

Lao Policy and Management System on FDI and Chinese Hydropower, Mining, Agricultural Investments in Laos

Series of China's "Going Global"

Global Environmental Institute
Investment Trade and the Environment Program Team



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About GEI

The Global Environmental Institute (GEI) is a leading Chinese non-governmental organization (NGO) established in Beijing in 2004. GEI's mission is to design and implement market-based models to solve environmental problems and realize sustainable development in China and overseas. GEI provides policy suggestions to governments and promotes best environmental practices on investment, trade, energy and climate change, biodiversity protection and capacity building. Since its establishment, GEI has been engaging in research and demonstration projects in more than 20 provinces, cities and municipalities in China as well as in Southeast Asian and African countries.

Through its Investment, Trade and Environment project, GEI is dedicated to encouraging and supporting the Chinese government to formulate foreign investment and trade related environmental policies that regulate and guide the environmental conduct of enterprises investing overseas; build up the environmental governance capacity of host countries, including the development of appropriate environmental policies that regulate environmental conduct of investors; and improve the capability of Chinese enterprises to comply with environmental policies and regulations, better manage investment risks and fulfill their environmental and social responsibilities.

GEI has successively pushed forward and participated in the development of *A Guide on Sustainable Overseas Silviculture by Chinese Enterprises* and *A Guide on Sustainable Overseas Forest Management and Utilization by Chinese Enterprises* issued by the State Forestry Administration and the Ministry of Commerce (MOC) in 2007 and 2009 respectively, as well as the *Guidelines for Environmental Protection in Foreign Investment and Cooperation* released by MOC and the Ministry of Environmental Protection in 2013. GEI has also carried out demonstration projects, conducted research and led local capacity building activities on sustainable investment in Laos, Myanmar, Mozambique, Congo (DRC) and other Southeast Asian and African countries.

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Preface

Economic globalization, characterized and driven by liberalization of trade and investment, integration of financial markets and regional economies, as well as advancement of transportation and telecommunications, not only provides private sectors with widening access to global resources, overseas markets and mature knowledge and technologies, but also creates unprecedented opportunities for economic development and livelihoods improvement for individual countries. Parallel to the expansion of investment, production and trade activities have been increasing environmental degradation such as depletion of natural resources, biodiversity loss and climate change caused by unsustainable production and consumption practices, which raises criticism and prompts rethinks among the international community on traditional development models. The principle of sustainable development was proposed in this context; related concepts, technologies and mechanisms, including corporate social responsibility (CSR), low carbon development and the adopting of clean energy have since been developed and promoted worldwide.

In China, the introduction and implementation of the “opening up and reform” policy since the late 1970s has allowed the country to achieve sustained high levels of economic growth. The first two decades were very much characterized by “bringing in” foreign investment, technology, managerial expertise and demographic dividend that has helped shape China into an export-oriented economic powerhouse, forming the basis of China’s economic takeoff. In comparison, the articulation of the “Going Global” Strategy in China’s “National Tenth Five-year Plan (FYP)” together with China’s accession into the WTO in 2001, signaled China’s intent to take full advantage of economic globalization as a launch pad to elevate the country to a higher level of international competitiveness, by promoting Chinese enterprises taking a more proactive role in international economic cooperation and competition, and expanding business operations overseas. Fourteen years after its implementation, the “Going Global” Strategy has already propelled China into the top league of international investment. China’s Outward Foreign Direct Investment (OFDI) totaled US\$116 billion in 2014 alone, 43 times the volume in 2001, covering 184 countries and regions. An increasing number of Chinese enterprises have begun to learn about investment environments of host countries, including economic, political and the societal factors. These are embedded into the international economic structure and are also a part of the forces that shape its development.

The next five to ten years will witness a new wave of Chinese OFDI following the establishment of the Asian Infrastructure Investment Bank (AIIB), the Silk Road Fund and the proposal of the “One Belt and One Road” Initiative. Within these strategic investment priority areas there are a lot of developing countries and least developed countries (LDC) that have abundant natural resources but lack sound institutional frameworks in place. Environmental and social policies, standards and practices that Chinese investors adopt in these countries will therefore have large impacts on local environment and livelihoods. If Chinese enterprises can fully embed principals of sustainability in their overseas investment activities, it will not only shift the economies of both China and the host countries towards a more green development path, but also serve as a flagship example of how emerging market investments can catalyze sustainable growth.

As a Chinese environmental non-governmental organization (NGO), the Global Environmental Institute (GEI) has endeavored to facilitate environmentally, socially and economically viable Chinese overseas investment and trade. GEI promotes the Chinese government to issue policies and regulations guiding the environmental behaviors of Chinese enterprises overseas, enhance the environmental governance capacities of host country governments, and provide recommendations to Chinese enterprises on environmental and social related works through research and on-site pilot projects. In 2014 GEI conducted a scoping study of Chinese investment in Laos to better understand Lao policies on inward foreign investment and the current situation regarding Chinese investment in the hydropower, mining and agriculture sectors.

Laos is the only landlocked state in Southeast Asia, bordering China to the north, Myanmar to the northwest, Vietnam to the east, Cambodia to the south and Thailand to the west. The country is rich in natural resources, especially coal, hardwood, gold and precious stones, and has huge hydropower potential. By the end of 2013, China's accumulative foreign investment in Laos totaled \$5.085 billion US dollars, surpassing Thailand and Vietnam as the largest investor in Laos. This report summarizes the major research findings of the scoping study conducted by GEI, and is structured as follows:

- The first section provides a brief introduction to the geography, administrative divisions and economic development of Laos, as background information;
- The second section summarizes relevant Lao national policies and government management systems governing foreign investments, including types of foreign investment, management authorities, approval procedures for investment and environmental and social policies and requirements;
- The third section introduces Chinese investment in Laos, focusing on analyzing Chinese investments in the hydropower, mining and agricultural sectors. We have included lists and maps of Chinese companies operating in these sectors, and overlap with maps of key biodiversity areas in order to set up a base for further analyses on the environment impacts of investment projects.

We present this report as part of GEI's publication series of China's "Going Global" to our friends and colleagues who are interested in the Lao investment environment and in particular Chinese investment in Laos.

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An Introduction to Lao PDR

Lao PDR, the only landlocked state in Southeast Asia, borders all five of the other Greater Mekong Subregion (GMS) countries – China to the north, Myanmar to the northwest, Vietnam to the east, Cambodia to the south and Thailand to the west. Eighty percent of its territory consists of rugged mountains and plateaus, most of which lie in the northern and eastern parts of the country. The Mekong River runs north to south through western Laos and marks a large part of its border with Myanmar and Thailand. The terrain along the Mekong River is the fertile Mekong River Flood Plain – the heart of the Lao agricultural sector, extending from Sayabouly to Champasak.

The country can be divided into three geographical regions, i.e. the North, the Center and the South. Administratively it is organized into seventeen provinces and Vientiane prefecture (figure 1). The North is made up of steep mountain ranges that are mostly covered by forests, the central region is known for its extensive caves and impressive limestone landscapes, and the South is where the Mekong delta lies.

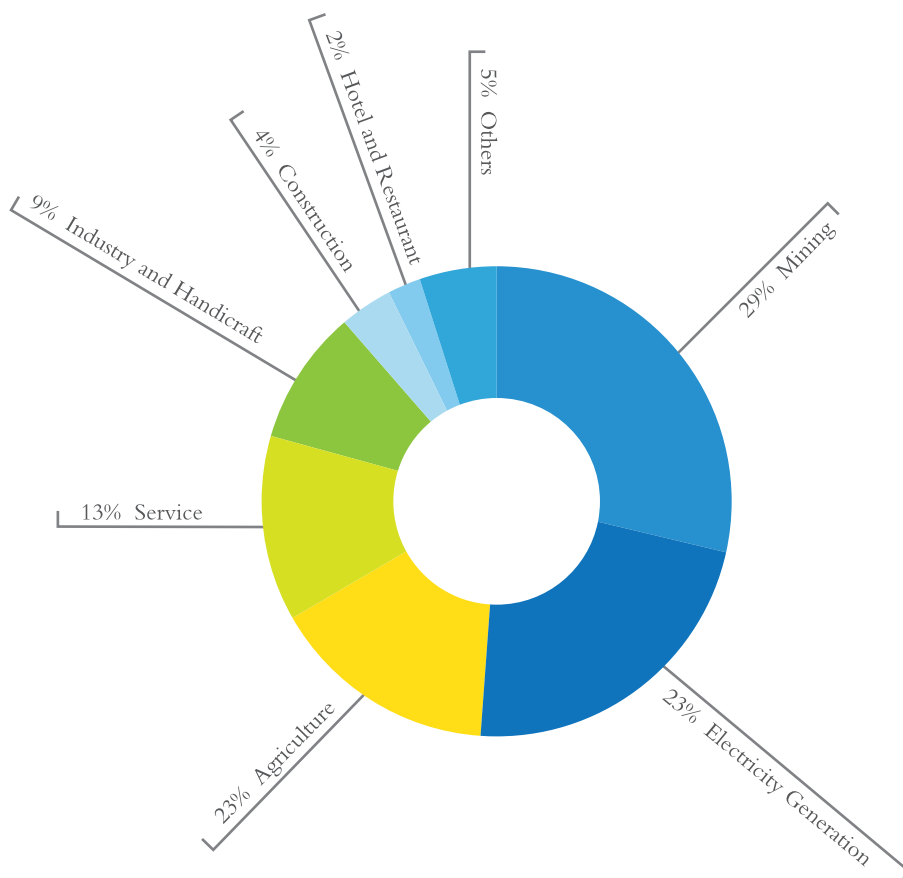
Figure 1 Topography and Administrative Maps of Lao PDR



Landlocked Laos is one of the poorest countries in the world. Although its economy grew at an average rate of 7.6% per year from 2009 to 2013, Laos is still ranked as a least developed country (LDC) by the United Nations Conference on Trade and Development (UNCTAD). The government aims to be removed from the LDC list by 2020 and takes economic development as its priority.

Foreign investment has emerged as a particularly important driver for economic growth in the country's strategy. According the *Seventh National Socio-Economic Development Plan (2011-2015)*, Laos hopes to attract US\$8 billion in investment from 2011 to 2015, mostly from abroad. With its abundant natural resources, especially coal, hardwood timber, gold and gemstones, Laos has already succeeded in attracting a large amount of foreign investment, particularly in the extractive industries and plantations. Access to the mighty Mekong River also provides Laos with a tremendous hydropower potential, which has earned it the nickname “the Battery of Southeast Asia.” Between 2000 and 2011, the Lao government approved USD 13.9 billion in investment from foreign countries. Mining (29%), electricity generation (23%) and agriculture (15%) are the top three sectors that attracted investment from overseas, accounting for two-thirds of the total amount of foreign investment (figure 2).

Figure 2 Laos' Approved Inward Foreign Investment by Sectors (2000–2011)



From 2011 to 2015, Laos aims to use modern techniques to raise agricultural productivity and to further develop agricultural processing and industrial farming. Hydropower and mining remain its engines of economic growth. The construction of eight hydropower stations with a total installed capacity of 2,862 MW is planned for completion by 2015, with another 10 projects totaling to 5,105 MW in planning over the same period. The mining sector is expected to process more than 100,000 tons of kali salt, produce 86,200 tons copper plates, six tons of gold bars, 728,000 tons of coal, 298,000 tons of copper dust, and 600,000 tons of gypsum per year^①.

① Lao Government, the *Seventh National Socio-Economic Development Plan (2011-2015)*, Lao PDR.

Attracting and promoting further investment in the mining, hydropower and agriculture sectors is a strategic objective for the Lao government to achieve economic development. While an expansion of these sectors is necessary to maintain an annual economic growth rate above 8% to remove the country from the LDC list by 2020, it will also impact Laos' natural environment, biodiversity, and the livelihoods of local people significantly. The country's *Seventh National Socio-Economic Development Plan* clearly points out that one lesson learned from the economic development experienced in the period from 2006 to 2010 is that economic growth should be pursued sustainably, while promoting environmental conservation and cultural and human development. As a consequence, in the plan, the Lao government recommends incorporating sustainable development in the design of macro-policies, as well as in the policy implementation process.



Investment Management System of Lao PDR

- 2.1 Types of Foreign Investment
- 2.2 Foreign Investment Management Authorities
- 2.3 Approval for Investment in Concession Business
- 2.4 Laws and Policies on Environmental and Social Impact Control with regard to Investment in Mining, Hydropower and Agriculture Sectors
- 2.5 Opportunities and Challenges for Environmental and Social Impact Control Policies on Investment

2.1 Types of Foreign Investment

In Lao PDR, foreign investment is divided into three categories: concession business, investment activities for the development of special economic zones (SEZs) and specific economic zones, and general business.

According to the *Law on Investment Promotion*, concession business refers to investment activities authorized by the government to utilize ownership and other rights of the government in conformity with regulations for the purpose of developing and conducting business operations. Investments in agriculture on the lease of government land and investments in the mining and power sectors all belong to this category.

Investment activities for the development of SEZs and specific economic zones include the construction of infrastructure and new cities in accordance with current conditions and laws.

Investment activities that fall outside the categories of concession business and the development of SEZs are regulated as general business.

2.2 Foreign Investment Management Authorities

Foreign investment management authorities in Lao PDR consist of governmental agencies overseeing planning and investment, industry and commerce, along with special economic zones and specific economic zones respectively. In all three areas the authorized agencies are responsible for managing investment in cooperation with other relevant sectors and local administrative authorities in accordance with their roles.

Ministry of Planning and Investment, and Ministry of Industry and Commerce

The Government has designated the Ministry of Planning and Investment (MPI) and the Ministry of Industry and Commerce (MIC) as the main regulatory agencies for investment management.

The MPI is in charge of attracting investment into Lao PDR, and both MPI and MIC share the following responsibilities:

- To examine and formulate strategies, policies, laws and regulations related to foreign investment, and to provide instructions, monitor and coordinate with other sectors and relevant local authorities in the implementation of these laws and regulations;
- To work as intermediaries and coordinators in promoting investment, and to provide back office support to investment projects;
- To examine and issue, suspend, withdraw, and terminate registration certificates or agreements as necessary. MPI is in charge of issuing concession registration certificates and concession certificates after approval by relevant authorities. MIC is in charge of issuing enterprise registration certificates to general business investors.

One-stop Service Office for Investment

One-stop Service Offices are housed in MPI, MIC and the Ministry of Finance (MOF). They provide many services to facilitate investment, particularly by providing information, processing investment applications, issuing enterprise registration certificates or concession certificates and issuing investment notices.^① For example, the One-stop Service Office in MPI is responsible for the management of investment in concession business, that in MIC is charged with managing investment in general business, while that in MOF is responsible for managing tax paperwork of investment. They also convene meetings of representatives appointed by relevant stakeholders and local authorities to examine problems related to investment activities.

^① Article 44–1, *Law on Investment Promotion*, National Assembly, 2009

Other Related Authorities

Relevant sectors and local authorities, such as the Ministry of Energy and Mines (MEM), the Ministry of Agriculture and Forestry (MAF), and Ministry of Natural Resources and Environment (MONRE) are also engaged in supporting and managing investment.

For example, MEM plays a major role in approving mining concessions and promoting the development of mineral extraction; MAF leads the approval of agro-forestry concessions; MONRE is responsible for negotiating environmental and social impact assessments, resettlement, and compensation recommendations with investors, as well as monitoring and managing the environmental social impacts caused by concessions.

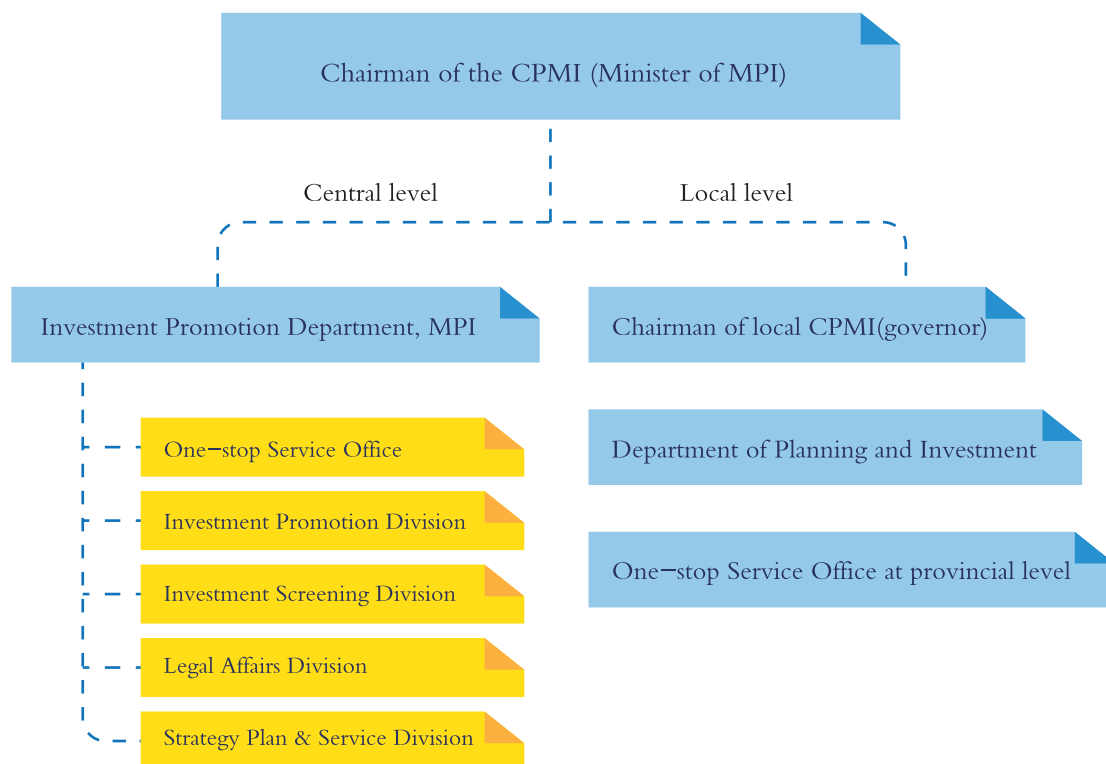
Meanwhile, relevant sectors and local authorities also appoint coordinating bodies to provide necessary sectoral and local investment information to the One-stop Service Offices.

2.3 Approval for Investment in Concession Business

Approval procedures for different types of investment vary a lot, according to the *Law on Investment Promotion*. This section mainly introduces the approval procedure for investments in concession business, since most Chinese investments in Laos fall under this category.

Management Structure

The body that oversees concession business approvals is the Committee for Promotion and Management of Investment (CPMI), which operates both at the central and local level and comprises committee members from related ministries and departments. At the central level the chairman of CPMI is the Minister of MPI, and at local level the CPMI chairman is the provincial governor or, in the case of Vientiane, the mayor. The structure of CPMI is depicted in Figure 3.

Figure 3 Structure of the Committee for Promotion and Management of Investment^②

② Lao PDR's Investment Guide Book, 2011 edition; Law on Investment Promotion, National Assembly, 2009

Approval Procedure

The One-stop Service Office in MPI is responsible for conducting a preliminary screening of applications for concession business. If applications are found to be in line with Laos' investment principles and public interest, the One-stop Service Office will advise investors on preparing documents by providing predefined templates, such as a feasibility study, an environmental and social impact assessment. MPI at the central level or the Department of Planning and Investment (DPI) at the provincial level will lead the negotiations over the concession with other relevant agencies including MOF, MONRE, MIC, MEM, or MAF, depending on the scale and type of proposed investment activities. MPI and DPI will then report the outcomes of the negotiations and submit the draft concession agreement to CPMI. Finally, the central government or provincial authorities sign the agreement presented to them by the committee. With the approval of all parties, MPI or DPI will issue a Concession Registration Certificate and Concession Certificate to the investors. Detailed approval procedures are depicted in Figure 4. Table 1 shows concession activities and corresponding levels of approving authorities.

Table 1 Concession Activities by Sector and Approval Level^③

Sectors	Central level	Provincial level
Mining	Prospecting and exploration; mining; mineral processing, exploration and mining of crude oil and gases	Artisanal alluvia gold mining, alluvia tin mining and mineral sediments mining which use basic equipment instead of modern machinery and equipment; sand and stones extraction for use in construction works
Power	Development of hydroelectric power, wind power, solar power and thermoelectricity power with installation capacity of 5MW and above	Development of hydroelectric power, wind power, solar power and thermoelectricity power with installation capacity less than 5MW
Others	Investment in the telecommunication sector, orbit satellites, radio and television stations, airlines, air and sea transports; investment (concession) in the construction of infrastructure, markets, commercial centers, touristic areas, camps, parks, offices, residences and other investments using government land	

^③ Annex 3, *Law on Investment Promotion*, National Assembly, 2009

Figure 4 Approval Procedures for Concession Investment^④

^④ Lao PDR's Investment Guide Book, 2011 edition; Law on Investment Promotion, National Assembly, 2009

2.4 Laws and Policies on Environmental and Social Impact Control with regard to Investment in Mining, Hydropower and Agriculture Sectors

Environmental and Social Rules in Investment Laws and Policies

According to the 2009 *Investment Promotion Law*, incorporating environmental and social considerations into investment projects should be a guiding principle for investment and an obligation for investors.

It is required that investment should contribute to the improvement of living conditions, in conformity with laws and regulations, and ensure the protection of the environment and security in society and in the investment zones^⑤. Regarding investors' obligations to protect and manage the environment, business activities must not cause severe adverse impacts to the local community, national security, public order or the health of workers. If any environmental problems were to occur, investors would be obligated to undertake necessary measures to solve the problems in accordance with the laws in a timely manner^⑥.

^⑤ Article 5, *Law on Investment Promotion*, National Assembly, 2009

^⑥ Article 70, *Law on Investment Promotion*, National Assembly, 2009

^⑦ Article 74, Article 76, *Law on Investment Promotion*, National Assembly, 2009

In situations where investment activities have severe negative impacts on the environment and socio-economic development, or if the business operations do not comply with the laws and regulations, the Registration Authority has the right to suspend or cancel the investment project. In this case investors are required to find solutions or normalize the situation within a certain timeframe. If no solutions are found, the enterprise shall be dissolved in accordance with the *Enterprise Law*^⑦. Article 76 specifies the procedures determining the cancellation of investment business. If operations are not in accordance with the concession agreement, laws and regulations or have a severe negative impact on environment, the Registration Authority will issue a warning notice to the investor. The latter is expected to solve the problem or improve the situation within ninety days from the date of issue of the warning notice. If things are not improved within the ninety days, the Registration Authority will issue a second warning notice, giving the investor sixty additional days to solve the problem. If the investor still fails to take action, the Registration Authority will then notify the investor of the cancellation of the project.

The *Decree on the Implementation of the Investment Promotion Law* (2010) further specifies the obligation of foreign investors who have acquired land use rights. It requires foreign investors to refrain from causing land degradation, negatively affecting the natural and social environment, and from violating the rights and interests of others.

Obligations for Foreign Investors in the Environmental Protection Law

⑧ The most recent law is the *Environmental Protection Law*, National Assembly, Lao PRD, 2012

The first *Environmental Protection Law*^⑧ of Lao PDR was issued in 1999. It stipulated principles and measures for managing natural resources, protecting the environment, and ensuring Laos' sustainable socio-economic development.

⑨ Article 7, Article 8, *Environmental Protection Law*, National Assembly, Lao PRD, 2012

In 2012, the *Environmental Protection Law* was revised. The original language was strengthened, and the requirements became more specific with new content added on topics including environmental prevention, pollution control, environmental certification and permission. The new *Environmental Protection Law* makes environmental protection a compulsory duty for foreign investors. It requires persons, legal entities and organizations, including Lao citizens, aliens, and foreigners who are living and working in Lao PDR to commit to protect the environment, to avoid activities leading to environmental degradation and pollution in excess of the Pollution Control Standard and the National Environmental Quality Standard^⑨. Meanwhile, all development projects and activities that could potentially affect the environment are required to undergo an Initial Environmental Examination (IEE) or EIA. These measures are meant to anticipate possible environmental and social damages and to help identify appropriate methods and measures to prevent, avoid or mitigate the impact of the projects. Companies required to conduct EIA will also have to develop Environmental Social Management and Monitoring Plans (ESMMP). MONRE must review and approve both the EIA and the ESMMP prior to the project becoming operational^⑩. The law also requires all organizations to control pollution in accordance with the Environmental Quality Standards set forth in relevant regulations^⑪.

⑩ Article 21, Article 22, *Environmental Protection Law*, National Assembly, Lao PRD, 2012

⑪ Article 34, *Environmental Protection Law*, National Assembly, Lao PRD, 2012

An Environmental Protection Fund was established in Laos to support studies, projects, and policy research on environmental protection, pollution control, and green development, as required by the 1999 *Environmental Protection Law*. While fees from development projects and contributions from the private sector are listed among sources for the Fund by the 1999 law, the 2012 law further clarifies that the Fund also refers to environmental rehabilitation fees from investment projects, payment for ecological services, and fines and indemnities of environmental damages. During a meeting with MONRE and China Southern Grid in Vientiane in February 2014^⑫, it was learned that China Southern Grid made contributions to the Environmental Protection Fund to promote biodiversity conservation and ecological restoration work in areas located upstream from its hydropower projects^⑬.

⑫ Article 66, Article 67, *Environmental Protection Law*, National Assembly, Lao PRD, 2012

⑬ Personal interview with MONRE, February 25th, 2014; personal interview with China Southern Grid, February 28th, 2014

Ministerial Instructions on IEE and ESIA of Investment Projects

By the end of 2013, three ministerial instructions, the *Ministerial Instruction on the Process of Initial Environmental Examination of the Investment Project and Activities* (the IEE Instruction), the *Ministerial Instruction on the Process of Environmental and Social Impact Assessment of the Investment Projects and Activities* (the ESIA Instruction), and the *Ministerial Agreement on the Endorsement and Promulgation of List of Investment Projects and Activities Requiring for Conducting the Initial Environmental Examination or Environmental and Social Impact Assessment* (the Project List), were issued by MONRE to guide IEE and ESIA work on investment projects in Lao PDR. These three instructions stipulate specifically and comprehensively what the procedures, management, implementation, and monitoring of IEE and ESIA for investment projects and activities should be.

According to these instructions, investment projects and activities are divided into two groups. Investment projects and activities in group 1 are required to conduct IEE, while projects and activities in group 2 are required to conduct ESIA, which offers a much more comprehensive evaluation of the environmental and social impacts of projects.

The Project List classifies investment projects and activities as falling under the energy sector, agriculture and forestry, industrial processing, the infrastructure and service sectors, and mining; it also lists the standards that divide group 1 and group 2 by project type and scale. For example, a hydropower plant project with an installed capacity equal or greater than 15 MW, or with reservoir volume capacity equal or greater than 2 million cubic meters, or with reservoir area equal or greater than 1500 hectares shall conduct ESIA. Smaller scale hydropower plant construction projects must conduct an IEE instead. Exceptions are made for investment projects and activities that require compensation and resettlement of individuals, or located in a Socially and Environmentally Valuable Site, a denomination that includes protected areas, conservation zones and cultural and historical heritage sites. These investment projects are always required to conduct ESIA, no matter whether they are categorized in group 2 or not.

The owner of the investment project is responsible for carrying out the IEE and the ESIA. The project developer must also obtain an environmental compliance certificate before signing any Concession Agreement, Mineral Exploration and Production Agreement or starting construction works, or before any operating permit can be issued.

Only a consulting firm or a consultant, whether domestic or foreign, registered at MONRE is eligible to carry out IEE/ESIA. During the IEE/ESIA process and the implementation of ESMMP, public participation and discussion with local administrations at all levels must be guaranteed in accordance with the *Guideline on Public Involvement* in the project IEE and ESIA process. Figure 5 and 6 depict processes for IEE and ESIA respectively.

In cases where investors fail to carry out ESMMP or comply with conditions set out in the environmental compliance certificate (ECC), MONRE, in agreement with the higher-ranking authorities, is entitled to revoke or suspend the ECC anytime during the investment period. MONRE is also entitled to propose suspending or canceling the investment project to the MPI if substantial and dangerous social and environmental impacts are generated.

Figure 5 IEE Process^⑭

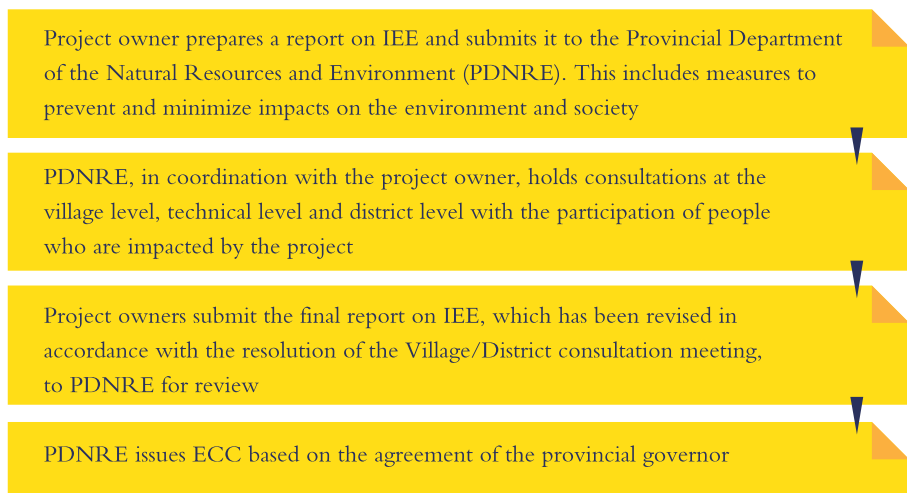
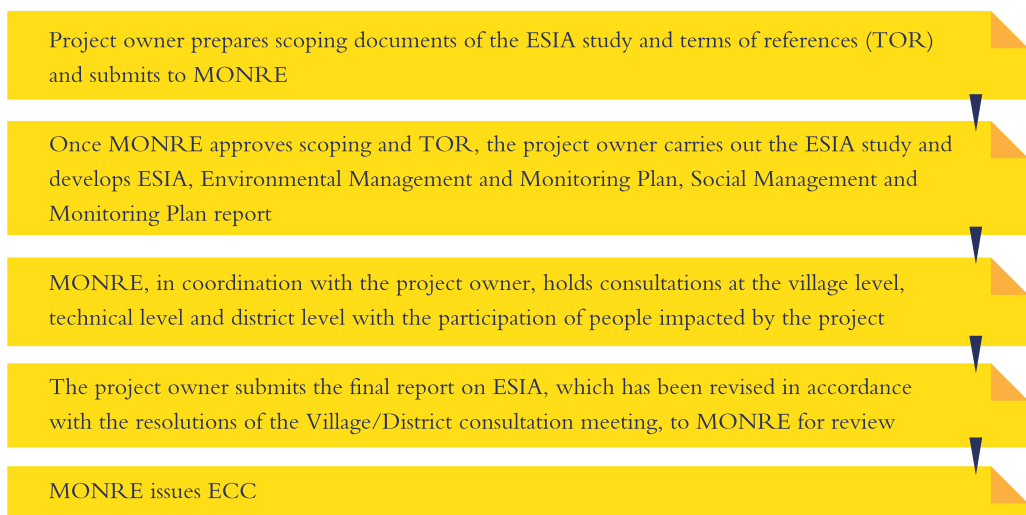


Figure 6 ESIA Process^⑮



^⑭ The Ministerial Instruction on the Process of Initial Environmental Examination of the Investment Project and Activities, MONRE, Lao PDR, 2013

^⑮ The Ministerial Instruction on the Process of Environmental and Social Impact Assessment of the Investment Projects and Activities, MONRE, Lao PDR, 2013

Policies on Compensation and Resettlement in Development Projects

In 2005 and 2006, government authorities issued the *Decree on Compensation and Resettlement of People Affected by Development Projects* (2005), the *Technical Guideline on Compensation and Resettlement on People Affected in Development Projects* (2005), and the *Regulations for Implementing Decree on Compensation and Resettlement of People Affected by Development Projects* (2006). These three documents outline principles, rules, and measures to mitigate the adverse social impact of development projects, and to compensate damages resulting from contentious acquisition or repossession of land, fixed or moveable assets.

The 2005 *Decree on Compensation and Resettlement* aims to ensure that people affected by projects are compensated and receive assistance to improve or maintain their pre-project incomes and living standards, and are not worse off than they would have been without the project. The 2005 *Technical Guideline on Compensation and Resettlement* further stipulates procedures to deal with compensation and resettlement issues and introduces a variety of useful planning tools for project planners.

Project owners are responsible for minimizing and mitigating the social impact of their investments in accordance with these rules. They are directed to work with concerned local governmental authorities and organizations to identify affected communities, prepare an inventory of impacts by type and degree, determine entitlements to mitigation measures, including compensation for affected assets, and provide an adequate budget for the planning, implementation, monitoring and evaluation of resettlement and compensation activities. The 2006 Regulations links resettlement procedures to the project cycle. Table 2 lists the different stages of the project cycle and corresponding resettlement processes¹⁶.

¹⁶ Suhardiman, D; de Silva, S; and Carew-Reid, J. (May 2011) Policy Review and Institutional Analysis of the Hydropower Sector in Lao PDR, Cambodia, and Vietnam, <http://cgspace.cgiar.org/handle/10568/16502>.

Table 2 Project Cycle and Corresponding Resettlement Processes

Project Cycle	Resettlement Process
Identification	Screening/Initial Social Assessment/TOR for Social Impact Assessment
Pre-feasibility study	Redefine TOR/assess options for minimizing adverse impacts/selection of a suitable design option
Feasibility study	SIA/Socio-Economic Survey/Inventory of Losses/ Resettlement Plan (RP)/ Ethnic Minority Development Plan (EMDP)
Detailed study	Updated/final RP/EMDP
Construction/Operation	RP/EMDP implementation and monitoring

Article 12 of the 2005 Decree stipulates the requirements for public participation in the resettlement process. Project owners are obliged to ensure that all stakeholders, including affected people and local authorities, are fully informed and consulted and that their concerns are taken into account at all stages of the project cycle, particularly during the planning and implementation phases of the land acquisition, valuation and resettlement process. When it is necessary, project owners should also effectively use mass media to keep local authorities at provincial, district and village levels, as well as affected people and other stakeholders informed about the project and resettlement arrangements.

One problem with resettlement and compensation policies in development projects in place before 2013 is that, although they clearly stipulated project owners' obligations and the procedures for resettlement and compensation, none of them specified which government agency was responsible for resettlement, compensation management and reprimanding companies that fail to comply with their resettlement agreements. This problem has been solved by the release of the ministerial instructions on IEE and ESIA in 2013. According to the IEE and ESIA instructions, MONRE and PDNRE are in charge of managing the quality and monitoring the implementation of resettlement and compensation plans.

2.5 Opportunities and Challenges for Environmental and Social Impact Control Policies on Investment

In general, the Lao government has become significantly more environmentally aware, and sound environmental and social impact control policies have been developed in recent years. The revision and release of environmental and social impact control policies since 2005, as well as the incorporation of environmental conservation, cultural and human development in the *Seventh National Socio-Economic Development Plan* (2011–2015) indicate the Lao government's commitment to promote sustainable development. These measures also form a solid basis for the government's management of investments that have an environmental and social impact.

The *Environmental Protection Law* (2012) and the three ministerial instructions on IEE and ESIA on investment projects stipulate clearly and comprehensively the procedures and measures that need to be taken to prevent, minimize, manage and monitor the environmental and social impacts of investment activities for both project owners and relevant government agencies. In particular MONRE and PDNRE, the main authorities in charge of monitoring the environmental and social repercussions of investments. The release of the new *Environmental Protection Law* and the Ministerial instructions marked the maturity of the legal framework on governing environmental and social impacts of investment in mining, hydropower and agriculture. These new rules are coherent with the environmental and social requirements, compensation and resettlement policies, as well as the procedures to determine the cancellation of investment business, stipulated in the *Law on Investment Promotion*.

During interviews with Chinese investors, NGOs, governmental agencies who are concerned with foreign investment in mining, hydropower and agriculture in Vientiane in February, 2014, it was widely agreed that the 2012 *Environmental Protection Law*, the three Ministerial instructions and the policies on resettlement and compensation, are well drafted and set high standards for environmental and social impact control of investment activities. The good quality of these policies is partially due to the direct assistance and engagement of international experts from UNDP, the World Bank and foreign aid projects of developed countries, which have facilitated the incorporation of international standards and experiences of developed countries into Laos' domestic laws and policies.

Undoubtedly, the surging environmental awareness of the Lao government and the recent release of well-drafted environmental and social impact control policies regarding investment activities indicate stronger and stricter environmental and social management policies on mining, hydropower and agricultural investment in the country. Meanwhile, the openness of the Lao government to receive technical advice and support from international actors on domestic environmental policy provides favorable conditions for the further development of sound regulations addressing sectoral environmental and social issues.

Although significant progress has been achieved on the policy development front, the management and mitigation of environmental and social impacts from investment projects in Laos still faces major challenges. The most serious and urgent problem is that IEE and ESIA are often not carried out with diligence. During interviews conducted by GEI in February 2014 in Vientiane, MONRE officials and international experts refer to implementation and monitoring issues associated with IEE and ESIA. All those who were interviewed agreed that the root cause lies in the lack of environmental professionals and technicians in both the Lao government and the Lao private sector skilled in screening, implementing, evaluating and monitoring IEE, ESIA and ESMMP. There have been many cases where consulting companies simply “cut and paste” from one completed form to the next while filling out the IEE/ESIA report, sometimes not even bothering to change project location. Hydropower projects might then be approved based on an ESIA from a previous mining concession¹⁷.

¹⁷ Foran, T. (11 October 2010) Mekong hydropower development: a review of governance and sustainability challenges. Ministry for Foreign Affairs of Finland.

Another common impediment to the successful implementation of environmental and social control policies regarding investment projects is insufficient coordination among MONRE, PDNRE, MPI, other relevant ministries, local stakeholders and project owners. This not only leads to inadequacies in impact assessment but also to projects being launched before an ECC is issued.

rural areas, a prominent problem is poor communication between the project owners and Laotian stakeholders, partially due to language barriers. Local consulting firms, consultants, and translators are hired to work as intermediaries and to help ensure Chinese investors' compliance with environmental and social laws. But if the project owners themselves do not fully understand these laws, environmental and social management work is likely to be poor in quality and marginal within the company. This is especially likely in situations when local expertise or government management and monitoring are weak. For example, though required by law, public disclosure of ESIA reports has not been implemented by most project developers. There are also resettlement and compensation issues between villagers and project owners, which are often caused by poor communication and inadequate public participation.



China's Mining, Hydropower, and Agricultural Investment in Laos

- 3.1 Mining Investment
- 3.2 Hydropower Investment
- 3.3 Agricultural Investment

After a turbulent history during the Cold War, relations between Laos and China, its largest neighbor, were normalized in 1989. We can trace China's earliest investments in the country back to that date. During the last decade or more, China has been among Laos' biggest sources of foreign direct investment (FDI), investing in a range of sectors including hydropower, mining, trade and services, construction materials, agriculture and livestock, among others. Chinese companies also actively bid for and win contracting projects in Laos, occupying about 25% of the Lao contracting project market^①.

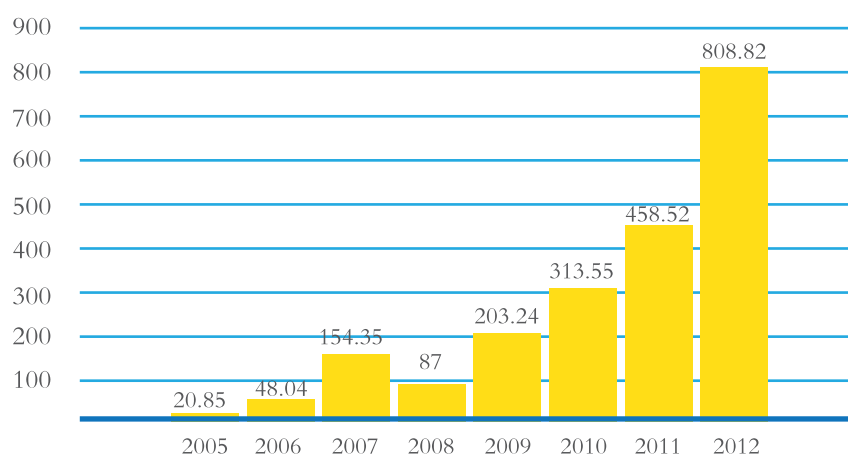
① ASEAN countries' Investment Guide (Laos)" ,Foreign Affairs Office of Guangxi Zhuang Autonomous Region. <http://www.gxfao.gov.cn/gxfaohtml/tzzn/091204720.html> (in Chinese)

Statistics show that China's outward investment to Laos increased dramatically from 2005 to 2011, growing steadily every year with the exception of 2008 (see figure 9 for China's OFDI to Laos between 2005 and 2011). Literature or information explaining the outlier could not be found, but it was probably due to the impact of the global financial crisis, since in 2008 flows from all major investor countries to Lao decreased. As a response, the Lao government issued the *Law on Investment Promotion* in 2009, providing tax exemptions for foreign investment. Since then China's FDI outflows to Laos experienced a steady increase of around 58.5% each year between 2009 and 2012. In late 2013, China has become the largest investor in Laos with over US\$5 billion invested in the country^②, edging out Thailand and Vietnam.

② China Daily, "China becomes largest investor in Laos", January 30, 2014. http://www.chinadaily.com.cn/world/2014-01/30/content_17266379.htm (in Chinese).

Figure 7 Total Chinese Investment in Laos, 2005–2012

Unit: Million in US dollar



Source: 2012 Statistical Bulletin of China's Outward Foreign Direct Investment

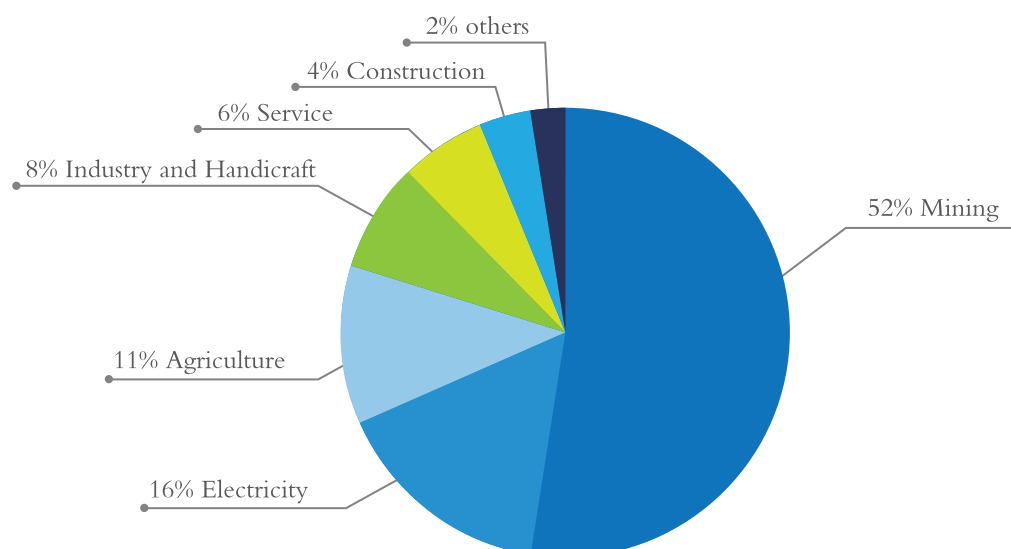
By 2011, more than half of Chinese investments in Laos were in the mining sector, while electricity generation accounted for 16% and agriculture 11% (see figure 8). As of 2013, there were approximately 700 Chinese companies operating in Laos. Of these, the Chinese Embassy in Vientiane has kept a record of about 300 and around 200 have registered at the Chinese Chamber of Commerce in Laos. While there are around twenty central SOEs working in the fields of hydropower, mining, agriculture and telecommunications, all of which are undertaking large bilateral cooperative projects and development projects, the majority of the 700 Chinese companies in Laos are private enterprises or provincially owned enterprises^③.

③ Xinhuanet, “Chinese Companies in Laos: Each Shows Its Special Prowess”, March 29, 2013. http://news.xinhuanet.com/cankao/2013-03/29/c_132271125.htm (in Chinese).

④ NetEase, “Yunnan Leads the Chinese Investment in Laos and Sino–Laos Bilateral Cooperation”, April 24, 2014. <http://news.163.com/11/0424/21/72EGA7C800014JB6.html> (in Chinese).

The Lao Consul–General in Kunming once indicated in 2011 that most Chinese companies operating in Laos come from Yunnan Province, the only province in China that shares a border with Laos. There were 126 Yunnanese companies investing in Laos by March 2011^④. However, it is believed that the actual number of companies, particularly small and medium enterprises (SMEs), from Yunnan Province operating in Laos are much higher, as there are many small companies and individuals simply carrying money across the border to invest in mines and plantations, which is difficult to account for.

Figure 8 Approved Chinese Investment in Lao PDR by Sectors (2000 – mid 2011)^⑤



⑤ Guo, J., “China’s FDI to Laos and Its Impact”, *Southeast Asia Studies*, 5 (2013): 39.

⑥ Information and data in this section mainly come from Lao Ministry of Planning and Investment and the Chinese Embassy in Laos.

3.1 Mining Investment^⑥

The Lao government had approved 470 investment projects in its mining sector as of January 2014, with a total investment of US\$5.9 billion. Mining project concession areas have reached 36,323 square kilometers, about 15% of the total national territory (236,800 square kilometers).

There are twenty-one kinds of minerals that are extracted in Laos, but copper is by far the most exploited resource. There are forty-nine copper mines, accounting for 24% of total projects and occupying 40% of total concession areas (14,463 out of 36,323 square kilometers). Iron ore, with twenty-nine projects (14%) and 3,429 square kilometers of concession areas, ranks second in number of projects. Other major recipients of investments are gold mines (twenty-four projects, 4,394 square kilometers of concession areas) and coal mines (eighteen projects, 2,782 square kilometers).

Geographically speaking, more than half of the investment projects in the mining sector are located in the northern part of Laos, where there are 21,433 square kilometers of mining concession areas (59%) and fifteen kinds of minerals extracted. Copper mines dominate the northern area, accounting for 58% of the total concession area, followed by gold, iron ore and coal.

Central Laos has thirteen kinds of minerals, with a total of 7,584 square kilometers in concession areas. Two major minerals in this region are potash (2,923 square kilometers) and gold (2,130 square kilometers); together they account for two-thirds of mining areas in the central part of Laos.

The South has seven kinds of minerals and 7,297 square kilometers of mining concession areas. It is rich in bauxite, concession areas for which account for 3,101 square kilometers (43%) in the region, followed by copper (23%) and iron ore (15%).

According to the Chinese Chamber of Commerce in Laos, there are currently between sixty and seventy Chinese companies investing in the Lao mining sector, the majority of which are private companies. Gold and copper mines remain the most invested in, followed by potash and bauxite. It is reported that nine out of ten potash mines approved by the Lao government have Chinese investors or are Chinese owned, and six Chinese companies are investing in bauxite mines in and near Attapeu in southern Laos (see table 3)^⑦.

⑦ Ta Kung Pao, "Chinese Companies Set Path in Laos, and Investment in Mining Sector Take the Lead", September 27, 2013.
http://news.takungpao.com/world/exclusive/2013-09/1930745_2.html (in Chinese).

Table 3 A List of Identified Chinese SOEs Investing in Laos' Mining Sector^⑧

Project	Location	Related SOEs	Local Implementation Company	Note
Sepon Copper and Gold Mining Project	Savannakhet	China Resource Ltd.(China Minmentals Corporation)	MMG LXML Sepon	Central SOE
Vientiane Plain Potash Mining Project	Vientiane	Sinohydro Resources Ltd., (POWERCHINA)	Sinohydro Lao Potash Mining Co. Ltd.	Central SOE
Northeastern Sakon Nakhon Basin Potash Mining Project	Khammouane	China National Agricultural Means of Production Group Corporation	Jiaxi Lao Potash Development Co. Ltd	Central SOE
Bolaven Plateau Bauxite Project (the LSI tenement and the Yishida tenement)	Champasak	Cresto Resources Holding Limited, (China Nonferrous Metals Construction Co., Ltd.)	Sino Australian Resources (Laos) Co., Ltd (SARCO)	Central SOE
Bolaven Plateau Bauxite Project	Champasak	Sinoma International EngineeringCo. Ltd. (SINOMA)	Sinoma International Engineering Co., Ltd. (SINOMA)	Central SOE
Champasak Aluminum Base project	Champasak	China (Hongkong) Aluminum Co., Ltd. (CHINALCO)	Lao Mining Service Co., Ltd.	Central SOE
Bolaven Plateau Bauxite Project	Champasak	Yunnan Aluminum Corporation Limited (Yunnan Metallurgy Group General Co.)	Sino-Lao Aluminum Co., Ltd.	Local SOE
Potash Mining Project	Vientiane	Yunnan Sino-Liao Mining Investment Co. Ltd. (Yuntianhua Group Co., Ltd)	Yunnan Sino-Liao Mining Potash Co. Ltd.	Local SOE
N/A	N/A	Sanmu Mining Co. Ltd. of Yunnan Copper Group Co. (CHINALCO)	Yunnan Cooper Group Oudomxay Co.; Yunnan Copper Group Phongsaly Co.	Central SOE

⑧ A complete list of information on location, investment, years of operation, etc. can be found in Annex B.

We have identified and located eighty-five mine sites in Laos that Chinese companies have invested in (figure 9). From the map we can see that a number of those Chinese mining projects are located in northern Laos (especially in Phongsaly Province and Oudomxay Province in the border areas), the Vientiane Plateau (rich in potash) and southern Laos (rich in bauxite). Overlaying with key biodiversity areas identified by the Critical Ecosystem Partnership Fund (CEPF), we found Chinese mining projects in CEPF key biodiversity areas in following provinces: Phongsaly, Luangnamtha and Houaphanh in the north, Bolikhamxay and Khammuane in central Laos, and Champasak and Attapeu in the south.

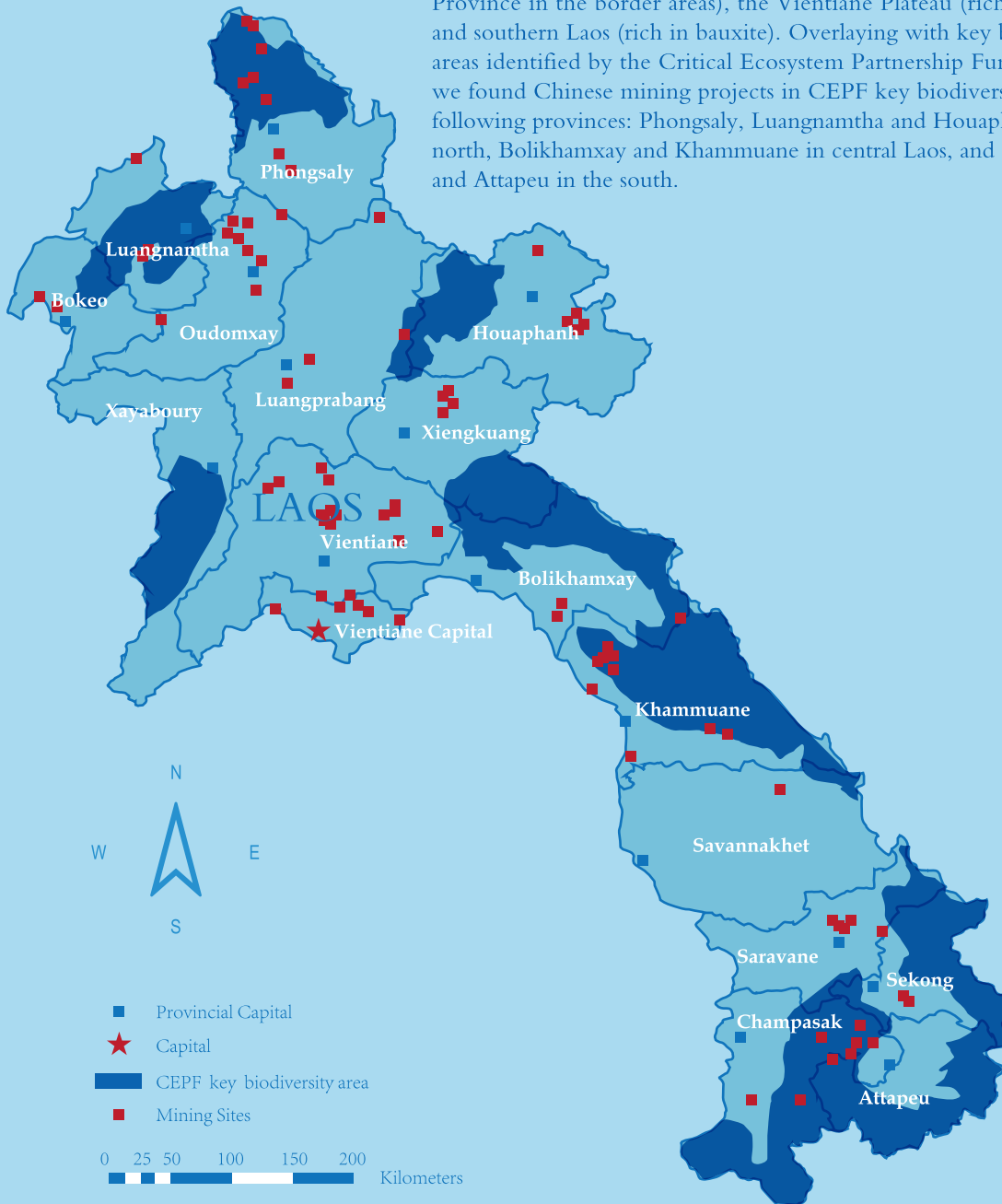


Figure 9 Map of Identified Mining Projects Invested by Chinese Enterprises in Lao PDR

There are not many SOEs involved in the Lao mining sector. In total six central SOEs investing in six mining projects and two local SOEs investing in two mines in Laos have been identified. Among the eight identified projects three are bauxite exploitation projects in the Bolaven Plateau in southern Laos located across Champasak, Sekong and Attapeu Provinces, three are potash projects, with one copper and gold mine project and one aluminum project. The Sepon gold and copper mine, with a total investment of US\$350 million, remains one of the largest foreign investment projects in Laos. Table 3 presents a list of identified Chinese SOEs investing in the Lao mining sector.

3.2 Hydropower Investment

The development of hydropower has been the main engine for economic growth in Laos, with electricity exports accounting for one-third of the country's foreign exchange earnings. The Lao government has set an ambitious plan to further advance the development of its domestic hydropower resources in the coming years in order to achieve economic growth and poverty alleviation^⑨.

In recent years, Chinese hydropower enterprises have actively participated in Laos' hydropower development through build-operate-transfer (BOT) projects in hydropower stations and engineering, procurement and construction (EPC) for hydropower stations and power transmission infrastructure. As of June 2013, nearly half of Laos' total installed hydropower capacity derived from hydropower stations that received Chinese investment or were constructed by Chinese firms. These include seven completed projects, seventeen under construction, and several others at advanced planning stages or for which MOUs have been agreed with the Lao government^⑩.

So far, all the identified Chinese companies in Laos' hydropower sector are SOEs (see table 4). This is due to the nature of medium and large hydropower stations, which require a huge investment over long periods and close communication with all levels of the host government.

Among all Chinese hydropower companies in Laos, Sinohydro (POWERCHINA) has the largest presence and market share, with 2,593 MW (45%) out of 5,767.8 MW installed capacity (including projects completed, under construction and planned), followed by China Datang (1,581 MW planned, 27%) and CWE (617 MW, 11%).

⑨ The Chinese Embassy in Laos, <http://la.china-embassy.org/chn/xwdt/t1125033.htm> (in Chinese), January 23, 2014.

⑩ Guo, J. (2013) "China's FDI to Laos and Its Impact", *Southeast Asia Studies*, 5: 40. According to the author's interview with officials from the Investment Promotion Department of the Ministry of Planning and Investment, Lao PDR.

Table 4 Table 4 A List of Identified Chinese SOEs Investing/Contracting in Laos' Hydropower Sector

Project	Location	Project Type	Related SOEs	Note
Nam Ngum 5	Luangprabang and Xiangkhouang	BOT	Sinohydro Resources Ltd., (POWERCHINA)	Central SOE
Nam Ou 2	Luangprabang			
Nam Ou 5	Phongsaly			
Nam Ou 6	Phongsaly			
Nam Ou 7	Phongsaly			
Nam Ou 1	Luangprabang			
Nam Ou 3	N/A			
Nam Ou 4	N/A			
Nam Khan 3	N/A	EPC		
Nam Khan 2	N/A	EPC		
Pak Lay	Xayabury and Vientiane	BOT	Sinohydro Resources Ltd., POWERCHINA, China Electronics Import & Export Co. (CEIEC)	Central SOE
Nam Sane 3A	Xiengkhouang	EPC	Sinohydro Resources Ltd., POWERCHINA, China Electronics Import & Export Co. (CEIEC)	Central SOE
Nam Sane 3B	Xiengkhouang	EPC		
Nam Mang 1	Borikhamxay	BOT		
Nam Ngiep	Borikhamsay	N/A		
Xe Nam Noy	Attapau	N/A		
Nam Tha 1	Bokeo and Luangnamtha	BOT	China Southern Power Grid (CSG)	Central SOE

Project	Location	Project Type	Related SOEs	Note
Nam Lik 1/2	N/A	BOT	China International Water and Electric Co., (CWE), (now a subsidiary of China Three Gorges Co.)	Central SOE
Sekaman 2	Sekong	N/A		
Nam Ngiep 2	Xiengkhouang	BOT		
Nam Mang 3	Vientiane	EPC		
Xebanghieng 1	Savannakhet	N/A		
Xebanghieng 2	Savannakhet	N/A		
Nam Leuk	Vientiane	EPC		
Pak Beng	Oudomxay and Xayabury	BOT	China Datang Overseas investment Co. Ltd.(CDO), China Datang International Power Generation Co. Ltd.	Central SOE
Sanakham	Xayabury and Vientiane	BOT		
Nam Ngum 1	Xiangkhouang	N/A	CGGC International Co., Ltd. (China Gezhouba Group Co. Ltd.)	Local SOE
Hui Lan Pang Ya	Champasak	EPC		
Xelanong 2	Savannakhet	N/A		
Xetanuan	Savannakhet	N/A		
Nam Beng	Oudomxay	BOT	China National Electrical Engineering Co. Ltd. (CNEEC), (China National Machinery Industry Corporation, SINOMACH)	Central SOE
Nam Phay	Vientiane	BOT	Norinco International Cooperation	Local SOE
Xepon 3	Savannakhet and Salavan	EPC	China National Machinery & Equipment Import & Export Corporation(CMEC)	Central SOE
Nam Feung	Vientiane	N/A	Yunnan Provincial Power Investment Co. Ltd.	Local SOE

Note: N/A means information unavailable.

① International Rivers, “Nam Ou River”, June 25, 2014
<http://www.internationalrivers.org/campaigns/nam-ou-river>.

The two northernmost dams of the Nam Ou Cascade, Nam Ou 6 and the planned Nam Ou 7, are located in and around Laos’ Phou Den Din National Protected Area (NPA) in the Phongsaly Province. This is where a pristine waterway and one of the last intact ecosystems in the country lies. According to International Rivers, the two dams will inundate a significant portion of the NPA^①. During our conversation with program staff at Sinohydro (POWERCHINA) it was confirmed that a certain area of the NPA will be inundated. However, no further details were disclosed and therefore at this stage we cannot be sure about the extent of environmental and social impacts the two dams will have.

Figure 10 illustrates the locations of all identified Chinese BOT and EPC hydropower stations in Laos. By overlaying the location map with CEPF’s map of key biodiversity areas, we can see that two northernmost dams of the Nam Ou Cascade, Nam Ou 6 and the planned Nam Ou 7, are located in and around Laos’ Phou Den Din National Protected Area (NPA) in the Phongsaly Province. This is where a pristine waterway and one of the last intact ecosystems in the country lies.

Other than Nam Ou 6 and Nam Ou 7, Nam Ngiep 2 and Nam Sane 3B in Xiengkhouang Province, Nam Ngum 1 in Vientiane Province, Nam Ngiep in Bolikhamxay, Xe Bang Hieng 2 in Savannakhet, and Xepon 3, Xelanong 2, Hui Lan Pang Ya, Xe Nam Noy, and Sekaman 2 hydropower projects in the southern provinces are also located in or around the CEPF key biodiversity areas.

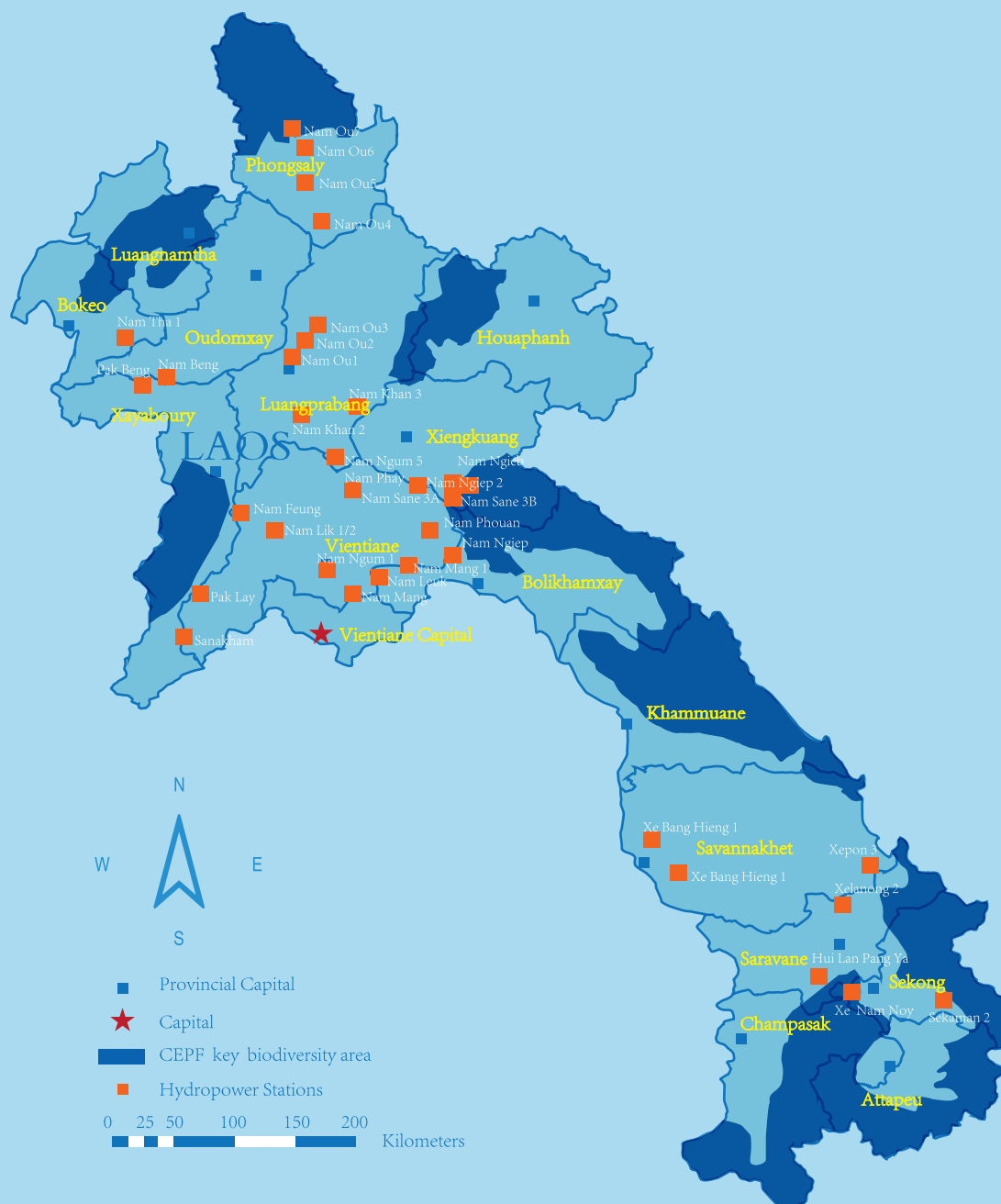


Figure 10 Map of Identified Chinese SOEs—Invested Hydropower Projects in Lao PDR

3.3 Agriculture Investment

While agriculture and forestry continue to play an important role in Laos' economy, especially in rural areas, the government has found that the overall contribution of the sector to national poverty reduction is relatively modest and below its potential (35% of GDP in 2008)^⑫. As a result, various policies have been adopted to promote commercialization and industrialization of the sector, including attraction of foreign investment.

As shown in Figure 10, approved Chinese investment in agriculture accounts for about 15% of total Chinese investment in Lao PDR. Compared to Chinese investment in other sectors in Laos, those companies investing in agricultural projects are relatively small in scale. As of the end of October 2011, 101 Chinese agricultural companies had been approved by MOFCOM and registered in Laos. Ninety (89%) of the 101 agricultural companies focus on plantation, while fifty-five of those are rubber plantation companies (just over 50%).

Among the above-mentioned 101 Chinese agricultural companies investing in Laos, there are only one central SOE and one local SOE (see table 5); the remaining ninety-nine are private companies, a majority of which come from Yunnan Province (sixty-seven, accounting for 66% of the total), followed by six firms from Hunan Province and five from Chongqing Municipality. It is, however, the central SOE and local SOE who play a leading role and have a real impact on agricultural investment in Laos thanks to their abundant capital; most of the private companies are small businesses that are vulnerable to investment risks^⑬.

⑫ Baumuller, H and Lazarus, K (2012) *Agribusiness Investments in Lao PDR: Opportunities and Challenges for Poverty Reduction*, Kunming: Yunnan Publishing Group.

⑬ Yi, Z. (2012) "Chinese Investment in Agriculture in Laos", China Economist, 3, P78

Table 5 A List of Identified Chinese SOEs Investing in Lao Agriculture Sector

Project	Location	Related SOEs	Note
Rubber Plantation in Northern Laos	Luangnamtha, Bokeo, Sainyabuli, Louangphrabang	Yunnan State Farms Group Co. Ltd	Local SOE
Tobacco Plantation and Processing	N/A	Hongta Group	Central SOE

Chinese firms have been diversifying their agricultural investments in Laos, which range from crop farming, forestry, breeding, as well as processing and marketing of agricultural and forest products. Geographically, however, Chinese investors are concentrated in northern Laos where they invest mainly in the plantation of rubber, rice, sugarcane, corn, cassava, jatropha, castor beans, vegetables, tropical fruits and tobacco^⑭.

⑭ Ibid.

Besides geographical advantages, the reason why there is a large presence of agricultural companies from Yunnan Province in Laos, particularly in the North, is because of China's opium substitution program that has been in place since the 1990s. The program is part of the Chinese government's development assistance program aimed at converting opium fields to other crops in Laos. China committed over RMB 500 million (about US\$82.5 million) to fund the initiative.

The program first began with watermelon production in a Lao border town where Chinese farmers and merchants rented land from Lao farmers after the rice harvest to grow watermelons. The Chinese provided the seeds, know-how and fertilizers, and contracted Lao farmers to cultivate the land (the "4+1" model). After the harvest, the watermelons were exported to China^⑮. Since then the cultivation of rubber has become increasingly widespread. The Yunnan Provincial Government signed an agreement with Lao local governments of LuangNamtha Province, Bokeo Province and Oudomxay Province to cultivate rubber. Since 2004 private companies have also been encouraged to cultivate rubber in Laos through financial instruments such as subsidies, loans and tariff exemptions offered as part of the opium substitution program. Since rubber trees can be harvested only five to seven years after they are planted, short-lived commercial crops, such as sugarcane and cassava, were also introduced. Farmers that were part of the program operated under a contract with Chinese companies and exported to China. As of 2011, the total areas of opium substitution program reached 1.15 million mu (about 76,666 hectares) in northern Laos^⑯.

⑮ Alessandro Bonanno et al., (2010) *From Community to Consumption: New and Classical Themes in Rural Sociological Research*, P3. Emerald Group Publishing.

⑯ Chinanews, "Opium Substitution Program Areas Reaches 1.15 Million Mu", April 25, 2011 <http://www.chinanews.com/cj/2011/04-25/2997005.shtml> (in Chinese).

In Figure 11, we marked Chinese agricultural projects identified through this research. Overlaying with key biodiversity areas identified by the CEPF, we found Chinese agricultural projects in CEPF key biodiversity areas in following provinces: Phongsaly, Luangnamtha and Bokeo in the north, Bolikhamxay and Khammuane in central Laos, and Champasak in the south.

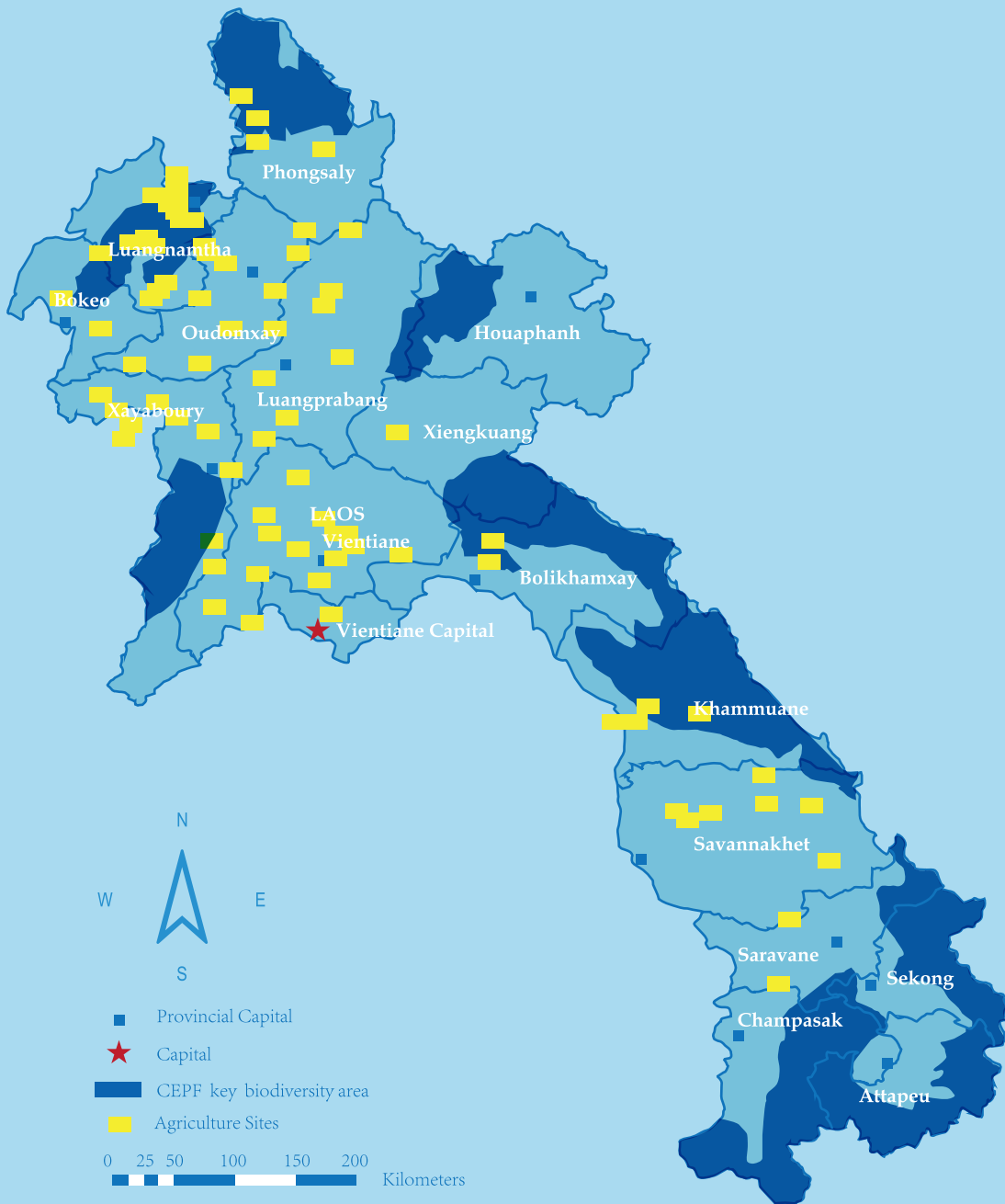


Figure 11 Map of Identified Chinese Invested Agricultural Projects in Lao PDR

Chinese SOEs–invested Hydropower Projects

Project	Related SOEs/Companies	Local Implementati—on Company	Location	Installed Capacity (MW)	Commis—sion Date (in MOU)	Project Status	Project Scale	Project Type	Amount of Investment
Nam Ngum 5	Sinohydro Resources Ltd., POWERCHINA	Nam Ngum 5 Electricity Generation Coporation Limited	On Nam Ting River in Luangprabang Province and Xiangkhouang Province	120	2012	Operating	N/A	BOT	\$222.8 million
Nam Ou 2, HuaiKan		Nam Ou River Electricity Generation Coporation Limited	3km upstream from B.Paknga village, Luangprabang Province	120	2018	Under construction	Catchment area 25,634 km	BOT	\$2 billion
Nam Ou 5, Hat Kiven			Phongsaly Province	240	2018	Under construction			
Nam Ou 6, Phongsali			Phongsaly Province	180	2018	Under construction			
Nam Ou 7, Hat Hin			Phongsaly Province	190	N/A	Commis—sioned			
Nam Ou 1			Luangprabang Province	160	N/A	Commis—sioned			
Nam Ou 3, NgoiNua			N/A	N/A	N/A	Commis—sioned			
Nam Ou 4			N/A	N/A	N/A	Commis—sioned			
Nam Khan 3		N/A	N/A	47	N/A	Under construction	N/A	EPC	\$430 million
Nam Khan 2		N/A	N/A	130	N/A	Under construction	N/A	EPC	\$350 million

Pak Lay	Sinohydro Resources Ltd., POWERCHINA	N/A	Xayabury and Vientiane Province	1320	2016	Under construction	Reservoir Area 108 km ²	BOT	\$1700million
	China Electronics Import & Export Co. (CEIEC)	N/A				Under construction		BOT	N/A
Nam Sane 3A	Dongfang Electric Corporation Limited (DEC Ltd.), Dongfang Electric Corporation (DEC)	N/A	Xiengkhouang	115	N/A	Under construction	N/A	EPC	N/A
Nam Sane 3B		N/A	Xiengkhouang		N/A	Under construction	N/A	EPC	N/A
Nam Mang 1		Nam Mang River Electric Corporation Limited	Bolikhamxay Province Thaphabath district	64	2016	Planned	N/A	BOT	\$99.49 million
Nam Ngiep		N/A	Borikhamxay	30	N/A	Planned	N/A	N/A	N/A
Xe Nam Noy		N/A	Attapau	14.8	N/A	Planned	N/A	N/A	N/A
Nam Lik 1/2	China International Water and Electric Corporation (CWE), (now a subsidiary of China Three Gorges Corp.)	N/A	Vientiane Province	100	2010	Operating	Catchment Area 1993 km ² ; Reservoir Area 24.4 km ²	BOT	\$85 million
Sekaman 2		N/A	Sekong	135	N/A	Planned	N/A	N/A	N/A
Nam Ngiep 2		N/A	Xiengkhouang Province	180	2015	Under construction	N/A	BOT	\$306.89 million
Nam Mang 3		N/A	Vientiane Province	40	2005	Completed	Catchment Area 82 km ² ; Reservoir Area 10.2 km ²	EPC	\$63million

Xebanghie-ng 1	CWE	N/A	Savannakhet Province	50	N/A	Completed	N/A	N/A	N/A
Xebanghie-ng 1		N/A	Savannakhet Province	52	N/A	N/A	N/A	N/A	N/A
Nam Leuk		N/A	Vientiane	60	N/A	Completed	N/A	EPC	N/A
Pak Beng	China Datang Overseas investment Co. Ltd. (CDTO), China	Datang (Lao) Pak Beng hydropower Co., Ltd	Oudomxay/ Xayaboury Province	921	2018	Planned	Reservior Area 87 km2	BOT	N/A
Sanakham	Datang International Power Generation Co. Ltd.	Datang (Lao) Sanakham hydropower Co., Ltd	Xayabury/Vientiane Province	660	2018	N/A	Reservior Area 94 km2	BOT	N/A
Nam Ngum 1	CGGC INTERNATIONAL LTD. (China Gezhouba Group Co. Ltd.)	N/A	Xiangkhouang	155	1971	Planned	N/A	N/A	N/A
Hui Lan Pang Ya		N/A	Xekong River, Bolaven Plateau	88	N/A	Under construction	N/A	EPC	\$206 million
Xelanong 2		N/A	Savannakhet Province	50	N/A	N/A	N/A	N/A	N/A
Xetanuan		N/A	Savannakhet Province	30	N/A	N/A	N/A	N/A	N/A
Nam Beng	China National Electrical Engineering Co. Ltd. (CNEEC) (China National Machinery Industry Corporation, SINOMACH)	N/A	Oudomxay Province	34	2016	N/A	Under construction	BOT	\$70 million

Nam Phay	Norinco International Cooperation	N/A	Northern Vientiane Province	86	N/A	N/A	N/A	BOT	\$212 million
Nam Tha 1	China Southern Power Grid (CSG)	N/A	Bokeo/ Luangnamtha Province	168	N/A	Under construction	N/A	BOT	\$300 million
Xepon 3	China National Machinery & Equipment Import & Export Corporation(CMEC)	N/A	220km west to Savannakhet Province, 140km southwest to Salavan Province	70	N/A	Under construction	N/A	EPC	N/A
Nam Feung	Yunnan Provincial Power Investment Co. Ltd.	N/A	Vientiane Province	28	N/A	N/A	N/A	N/A	N/A

Chinese SOEs–invested Agriculture Projects

Project	Related SOEs/Companies	Local Implementation Company	Relationship Between the SOE and the Local Company	Location	Project Status	Product	Project Scale	Amount of Investment
Rubber plantation in Northern Laos	Yunnan State Farms Group Co. Ltd.	Yunnan Invest Rubber Co. Ltd.	N/A	Luangnamtha, Bokeo, Sainyabuli, Louangphrabang	Operating	Rubber	1,666km2	\$142 million
Tobacco plantation and processing	Hongta Group	Laos Liao Zhong Hongta Good Luck Tobacco Co. Ltd. (LLHGLT)	LLHGLT is 61% owned by Hongta Group	N/A	Operating	Tobacco	N/A	N/A

Annex B Acronyms and Abbreviations

BOT	<i>Build-operate-transfer</i>
AIIB	<i>Asian Infrastructure Investment Bank</i>
CEPF	<i>Critical Ecosystem Partnership Fund</i>
CMPI	<i>Committee for Promotion and Management of Investment</i>
CSR	<i>Corporate social responsibility</i>
DPI	<i>Department of Planning and Investment</i>
ECC	<i>Environmental compliance certificate</i>
EIA	<i>Environmental impact assessment</i>
EMDP	<i>Ethnic Minority Development Plan</i>
EMS	<i>Environmental management system</i>
EPC	<i>Engineering procurement and construction</i>
ESIA	<i>Environmental and social impact assessment</i>
ESMMP	<i>Environmental Social Management and Monitoring Plan</i>
GEI	<i>Global Environmental Institute</i>
GMS	<i>Greater Mekong Sub-region</i>
LDC	<i>Least developed country</i>
MEM	<i>Ministry of Energy and Mines</i>
MIC	<i>Ministry of Industry and Commerce</i>
MOF	<i>Ministry of Finance</i>
MONRE	<i>Ministry of Natural Resources and Environment</i>
MPI	<i>Ministry of Planning and Investment</i>
OFDI	<i>Outward foreign direct investment</i>
SME	<i>Small and medium enterprise</i>
UNCTAD	<i>United Nations Conference on Trade and Development</i>
WCS	<i>Wildlife Conservation Society</i>
WTO	<i>World Trade Organization</i>

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