the western part of the country. Recently, the ERINOR project has successfully carried out an airborne geophysical survey in this region. This information has significantly improved the geological knowledge of the area and should encourage exploration activities. Despite the existence of plenty of historical mines, this part of the country has barely been explored using modern techniques.

Private, and in particular foreign, investment has a significant part to play in the rehabilitation of the mining sector. The Ministry has therefore laid down the legal framework that not only authorises but should also encourage investment in the mining industry. Following the promulgation of the Mining Law the Ministry issued a directive dividing the country into delineated "Prospect Areas" comprising a number of Prospecting and Exploration License blocks. A copy of this directive may be obtained from the Department of Mines. The deadline for submitting applications for Prospecting and Exploration Licenses for this "First Round" of licensing was set as

AN ERITRAN GEOLOGIST FROM THE DEPARTMENT OF MINES CONCENTRATING HEAVY MINERALS, INCLUDING GOLD.

ALLUVIAL GOLD RECOVERED AT SHILALO IN 1995.

November 30, 1995. The First Round attracted considerable attention from around the world, and numerous applications were received from both major mining companies and junior exploration companies.

For administrative reasons, the Ministry decided to limit the First Round of Licensing to the central and northern parts of the country, despite the high level of interest shown by several companies to work in other parts of the country. Subsequently, seven mining and exploration companies were awarded Prospecting Licenses or Exploration Licenses in the First Round. The companies were: Phelps Dodge Exploration Corporation of USA, WMC (Overseas) Pty. Ltd. of Australia, La Source Development SAS of France and Australia, Ashanti Goldfields Co. Ltd. of Ghana, Golden Star Resources Ltd., (Pan African Resources Corporation), Rift Resources Ltd., and Ophir Ventures Inc. of Canada.

These new members of the Eritrean Mining Industry have been engaged in aggressive prorammes of prospecting and exploration in several parts of the country. There is an atmosphere of harmony and co-operation between the foreign private-sector companies, and the Ministry and other governmental authorities.

THE FUTURE: INVESTMENT OPPORTUNITIES

The future of Eritrea's mining industry appears bright, as the very prospective geology together with an attractive and competitive investment regime makes Eritrea one of the most attractive and rewarding mining investment opportunities.

Following the grant of prospecting and exploration licenses in the central and northern parts of the country in the First Round, the Ministry has been making preparations to grant similar rights in the rest of the country. It is worth noting that exploration operations in the south-west have had to be delayed purely for administrative reasons, despite the exceptional prospectivity of the area and the considerable interest from investors.

Gold Prospects in South-Western Eritrea

The south-western part of Eritrea is one of the most prospective gold regions in the country. It contains hundreds of historic mines that were operational during the Italian occupation including the Augaro mine, which was apparently the most productive mine in Eritrea. Most of these historical mines and old workings are grouped along three river basins: the Gash, Setit, and Barka river basins.

Deposits in the Gash River Basin.

Localities known for gold in lower Gash basin include Augaro, Damishoba, Dase, Tukombia, 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

LEFT:
ERITREA CONTAINS HUNDREDS OF CORAL ISLANDS IN THE RED SEA, WITH SUPERB DIVING.

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. Most of the mining operations appear to have been undertaken from adits on five levels. Gold may be present in the wall rocks as well as in the quartz veins. According to Usoni the gold grade recovered was 30-40 grams per ton and production during the periods 1933-1941 and 1955-1956, is reported to be 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.

Gold-bearing quartz veins are widespread in the Augaro area. Interesting localities in this area which reached production include Damishoba, Dase, and Ranyo. Doboro, Tukombia and others were still at the development stage, involving pitting and underground exploration, when the end of the Italian occupation occurred.

Deposits in the Setit River Basin

In the Setit River Basin, the Damanoshila and Antore localities and the eastern zone of Berbere River were at various stages of development before the Second World War forced their interruption. At Suzena (12km east of Barentu) prospecting started in 1932, and mining was carried out from 1937-40. Drifts on three levels were developed, but work was abandoned on the fourth level due to water problems.

Deposits in the Barka River Basin

In the Barka River Basin7 quartz veins with varying gold contents are reported from several locations including Okere (Okreb), Harab Suit, Seroa and Arruba, some of which were prospected and exploited. Okere and Harab Suit stopped mining due to war, while Seroa and Arruba were abandoned for technical and financial reasons.

Mineralisation in this part of the country may be far more complex and extensive than apparent. The level of technology and understanding of mineralisation styles that prevailed during the Italian occupation was low, and most of the historic mines and old mining operations in Eritrea were interrupted only because of the Second World War. The investment climate that prevailed during the independence struggle that followed was also not conducive to the development of these operations. There is no doubt that this part of the country deserves further investigation.

RIGHT:
ERITREA IS A HIGHLY PROSPECTIVE COUNTRY WITH MANY WELL EXPOSED MINERALISED LOCATIONS.

QUOTES

"The interaction between representatives of our company and members of the Ministry of Energy, Mines and Water Resources and the Business Licensing Office has been amicable, efficient and productive. It is evident that the Government is making every effort to encourage and facilitate foreign investment and business development in Eritrea. The practical experiences of our Corporation in conducting mineral exploration operations in the country have substantiated this impression"

Michael J. Evans
Vice-President: Africa
Phelps Dodge Exploration Corporation

"Ophir Ventures' Management has visited and worked in Eritrea six times since early 1995. We were initially impressed with the co-operation of government authorities and the people of Eritrea, and our respect has only increased over time.

Ophir management and technical team members have worked in many countries in all continents other than Antarctica. We find the geology of Eritrea to be most appealing, and the hospitality and co-operation of Eritreans to be especially warm. Great care is taken by national and local authorities, including the military, to provide the safety and convenience of our workers."

Robert M. Ginn, Ph.D., P.Eng.,
Executive Vice-President Ophir Ventures Inc.

"The courage, integrity and determination of the Eritrean citizens are qualities that urge any private investor to want to participate in the reconstruction and development of this nation. Free Eritrea is a new country with definite high potential in people and in prospects for mineral resources."

Lucien Toux
Project Manager
LaSource Development Eritrea

"Golden Star Resources Ltd., and its specialised African gold exploration subsidiary Pan African Resources Corporation, have been active in Eritrea for the last two years. The company considers Eritrea to have excellent geological potential for economic gold mineralisation. The geological terrain provides an excellent opportunity for gold exploration in an area that has an ancient history of gold exploitation, but has been relatively untouched by modern exploration techniques. This terrain has positive geologic and mineralisation analogues to the traditional productive greenstone terrains of the world. The various governmental Ministries and Agencies provide rapid, effectual assistance to potential investors operating in the country, making Eritrea a unique country for investment. The relative ease of doing business and unobstructed operating conditions prevailing in the country result in cost effective exploration"

Sean Kedda
Project Manager, GSR/PARC

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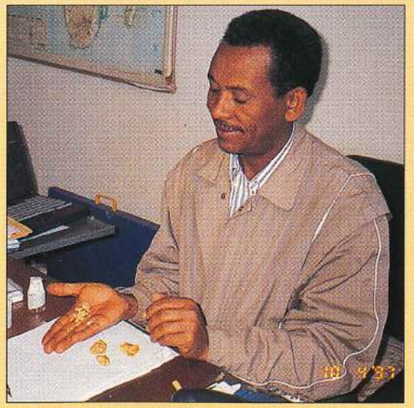
ALEM KIBREAB
DIRECTOR GENERAL,
DEPARTMENT OF MINES

ASMEROM MESFIN
DIRECTOR OF MINES CONTROL



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