



# 2015 Minerals Yearbook

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**CHAD [ADVANCE RELEASE]**

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# THE MINERAL INDUSTRY OF CHAD

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Hydrocarbons were a leading segment of Chad's economy, accounting for most of the country's exports of goods and Government revenue. The economy was significantly affected by the collapse in international oil prices in the last half of 2014. The sustained low prices in 2015 were a large contributor to the slowing growth of real gross domestic product (GDP). Real GDP growth was 1.8% in 2015 compared with a robust 6.9% in 2014, despite a 33.8% increase in the growth rate of the oil sector. Chad's dependence on oil made continuing economic growth prospects vulnerable to lower than expected international oil prices (Gridneff, 2015; International Monetary Fund, 2016a; 2016b, p. 174; World Bank, The, 2016).

Exploration and production of hydrocarbons were covered by the conventions governing research, exploration, production, and transportation of hydrocarbons dated December 19, 1988, and May 10, 2004, and amendments, including law No. 028/PR/00 of December 5, 2000. The Petroleum Revenue Management Law (law No. 001/PR/99 of 1999) and amendments, such as law No. 027/PR/06 of 2006, defined the allocation of petroleum revenues. Mining of minerals, which was a negligible contributing sector of the national economy, was regulated by the Mining Code (law No. 011/PR/95 of 1995). Law No. 014/PR/98 of 1998 covered the general principles for the protection of the environment. Law No. 002/PR/2008 of 2009 addressed the production and the use of radioactive minerals and general nuclear security.

In 2014, Chad became a full member of the Extractive Industries Transparency Initiative (EITI) by being declared completely compliant. EITI is an international effort to promote transparency in the management of natural resources, such as metals, natural gas, petroleum, and other minerals (Extractive Industries Transparency Initiative, 2016a, b).

In November 2015, the Government officially launched a mineral inventory project. The project, valued at about \$27.4 million,<sup>1</sup> fell under a contract signed by the Government in May 2014. The Government would allow the Bureau de Recherches Géologiques et Minières (BRGM) of France to review existing geologic and metallurgical information on the Enedi and Wadi Fira areas in eastern Chad. The BRGM also planned to interpret existing satellite imagery; to collect and to interpret airborne geophysical surveys; to sample outcrops, soils, and trenches; to prepare surface geologic maps; and to disseminate the results of the project. The assignment was expected to last 3.5 years (Bureau de Recherches Géologiques et Minières, 2014; Primature du Tchad, 2015).

Most official nonfuel exports from landlocked Chad were trucked to seaports in Cameroon and Nigeria. Crude petroleum produced in the Doba Basin by Esso Exploration and Production Chad, Inc. (Esso Chad) was exported by way of the

Chad-Cameroon export pipeline to an export terminal at Kribi, Cameroon, as was production from other oilfield development projects in Chad. Most of the crude petroleum produced from the oilfield on Permit H (Block H) by CNPC International (Chad) Co. Ltd. was moved by pipeline to the Djermaya refinery, but in 2014, CNPC also received approval to export crude petroleum through the Chad-Cameroon export pipeline (Petroleum Africa, 2014).

## Production

The value and volume of production of crude petroleum far exceeded the output of the country's limited suite of other mineral commodities, which included aggregates, cement, clay, gold, lime, limestone, salt, sand, soda ash (natron), and stone. Despite depressed oil prices, in 2015, the output of crude petroleum was estimated to have increased by about 5% compared with that of 2014. The estimated increase in petroleum production was due to a full year of production from the Mangara field. Estimates of Chad's mineral production are in table 1.

## Structure of the Mineral Industry

The Ministère des Mines et de la Géologie and the Ministère du Pétrole et de l'Énergie monitored the activity of various sectors of the mineral industry. Société des Hydrocarbures du Tchad S.A. was the national oil company. Société Nationale de Ciment (SONACIM) was the national cement company, which also mined limestone. The private company Société Tchadienne d'Exploitation des Carrières (SOTEC) operated a large-scale quarry. Small-scale domestic mining and quarrying operations produced the country's other nonfuel minerals. International companies were involved in the exploration for and production of crude petroleum and petroleum refining. Table 2 is a list of major mineral industry facilities.

## Commodity Review

### Metals

**Gold.**—Tekton Minerals Pte Ltd. of Singapore held five exploration licenses in Chad. In 2015, it confirmed gold targets on three of the licenses. The 500-square-kilometer Dorothe project, located 40 kilometers (km) north of Goz Beida, had recent gold discoveries by local prospectors and artisanal miners. Tekton Minerals was considering developing the project as an open pit. The Am Ouchar project, located 50 km southeast of Goz Beida, was heavily mined by artisanal miners. The third license with a confirmed target covered the Echbara project, 30 km west of the Dorothe project. Tekton Minerals held two additional licenses, Waya I and II, which were graphite targets (Tekton Minerals Pte, Ltd., undated).

<sup>1</sup>Where necessary, values have been converted from euro area euros (EUR) to U.S. dollars (US\$) at the average annual exchange rate of EUR0.75=US\$1.00 for 2015.

## Industrial Minerals

**Cement.**—In May, CGCOC Group of China announced a plan to open a cement plant with an annual capacity of 500,000 metric tons per year (t/yr) in Chad. Ciment du Tchad, a subsidiary of Government-owned SONACIM, owned and operated the only cement plant in the country. The Baoare plant had an annual capacity of 200,000 t/yr (CGCOC Group, 2015; Global Cement, 2016).

## Mineral Fuels

**Petroleum.**—Owing to the increased assets obtained in 2014, Glencore plc of Switzerland increased its petroleum production in 2015. The lower global oil prices, however, led Glencore to reduce its drilling campaign and scale back exploration efforts. The reduction led to an impairment of more than \$1 billion. Glencore's goal was to preserve the resource until the price of oil increased to a level that would make production more valuable (Glencore plc, 2015, p. 64; 2016, p. 39, 56, 60, 63).

CNPC International (Chad) Ltd., which was a subsidiary of China National Petroleum Corp., operated the Koudalwa and the Ronier oilfields on Block H. In January, CNPC brought the Grand Baobab oilfield into production with a projected capacity of 40,000 barrels per day. In April, the Government and CNPC International worked out a new contract that would give Chad a 25% share of production and increased the royalties to 14.25% from 12.5% (Economist, The, 2015; Gridneff, 2015).

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TABLE 1  
CHAD: ESTIMATED PRODUCTION OF MINERAL COMMODITIES<sup>1,2</sup>

(Metric tons unless otherwise specified)

Commodity <sup>3</sup>	2011	2012	2013	2014	2015
Cement	10,000	140,000 <sup>r</sup>	180,000 <sup>r</sup>	200,000	200,000
Gold kilograms	--	--	14	14	14
Petroleum:					
Crude thousand 42-gallon barrels	41,610 <sup>r,4</sup>	36,865 <sup>r,4</sup>	30,295 <sup>r,4</sup>	28,470 <sup>r,4</sup>	30,000
Refined do.	1,000	4,000	4,000	7,000 <sup>r</sup>	7,000

<sup>r</sup>Revised. do. Ditto. -- Zero.

<sup>1</sup>Estimated data are rounded to no more than three significant digits.

<sup>2</sup>Table includes data available through April 26, 2016.

<sup>3</sup>In addition to the commodities listed, other minerals and construction materials, such as aggregate, clay, lime, limestone, salt, sand, soda ash, and stone were produced, but available information was inadequate to make reliable estimates of output.

<sup>4</sup>Reported figure.

TABLE 2  
CHAD: STRUCTURE OF THE MINERAL INDUSTRY IN 2015

(Metric tons unless otherwise specified)

Commodity		Major operating companies and and major equity owners	Location of main facilities	Annual capacity
Cement		Ciment du Tchad [Société Nationale de Ciment (SONACIM)]	Baoare plant, Bisi Keda, Mayo-Kebbi Ouest Department	200,000
Gold	kilograms	Artisanal placer operations	Mayo Dala Department	150 <sup>c</sup>
Petroleum:				
Crude	million 42-gallon barrels	Esso Exploration and Production Chad, Inc. (Esso Chad) (Exxon Mobil Corp., 40%; Petronas Carigali Overseas Sdn. Bhd., 35%; Government, 25%)	Bolobo, Kome, Maikeri, Miandoum, Moundouli, and Nya, and Timbre fields, Doba Basin	79 <sup>c</sup>
Do.	do.	CNPC International (Chad) Ltd. (China National Petroleum Corp.)	Permit H, which includes the Koudalwa, Ronier, and Grand Baobab fields	40 <sup>c</sup>
Do.	do.	PetroChad Mangara Ltd. (Glencore plc, 85%, and Société des Hydrocarbures du Tchad S.A., 15%)	Badila and Mangara fields	20 <sup>c</sup>
Refined products	do.	CNPC International (Chad) Ltd. (China National Petroleum Corp., 60%, and Société des Hydrocarbures du Tchad S.A., 40%)	Djermaya refinery, about 30 kilometers north of N'Djamena	7
Salt		Various local operators	Various locations	10,000 <sup>c</sup>
Soda ash		do.	Lake Chad, near Liwa	13,000 <sup>c</sup>
Stone, crushed		Société Tchadienne d'Exploitation des Carrières (SOTEC)	Mani rhyolite quarry, Dandi	600,000

<sup>c</sup>Estimated. Do., do. Ditto.