

## ETHIOPIA

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Ethiopia, a landlocked country in eastern Africa covers an area of some 1.1 million km<sup>2</sup> and most of its 68 million live in poverty. Agriculture contributes half of GDP, 60% of exports and 80% of employment. War with Eritrea and recurrent drought have served to undermine the economy. In 2003, GDP shrank by 3.8%, with *per capita* GDP in terms of purchasing power parity amounting to just US\$700. The government, which took office in August 1995, is led by the Ethiopian People's Revolutionary Democratic Front (EPRDF) and purports to promote ethnic federalism and more power for the country's nine administrative regions.

Coffee is the principal export and was worth US\$156 million in 2002. However, the effect of drought and low coffee prices took their toll in 2003 and oil seeds have become the second-largest export after coffee. The government estimates that annual GDP growth of 7% is needed if the country's poverty is to be tackled effectively.

The severe drought in 2002 and the ensuing famine, has prompted greater water-use consciousness in Ethiopia and the government has initiated a widespread water conservation programme involving the construction of underground reservoirs that can be used by farmers during the dry session. Resettlement of families from drought-prone areas and highly populated areas to sparsely populated and fertile areas has also started. The government has been a strong critic of the previous regime as regards its resettlement programme because it was not adequately thought through and not based on the voluntary wish of the people.

There has also been much discussion about the use of Ethiopia's river systems, including the Nile, and the past agreements signed between Egypt and Sudan in 1929 and 1955 concerning the use of the Nile's waters. Under the 1929 agreement, Egypt was allocated 48 billion m<sup>3</sup> annually and Sudan 4 billion m<sup>3</sup>. The 1955 agreement revised the average annual distribution of Nile water, increasing Egypt's share to 55.5 billion m<sup>3</sup> and Sudan's to 18.5 billion m<sup>3</sup>. Available information indicates that 72.0 billion m<sup>3</sup>, which is about 86% of the Nile water, originates from Ethiopia and the remaining 14% from equatorial riparian countries. Neither the 1929 nor the 1955 agreements between Egypt and Sudan make any reference to Ethiopia or other riparian countries, and no allocation is made for them. Countries such as Kenya, Tanzania and Uganda consider that neither agreement is binding on them and that they are free to use the Nile's waters. Ethiopia shares their view but prefers to adopt a non-confrontational approach to the issue.

On the other hand, Egypt is following a stiff stance to maintain the status quo. The president of the country's parliament, Dr Ahmed Fathy Srorr is on record as saying that it is unthinkable to consider reducing water supply from the

Nile, and Irrigation and Water Resources Minister, Dr Mahamud Abu Zeid, has pointed out that Egypt's population has risen from 20 million to 70 million since the 1955 agreement whereas the country's water allocation has not changed.

By contrast, the Ethiopian Water Resources Minister said in December 2003 that "...the Nile Basin Initiative (inaugurated in 1999) has built the confidence of the riparian countries in using water resources in an equitable manner to extract member countries' population from abject poverty and achieve the Millennium Development Goals". Under the Eastern Nile Basin initiative (a sub-programme of the Nile Initiative) seven development projects are under consideration, and the implementation of these projects could conserve 10 billion m<sup>3</sup>/y of water currently lost by evaporation. Ethiopia's Ministry of Water Resources has recently disclosed that four large-scale dams will be built around the Ethiopian portion of the Blue Nile.

Under this intense debate on water issues, the Gilgel Gibe hydroelectric power plant was inaugurated on February 22, 2004. The plant is located on one of the rivers flowing south to Lake Turkana (previously known as Lake Rudolf). Gilgel Gibe is capable of generating 184 MW and is located 325 km southwest of Addis Ababa. An agreement has also been signed to construct Gilgel Gibe 2, with a capacity of 450 MW, and using the same water for generating power as at Gilgel Gibe 1. The project is expected to be completed within four years and could cost €373 million. This will be secured mostly from the EU and Italy. The project involves construction of a weir to collect the water discharge from Gilgel Gibe I and a 25 km tunnel.

Most of the country's drought-prone areas get receive 400-700 mm of rainfall each year, and as well as water-harvesting ponds and under ground reservoirs, there are also plans to tap the country's ground water resources, estimated at 2.6 billion m<sup>3</sup>. However, some say that this may be inviting disaster unless otherwise accompanied with intensive re-forestation programmes to aid the recharge of the exploited ground water.

The 4th Congress of Ethiopian Geosciences and Mineral Engineering Association took place during December 2003 after an absence of nearly six years. Thirty papers and 15 poster presentations were displayed, and the main theme was 'Geosciences for Sustainable Development in Ethiopia', with sub-themes on geochemistry, geophysics and petrology; hydrogeology, engineering geology and geothermal resources; remote sensing, GIS, the environment; and economic geology, exploration and mining.

The author of this review presented a paper on mining and mineral development: in Ethiopian, and concluded that, more than anything else, the country needs to change its attitude towards the promotion, support and development of the mining industry: bureaucratic red tape needs to be eliminated and a long-term vision should be adopted rather than expectations of short-term benefits. The paper also recommended the following legislative amendments:

- a provision to allow licensees to retain their licences in times of hardship, even if expenditure is minimal;
- that work programmes shall be the responsibility of the licence-holder, that interference in the preparation and implementation of the work programme shall be reduced to a minimum and that the role of government in this area shall be minimised;
- a discovery certificate shall be valid for at least three years, so as to allow sufficient time to arrange financing for the next stage of activity;
- removal of the maximum limit on the size of the exploration area;
- provision for the repatriation of funds for reasons other than bankruptcy, eg when an exploration programme is discontinued;
- Mining Licences issued at the federal level should be granted by the Minister, rather than waiting on approval by other government bodies;
- responsibility for the application/implementation of royalties should come under the remit of the Ministry of Mines;
- mining income tax should not exceed 30%; and
- the 10% dividend tax should be scrapped or reduced to a maximum of 5%.

The ministry of mines recently disclosed that it is working to revise the Mining Law.

Gold exploration in Ethiopia is at a low ebb, despite the improvement in the price of gold over the past year or so, and only two companies are reported to be carrying out exploration projects. Midroc Gold Mine plc, the owner of the only industrial-scale gold mine in the country, Lega Dembi, in the Guji district of Oromia, has acquired prospecting licences for its Adola-Legedembi and Metekel projects.

The former covers 441 km<sup>2</sup> adjacent to its existing 80 km<sup>2</sup> area to the north of the Legedembi gold mine, at Ula lo and Meleka, where the targets are gold and associated minerals, and rare earth minerals. The Metekel project covers 2,300 km<sup>2</sup> in the western part of the country in Benishangul Gumuz Regional State, in areas known as Baruda, Bulen, Ablarus, Bahu-Anjakoya, Yabanja and west Tangoy. The Ethio-Nor airborne geophysical survey has covered these areas and follow-up work has been conducted. Some of these areas show promising indications of gold mineralisation.

In its 2004 Gold Survey, GFMS estimates that Ethiopia's total output of mined gold in 2003 was 4.8 t, compared with 5.1 t in 2002 and 4.7 t in 2001. However, gold smuggling continues, both into and out of the country, and customs officers seize gold from time to time, including 40 kg at a single seizure at Bole International Airport, with a total of more than 200 kg seized during 2003.

Salt mining has gained significant importance in recent years. During 2003, four companies received licences to mine salt and two more companies have obtained licences in the current financial year, Geo-Action plc and Lucy Salt

Producing plc. Both are operating in Afar Regional State on Lake Afdera in the northeast of the country.

The Geological Survey of Ethiopia is involved in various projects concerning regional geological mapping, hydro-geological mapping, engineering geology, geothermal investigation, geophysical surveys and mineral exploration. The exploration programme is a follow-up of the Dugi-Mabuk gold and base metal project in the northwest of the country, and for tantalum, coal and industrial mineral in the southern region of the country. The coal and geothermal investigations are designed to find alternative energy resources and thereby reduce dependence on hydro-electric power. The Rift Valley is the main focus for the geothermal exploration, which could lead to the generation of an estimated 700 MW.

In the hydrocarbon sector, the Ministry of Mines signed an exploration agreement with Petronas of Malaysia, in June 2003, with regard to a 15,356 km<sup>2</sup> area in Gambella Regional State in the western part of the country bordering Sudan. In accordance with the agreement, Petronas will spend a minimum of US\$5 million on exploration. In a related development, an agreement was signed between the Ministry of Mines and Saitake International (SIL) of Jordan to develop the Kalub and Hilala Gas Fields in the Ogaden Region. SIL will invest up to US\$1.5 billion to exploit the deposit. It is reported that the exploitation process includes a gas-to-liquid conversion (GTL) plant. The gas fields were first discovered over 30 years ago but thus far they have never been developed.