

## SIERRA LEONE

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A ceasefire came into force on May 24, 1999 following the signing of the Lomé peace accord. The RUF gained a share in government and their leader, Foday Sankoh, was given vice-presidential status and the chairmanship of a new Minerals Commission to control mineral development.

A United Nations Monitoring force (UNAMSIL) gradually took over peace-keeping and disarmament duties in the country from the West African peace keeping force, ECOMOG.

However, the process ground to a halt a year later and fighting re-commenced, when UNAMSIL troops started to move into the diamond-producing heartlands of the RUF. Both sides blamed the other for the problem, the government and the UN said the RUF were impeding their mandate to ensure disarmament. The RUF said the government was dragging its feet over implementing the Lomé Agreement allowing the RUF to form a political party and to have a share in government, particularly with regard to mineral development policy.

One year after the cease-fire, the RUF again had to be pushed back from entering Freetown, this time under British Army guidance. The RUF took many UNAMSIL peace-keepers hostage but Foday Sankoh himself was again in prison.

However, many lessons were learnt from this period with the international community realising the need to work regionally to recognise and solve problems and the process is now very much back on course. Following months of negotiations between UNAMSIL and the RUF, new peace talks were held in Abuja and the process restarted. Regular talks are now held between the

Government of Sierra Leone and the RUF leadership and disarmament is in progress with several areas in the north of the country having been disarmed first to allow stabilisation of the Guinea-Sierra Leone border area. Disarmament in the Bonthe area in the south of the country will enable rapid progress on the rehabilitation of the rutile mines and disarmament of the Kono district, the main diamond area, will follow through the Summer of 2001. Presidents Kabbah and Conteh have met at the border of Sierra Leone and Guinea. It remains for them to meet with the president of Liberia at their respective borders to ensure that the whole region can start to seriously develop.

### **Geology and Mineral Potential**

Highly prospective Archaean granite-schist belt terrain of the Leo Shield makes up 70% of the country. The mineral potential was recognised in startling fashion by geologists from the Geological Survey of Sierra Leone in 1926-30. Stream-sediment sampling picked up occurrences of diamonds, gold, rutile, platinum, iron ore, chromium, bauxite, ilmenite, tin and other minerals. The potential of the Continental shelf to host petroleum, (following success in neighbouring countries) and diamonds has recently been recognised.

### **Mining**

Although only artisanal mining is in progress at the moment, the moves towards peace have allowed the first signs that the industry is preparing to become active.

### **Diamonds**

The World Diamond Council has been created to try to stamp out the trade in conflict diamonds, estimated by the UN to amount to some 20% of all diamond production, with Sierra Leone, Angola and the Democratic Republic of Congo the principal sources of

conflict diamonds. More recently, the UN Security Council has voted to impose sanctions on all diamond exports from Liberia. This initiative means that an increasing quantity of both Sierra Leone's and Liberia's rough diamond production now makes its way to the Government Gold and Diamond Office in Sierra Leone, rather than looking for alternative routes through Liberia, Conakry, Abidjan or other African capitals. According to the Minister of Mining, Mohammed Deen, revenues for official diamond sales were US\$10.7 million in 2000, as opposed to US\$1.5 million in the previous year. How this production relates to the true Sierra Leone and Liberian production is yet to be ascertained: although some observers suggest that the new level still represents only 10% of Sierra Leone's true production.

Selection Trust was the first company to undertake diamond mining in Sierra Leone and began production in the Kono field in 1935, signing an exclusive licence with the government. Most production was alluvial but three small diamondiferous kimberlite pipes and a number of dykes were discovered and a limited amount of mining completed. National Diamond Mining Corp. (NDMC) took over the mines from Sierra Leone Selection Trust (SLST) in 1970 but problems of illicit mining and security mounted and both NDMC and SLST went into liquidation in 1993.

Since then only artisanal diamond mining has taken place in Sierra Leone with the Sierra Leone Government and the international community claiming the RUF use the sale of diamonds to purchase weapons to continue the civil war.

### **Gold.**

Between 1930 and 1955, artisanal and semi-mechanised gold mining spread around all areas of alluvial gold in the main schist belts of the Sula Mountains, Kangari Hills, Nimini Hills and Gori Hills. Bedrock gold deposits were mined in semi-mechanised operations at Baomahun, in the Kangari Hills and in the Sula Mountains at Darakuru near Lake

Sonfon and Yirisen, Local people around Lake Sonfon had for years been bringing gold from Mali and Guinea to perform ceremonies associated with the Lake.

### **Rutile**

Rutile mining commenced in 1967 from mineral sands in the southeast of the country and in the period 1990-95 annual output of close to 150,000 t of ilmenite and 60,000 t of rutile represented 25% of world production. The operating company, Sierra Rutile, was owned by Nord Resources Corp. of the US and Consolidated Rutile Ltd. (CRL) of Australia. The mine was closed during the period of civil unrest in Sierra Leone but has been maintained on a care-and-maintenance basis. Three studies have been made for the re-opening and enlargement of this mine since 1996 with a programme involving assistance from the European Union's Sysmin Fund proposed. Sierra Rutile has now been taken over completely by MIL Investments SA, a company owned by Jean Raymond Boule, who has had a controlling interest in Nord Resources for sometime. The World Bank is expected shortly to approve a US\$10.5 million renovation project and preliminary rehabilitation has commenced prior to re-opening within a two-year time frame. Sierra Rutile are in the process of raising US\$110 million through the IFC/OPIC/CDC and DEG with political risk insurance through MIGA.

Haz Care Mining Pty Ltd, a subsidiary of Consolidated African Mines of Australia, is still in the process of applying for a mining licence for rutile mining at Rotifunk. A feasibility study proposes a 7 Mt/y operation producing 36,800 t rutile, 38,000 t high titanium ilmenite and 34,800 t zircon. Measured reserves are 163.6 Mt at 0.48% rutile and indicated reserves are 44.3 Mt at 0.5%.

### **Bauxite**

Bauxite is associated with weathering of hypersthene feldspar rich rocks of the Kasila Group which forms a NNW-SSE trending belt

along the edge of the West African Craton. Sieromco (Alusuisse), began mining at Moyamba in 1963. Up to 1995 production was 1.5 Mt/y averaging 55-56% aluminium. Sieromco has handed over control of the mine to the government in return for its liabilities and negotiations are at present in progress with Sierra Rutile to take over the operation of the mine. Many of the assets were destroyed during the civil unrest but Sierra Rutile's operation is close enough that it should be possible to keep costs down by sharing facilities such as workshops.

### **Dimension Stones**

Olympus Mining Ltd began a pilot quarry operation near Freetown in 1995 leaving in 1997. It also has licences in the southeast and wishes to return in the near future. A second company Swalford, has also taken out licences. It appears that South African based dimension stone companies are very keen to establish a base for the production of products in west Africa; believing that from west Africa to Europe they can significantly reduce their transport costs, in relation to their costs from South Africa.

### **Exploration Diamonds**

The known kimberlite pipes and dykes have reserves to 600 m depth, estimated to contain at 6.3 Mct at Koidu and 3.2 Mct at Tongo. Diamondfields, which owns a mining lease over Pipes 1 and 2 at Koidu, was on the point of processing a bulk sample at the time of the *coup d'état* in 1997 and is now planning to re-establish its operation in the country.

Recent exploitation in the Koidu and Tongo areas has consisted of mining alluvial and weathered kimberlite deposits by artisanal miners attached to one or other of the factions in the civil conflict. Considerable interest has been focused by the international community on the process of policing the production of diamonds in Sierra Leone and a certification scheme for the sale of diamonds originating in the country has now been established. Following a period of testing it is

intended to establish a similar system world-wide.

The Artisanal Mining Licence scheme, which allows for licences of one year to Sierra Leone nationals and majority-holding partnerships over areas of 25 acres, continued to operate normally over the south and southeast of the country throughout the conflict. However, all licences in rebel-held areas have now lapsed and a full review of the scheme is expected before any new licences will be issued.

It is essential to point out that this review in no way prejudices the position of companies holding exploration and prospecting licences for diamonds now held under *force majeure* status. Artisanal mining is always going to be difficult to control. What is desperately required to stabilise and increase production for the benefit of Sierra Leone and its people, is a systematic scientific exploration programme throughout the diamondiferous areas to find bedrock diamond deposits. This would allow the development of mines, which, along with mines of other commodities, should provide the catalyst for Sierra Leone's development in the same way that mines have developed the economy of Botswana. In 1997 Mano River Resources proposed such a scheme, in co-operation with the government, for the Kono diamondfields and it is intended to commence this programme as soon as possible.

There is also considerable potential for offshore diamonds, and both Casierra Development Fund and De Beers have completed preliminary exploration programmes in the past few years.

### **Gold**

Gold mining largely ceased following agreement of the government to the Alluvial Diamond Mining Scheme in 1956, which for the first time legally allowed local people to mine diamonds. Gold exploration recommenced in the 1960s when the Geological Survey undertook drilling

programmes for gold and base metals at Baomahun, Dalakuru and Komahun in the Nimini Hills. Harry Winston undertook a programme of underground development and drilling at Baomahun in the late 1980s, established a pilot heap-leach pad and went into partnership to develop the deposit with Golden Star Resources. Subsequently, the work was interrupted by the civil disorder in the country. Following the election of President Kabbah in 1996, Exploration and Prospecting Licences for gold were granted over almost all the known areas prospective for gold in Sierra Leone. However, only a few companies commenced work; Mano River Resources and Golden Prospect being the most serious.

### **Petroleum**

Following geophysical surveys across the continental shelf of Sierra Leone, two oil wells were drilled in the early 1980s. Following recent research suggesting that the oil trap structures are likely to be in much deeper water there has been renewed interest in the area.

The government signed a non-exclusive survey agreement in August, 2000 with TGS/NOPEC (of Houston, Texas and Oslo, Norway respectively) for a US\$3.5 million, 2,500 line kilometre, two-dimensional seismic survey of the continental shelf. A follow-up programme of 3,200 line kilometres of in-fill has now been completed for the central and eastern continental shelf area and the company followed this up with a 9,000 line kilometre survey of the Liberian continental shelf. The government of Sierra Leone is in the process of reviewing its petroleum law to bring it into line with other petroleum-producing nations and, following this passing into law, will ask for bids for blocks of the shelf. This includes the possibility that a major explorer could take the whole region of interest. The government has asked TGS/NOPEC to supervise this process on its behalf with a bid round proposed for late 2001, with successful tenders being advised by February, 2002. Follow-up exploration expected for the 2002-3 season would include three-dimensional seismic imaging and proposals for the drilling of wells.