



**Lao People's Democratic Republic**  
**Peace Independence Democracy Unity Prosperity**

# **Laos Country Report**

**on**

## **Environmental Management in the Lao PDR Mining Sector**

### **International Conference**

### **A Greater Mekong?**

### **Poverty, Integration and Development**

**At the University of Sydney, Australia**

**26-27 September 2007**

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## General Information

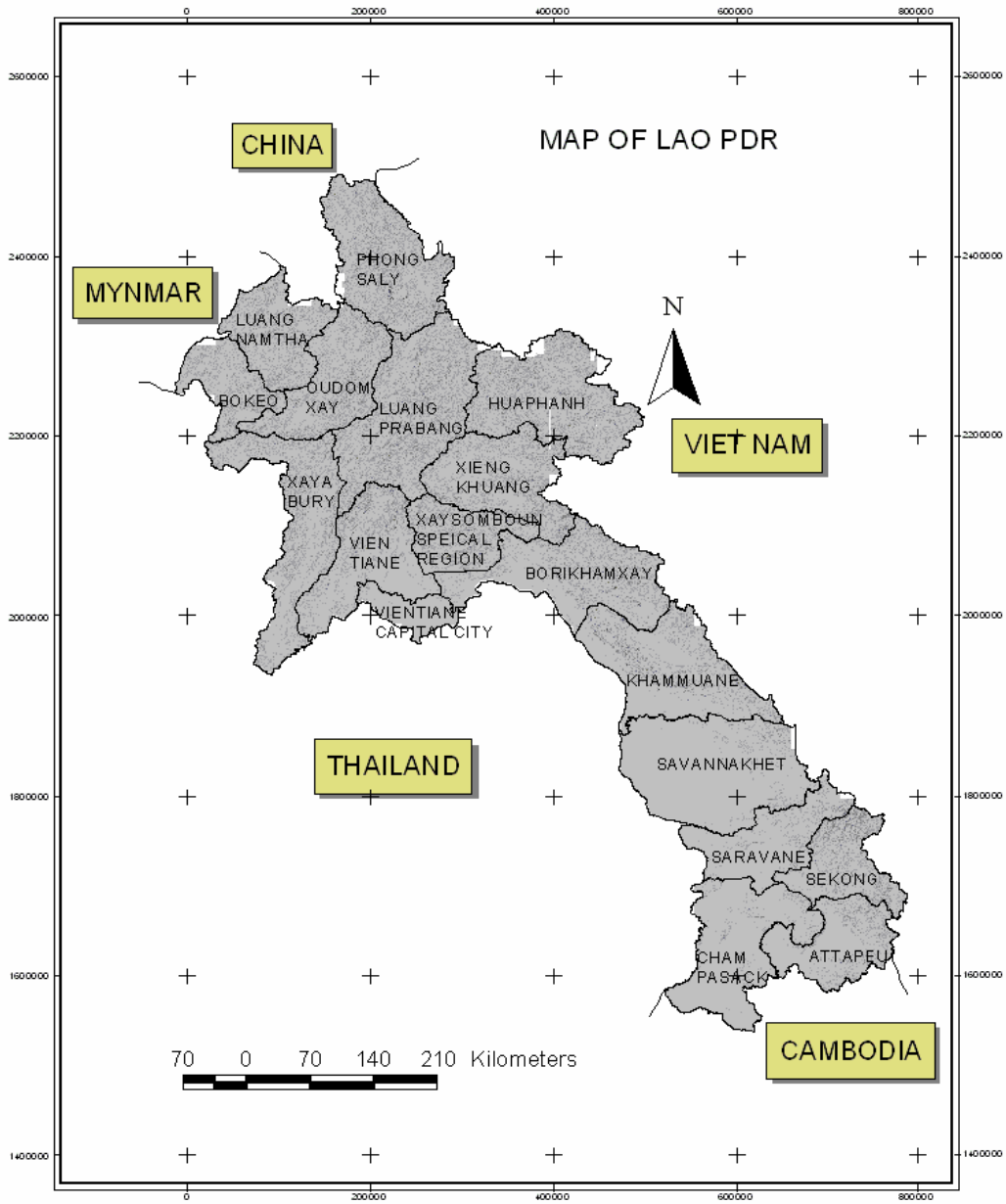
The Lao PDR is a country abundant with natural resources lying in the central Indochina peninsula between 13.54-22.31 degrees north and 100.05-107.42 degrees south. It is a landlocked country with total land area of 236,800 km<sup>2</sup>, more than 40% of which consists of stocked forestlands. The Lao PDR border stretches for 416 km in the north with the people Republic of China for 492 km in the south with kingdom of Cambodia, for 1,957 km in the east with the socialist Republic of Vietnam, and for 1,370 km in the west with the kingdom of Thailand. The country is divided into sixteen provinces, one municipality and one special region. In 2002, it was estimated that the total population of the country was some 5.48 million people or 861,500 households, of which approximately 83% live in rural area.

The climate of the Lao PDR is seasonally tropical, with a pronounced wet and dry season. The lowest level of mean annual rainfall are about 1,300 mm in the northwest, while the highest levels are well above 4,000 mm in the southern Annamite range. The majority of the lowland experience between 1,500-2,000 mm of rainfall annually.

The prevailing economy of Lao PDR is heavily dependent on natural resources as the country is dominated by subsistence production, with the majority of the population relying on farming and the collection of NTFPs for their basic livelihoods. In 2000, nominal GDP was estimate to be 13,483 billion (IMF 2002). Although per capita GDP increased from US \$ 114 in 1985 to US \$330 in 2000, the incidence of poverty remains high. Thirty nine percent of the populations are currently thought to be living in poverty and the Lao PDR is ranked 140 out of 174 in UNDP's Human Development Index, making it one of the poorest counties in the Asia region (ADB 2001a-2001b).

The Lao government has prepared a number of action plans related to sustainable natural resources management including the National Tropical Forestry Action Plan (1991) and the Environmental Action Plan (1993). A significant number of laws relevant to natural resource management and protection and pollution control have been passed since 1990, e.g. Law on Water and Water Resources (1996), Law on Forestry (1996), The Land Law (1997) and The Environmental Protection Law (1999). Furthermore, Ministry of Industry and Handicraft is in the process of seeking the Peoples' Assembly's approval of a new Law for Industries. There are involved by Science Technology and Environment Agency (STEA) which is the central agency within the Prime Minister's Office, in charge of general environmental policy, systems development and follow-up, while line ministries and specialized agencies in co-operation with STEA manage environmental aspects as well as projects of their own operations. STEA is represented in all of the country's 18 provinces.

# Map of Laos



# **Environmental Management in the Lao PDR Mining Sector**

## *Keeping Pace with a Rapidly Growing Industry*

The Government of the Lao People's Democratic Republic (Lao PDR) is facing significant challenges in addressing environmental issues in the rapidly growing mining sector. In particular, the development of appropriate legislation in conjunction with increased Government of Lao PDR (GoL) capacity for environmental monitoring and assessment is critical to the future sustainable development of Lao PDR natural resources.

## **Status of the Mining Sector**

In recent years, the mineral sector in Lao PDR has experienced significant growth. Private investment in the mineral sector has increased almost 34% per year over the past five years. At present, the mineral sector comprises 19.5% of the output of the entire Lao PDR industrial sector, and continued growth is expected at a rate of approximately 11% per year during 2006-2010 (MINDECO 2006).

There are currently over 200 companies engaged in various activities related to exploration, development and/or mining operations within the country. Of this number, 34 are foreign companies. Two world-class mines are operational for gold and copper, and there are 55 new mines under development.

## **Environmental Issues**

The environment and natural resources of Lao PDR are being threatened by a number of factors associated with the mining sector, including:

- Availability of flat land is an increasing issue, with only 8% of total land area suitable for agriculture. The limited available land is under pressure by logging, slash and burn cultivation practices, use of chemicals in agriculture, soil erosion, poor soil quality, and unexploded ordinance (UXO);
- Extensive areas of primary tropical forest and biodiversity have been under threat from commercial logging, upland erosion and consequent watershed deterioration, and flooding from new hydroelectric reservoirs. Deforestation rates in certain districts were more than 20% over the period 1993-1997;
- Increased pressure on water resources through increased use for mining activities and hydropower development;
- Threats to aquatic species due to unsustainable fishing practices, introduction of exotic fish species, weed infestation and pollution;
- Hazardous chemicals, including heavy metals such as mercury, lead, cadmium, arsenic, chromium, copper, and zinc as well as persistent organic pollutants (POPs) such as dioxins and furans, polychlorinated biphenyls (PCBs), and various pesticides and herbicides; and
- Potential impacts in downstream countries from improperly managed discharges.

Most of these potential issues are associated with small and medium-scale mining operations (both foreign and domestic). Larger more sophisticated operations tend to have more comprehensive environmental management practices due to external pressures (shareholders, international environmental NGO's, general population in parent country, etc.).

## **Environmental Legislation**

The GoL has made substantial progress towards developing policies, strategies and legal frameworks to protect the environment and conserve the natural resource base of the country. The principal legal instrument covering environmental matters for the mining industry of Lao PDR is the Environmental Protection Law (EPL) of 1999. The EPL specifies necessary principles, rules and measures for managing, monitoring, restoring and protecting the environment in order to protect the public, natural resources and biodiversity, and to ensure the sustainable socioeconomic development of the nation. However, developing a legal framework and capacity specific to the management and monitoring of the mining sector has lagged behind the development of the industry.

## **Current State of Environmental Consideration and Environmental Management Plans**

The main administrative authorities for the mining industry in Laos are Water Resources and Environment Agency and Department of Geology and Mining - DGM. The current state of environmental management is described as follows:

- The relevant laws for the mining industry related on the environment are the Laotian Constitutional Law, Environment Protection Law, Environmental Protection Regulations Environmental Assessment Regulation, Mining Sector, Law on Water and Water Resource, Land Law, Forest Law, etc. These laws and regulations must be reviewed systematically from the viewpoint of the mining industry.
- Lao environmental standards have not yet been established but some provisional standards are in place and environmental standards used by international organization and advanced mining countries have been adopted as reference compliance standards.
- The main administrative authority for the mining industry in the Lao PDR is the DGM, now a part of the Ministry of Energy and Mining-MEM. The DGM issue exploration and mining licenses and maintains the environmental protection by providing information and regulations for environmental protection, and also encourages investors to recognize the importance of the environmental.
- However, legally regulations have not been implemented due to the lack of capacity, knowledge and technology in the organization.

- Water Resources and Environment Agency is legally required to implement environmental management and monitoring activities but does not currently implement any environmental monitoring due to budgetary constraints
- An environmental Compliance Certificate is needed to obtain licenses for exploitation or mining after examination and approval by Water Resources and Environment Agency.
- Detailed degrees on regulating mining activities have been relaxed so the DGM may conduct its environmental management duties. They will need to be completely fulfilled in the future.
- No baseline survey has yet been to provide back up data for environmental monitoring

### **What are the Challenges to the GoL?**

Example: Tailings spill from medium-scale copper mine in northern Lao PDR into surrounding agricultural area. This incident highlighted several general issues that need to be addressed to improve environmental management of the mining sector

- Limited capacity in the provincial and central government to properly assess the EIA document for project;
- Limited capacity and resources in provincial governments to properly assess the impact and extent of environmental incidents;
- Lack of control over foreign investors operating in Lao PDR;
- Lack of independent monitor of mining sector activities;
- Lack of legislated penalties for mining infractions;
- No legislated requirement for land compensation to the local community; and
- Limited funds available to implement proper independent environmental monitoring programs for the mining sector.

These challenges are cross-cutting through other sectors including power generation and infrastructure development.

### **How are the Challenges Being Addressed?**

#### **GoL Initiatives -**

- Development of Third Party Monitoring Unit of STEA to provide independent monitoring of mining operations;
- Increased linkages between Water Resources and Environment Agency and Department of Mining;

- Legislative changes

**IEMAT Project** - Funded by the Canadian International Development Agency, the *"Improved Environmental Monitoring and Assessment Technologies for the Mining Sector"* Project is building provincial and central Water Resources and Environment Agency capacity for independently developing and implementing proper environmental monitoring programs for mining projects.

**SEM-2 Project** - Since 2001, the Swedish International Development Agency (SIDA) has been supporting capacity building for effective environmental management in Lao PDR through the *"Strengthening Environment Management"* (SEM) Project. Phase II of the project (2005-2010) is designed to support Water Resources and Environment Agency in developing environmental management strategies for the year 2020 and the Action Plan 2006-2010.