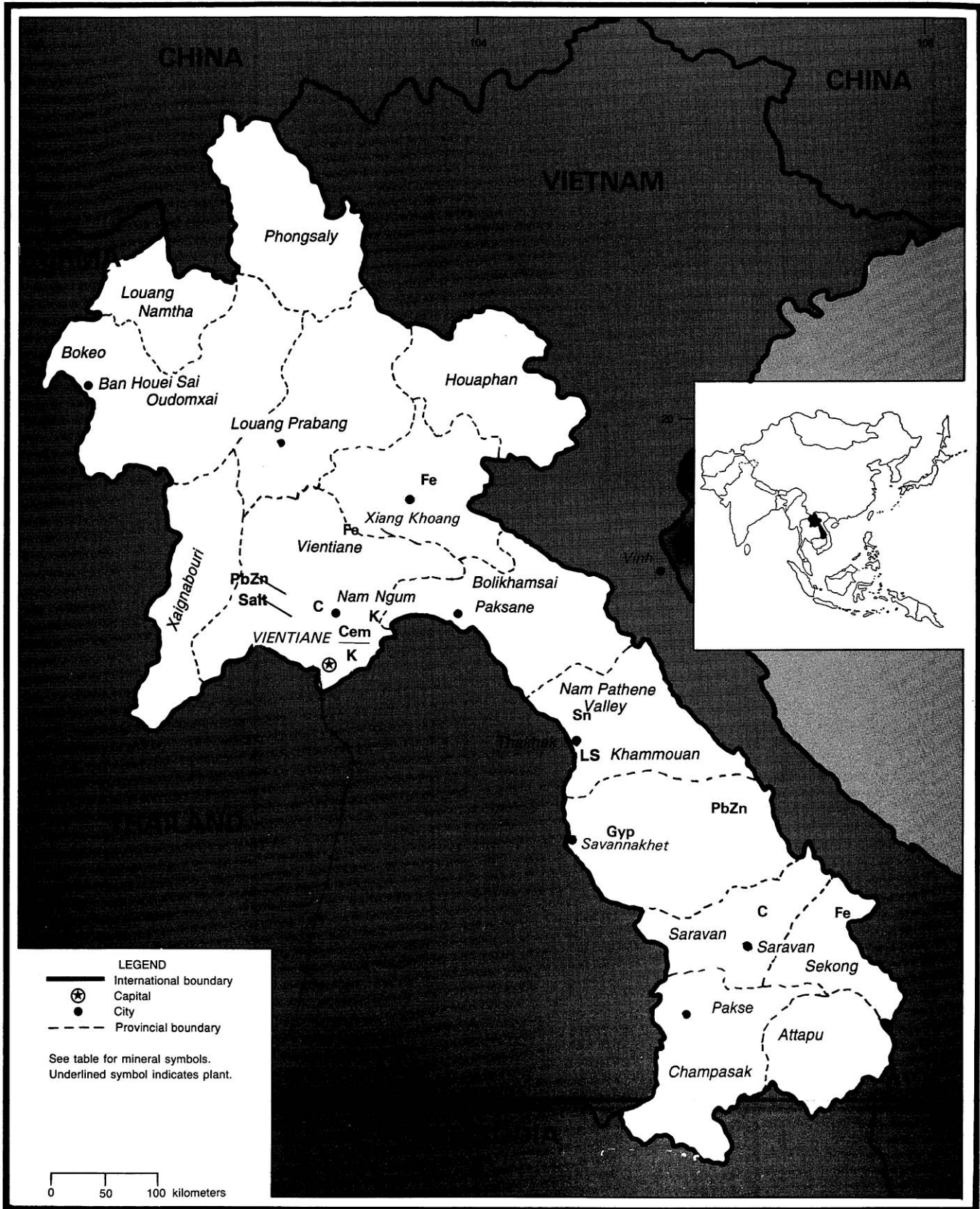


LAOS

AREA 236,800 km²

POPULATION 4 million



THE MINERAL INDUSTRY OF

LAOS

By Travis Q. Lyday

The Lao People's Democratic Republic is a small, landlocked country on the Indochinese Peninsula. Its economy is agrarian, based primarily on wet rice farming and slash-and-burn cultivation. The mining and quarrying sector contributes less than 0.5% to the economy.

The mineral resources of Laos include copper, gold, iron ore, lead and zinc, tin, gypsum, rock salt, sapphire, coal, and, probably, petroleum. The only significant mineral production in the country until recently has been tin ore. Some of the other mineral resources have been extracted, but only by using primitive and unsystematic methods. In addition, limestone is quarried near Thakhek in Khammouan Province and is used locally for highway construction and export to Thailand. Other construction materials such as sand and gravel also are extracted on a small scale, mainly from the renewable deposits of the Mekong River, which constitutes most of the country's western boundary with Thailand. Essentially, the mineral industry that is extant in the country is unstructured and sporadic.

Gold is found throughout Laos in deposits occurring in primary quartz veins, in association with base metals, and in placers. Current production is obtained by panning at numerous sites in both the north and the south. Investment in gold exploration is being considered by some foreign firms.

Laos' iron ore deposits are in Xiang Khoang Province, in the north-central part of the country. The principal deposits are Pha Lek and Phou Nhouan, both of which are deemed to have economic potential. However, they remain basically undisturbed owing to inaccessibility, lack of infrastructure, and

the high capital cost required for development. Any development of the deposits probably would depend on the growth of the steel industries in the adjacent countries of Thailand or Vietnam.

Tin mining continues to be a cottage industry from a group of small mines in the Nam (River) Pathene Valley about 60 (km) north of Thakhek. The principal ore is a surface enrichment of cassiterite, an oxide of tin.

Production of gypsum comes from near Dong Hene in Savannakhet Province and is marketed to customers across the border in Vietnam. The mine and plant originally were developed in the late 1970's by the Vietnamese. Production characteristically is suspended during the rainy season, which typically occurs from June to October. Stockpiled material sometimes is processed during this period. The gypsum underlies potash and rock salt horizons in a thick and extensive evaporite sequence.

High-grade rock salt is mined from the same evaporite deposits in the Vientiane plain from which gypsum is mined. However, mining methods and marketing patterns of product are unknown.

Sapphire is mined, or collected, on an artisanal scale by the local population from placer deposits near Ban Houei Sai, Bokeo Province, in the northwest and from streambeds throughout the southern part of the country.

Coal reportedly has been mined since about 1985 at the rate of about 1,500 (mt/a) from deposits at Bochan, northwest of Vientiane in Vientiane Province. No production is known to have occurred during 1992. Coal also occurs in the south of the country in Saravan Province and in the north of the country in Phongsaly Province.

Laos has a centrally planned economy; the Government owns and controls all productive enterprises, regardless of size or activity. However, with increasing recognition that systematic production of minerals would probably be beneficial to the country's economy, measures have been enacted in recent years by the Government to encourage exploration and development in the mineral sector. These measures include sanctioning activity by the private sector, including foreign interests.

Any presentation on the mineral reserves of Laos merely would be crude estimates as well as premature. Efforts are continuing through Government initiatives to attract and organize mineral exploration and development in the country.

Laos is one of the world's poorest countries. Its infrastructure is primitive at best, having no railroads (although a Thai railroad reaches Nong Khai, across the Mekong from Vientiane, which serves as a main trade artery for the country) and only a rudimentary transportation system. There are almost 27,530 km of roads, of which 1,856 km is paved. Another 7,450 km consists of gravel, crushed stone, or other type of improved surface. The remaining 18,224 km is unimproved, loose surface, and often impassable during the rainy season.

There are 57 airports in the country, 47 of which are considered usable. There are only eight airports with paved runways. There are no airports with runways more than 3,659 (m) in length and only one airport with a runway longer than 2,440 m. Only one airport, the Wattay International in Vientiane, has regularly scheduled flights.

The country has about 4,587 km of inland waterways, primarily the Mekong

and its tributaries. An additional 2,897 km is sectionally navigable by craft drawing less than 0.5 m.

The country has one 136-km pipeline for refinery products, thought to be in the process of being extended from Vientiane to Vinh, Vietnam.

Power is generated by a 150-MW hydroelectric plant about 70 km north of Vientiane on the Nam Ngum, an effluent of the Mekong, and a 45-MW plant on the Nam Saset. Other than what is consumed in the Vientiane area, most of the output, about 80%, is exported to Thailand. An additional 3 MW of capacity is distributed among several smaller hydroelectric plants, and about 14 MW of capacity is provided by a number of diesel units in various parts of the country.

Laos is only on the verge of social, political, and industrial development. The country ostensibly has possibilities for mineral development with consequent benefits to the economy. The principal problem is a lack of capital to develop infrastructure and industry, although legislation has been enacted to attract foreign capital.

TABLE 1
LAOS: ESTIMATED PRODUCTION OF MINERAL COMMODITIES¹
(Metric tons unless otherwise specified)

Commodity ²	1988	1989	1990	1991	1992 ³
Cement (from imported clinker)	4,500	³ 6,875	6,500	7,000	7,000
Gemstones (sapphires) carats	15,000	³ 37,925	30,000	35,000	35,000
Gypsum	³ 80,000	³ 104,000	^r ³ 53,034	^r ³ 76,776	³ 79,863
Salt, roc	30,000	³ 7,950	8,000	8,000	8,000
Tin, mine output, Sn content	³ 300	³ 127	³ 500	300	300

²Preliminary. ¹Revised.

¹Table includes data available through June 2, 1993.

²In addition to the commodities listed, crude construction materials such as sand and gravel and varieties of stone presumably are produced, but available information is inadequate to make reliable estimates of output levels.

³Reported figure.

