ISEAS YUSOF ISHAK INSTITUTE

ISSUE: 2021 No. 44

ISSN 2335-6677

PERSPECTIVE

RESEARCHERS AT ISEAS – YUSOF ISHAK INSTITUTE ANALYSE CURRENT EVENTS

Singapore | 15 April 2021

Artisanal, Small-scale and Large-scale Mining in Lao PDR

*Oliver Tappe**



A Chinese tin mining concession at Ban Boneng, Lao PDR. Since colonial times, the country has earned considerable renown as a resource rich frontier awaiting extraction and development. Photo: Oliver Tappe.

* *Oliver Tappe is Associate Fellow with the Regional Social and Cultural Studies Programme at the ISEAS – Yusof Ishak Institute. He is also Senior Researcher at the Institute of Anthropology, University of Heidelberg (Germany).*

ISSUE: 2021 No. 44
ISSN 2335-6677

EXECUTIVE SUMMARY

- Despite eight years of gradual decline due to low global commodity prices, the mining sector in Lao PDR still constitutes a key source of state revenue and an important destination for foreign direct investment, especially from China, Vietnam and Thailand.

- Economic development through industrial mining has not translated into employment opportunities for local communities. Rather, the Lao mining sector is marked by a parallel structure of industrial (medium to large scale) mining operations and (informal) artisanal and small-scale mining (ASM).

- ASM miners often operate in a legal grey zone since attempts at legislative formalisation often remain vague and do not address local peculiarities. ASM communities thus suffer from the sector's high social and environmental costs.

- Since the Law on Minerals (2017) was amended, Lao legal frameworks to address administrative and environmental challenges appear more. However, law enforcement still remains weak due to lack of capacity and communication between different ministries at various administrative levels (national, provincial, district).

- The structural transition of the mining sector (in particular, the decline of large-scale copper mining) and the impact of Covid-19 during the lockdown resulted in a decline in mineral production in 2020.

INTRODUCTION

Attracting foreign direct investment (FDI) into its resource sectors has been integral to the Lao government's goal to leave the ranks of "Least Developed Countries" (Menon and Warr 2013). Having sustained average growth at more than 6% until the pandemic kicked in – with foreign grants and loans accounting for more than 20% of GDP – its socioeconomic development has been largely based on the extraction and export of the country's rich natural resources. The state generates revenue through the export of hydropower, minerals, timber, and cash crops such as rubber and bananas. The mining sector, for instance, constitutes an estimated 20% of merchandise exports (World Bank 2020: 17). However, the social and environmental costs of resource extraction constitute a key challenge to sustainable economic growth.

This is particularly true for the Lao mining sector. As elsewhere in the world, extractive practices shape physical and social landscapes, altering local economies and human-environment relations. In Laos, the important large-scale mining (LSM) areas are located in upland regions inhabited by peoples whose occupations are traditionally based on agriculture and forest products – livelihoods that are particularly vulnerable to the environmental impact of mining. Artisanal and small-scale mining (ASM), while providing local income opportunities, sometimes contribute to land degradation and pollution, which in turn negatively affect these communities' livelihoods (farming, fishing and livestock).

Resource governance is thus a major concern for Lao state authorities. However, lack of human and financial capacities, as well as institutional disconnect and internal struggles, hamper effective control of extractive industries, especially in Laos' rapidly changing mining sector. This article gives an overview of Lao mining and discusses the social and environmental impacts of both ASM and LSM activities, with a particular focus on legal issues and local livelihood challenges.

THE LAO MINING SECTOR

Since colonial times, Laos has earned considerable renown as a resource rich frontier awaiting extraction and development. Gold reserves, in particular, attracted the attention of generations of entrepreneurs. In the 1990s, the World Bank identified mining as a key sector for socioeconomic development and revenue generation. Since then, the mining sector has attracted a large share of FDI – especially from the regional powerhouses of China, Thailand and Vietnam. The Lao Ministry of Energy and Mines estimates more than 150 mineral reserves in the country, including gold, copper, tin, iron, bauxite, lignite and potash.

As in the case of the notorious hydropower dams mushrooming throughout the country (see Shoemaker and Robichaud 2019), mining mostly happens in the culturally diverse upland areas that constitute 80% of Lao territory. The uplands of Laos appear as resource frontier (Barney 2009; Lu and Schönweger 2019) to be developed and exploited. However, extraction can be both transformative and sometimes devastating for local communities. In the mining sector, economic opportunities contrast with considerable social and environmental costs (discussed in more detail below).

The Lao mining sector used to be dominated by the 'big two' gold and copper mining areas: The Phu Bia mine in Xaysomboun province and the Xepon mine in Savannakhet province. Established by Australian mining companies after the World Bank-influenced economic policy

reforms of the 1990s, the mines were later purchased by Chinese companies. Before the gradual closure of the copper mines during 2020 – as planned even before the pandemic for reasons of rentability – the Phu Bia and Xepon mines generated up to 90% of state revenues earned from mining (Mottet 2013; Barney 2018). A number of smaller mining operations continue to exploring the remaining gold reserves and other rare metals in these areas, taking advantage of existing infrastructures and new technologies.

The economic significance of industrial mining, however, does not always translate into job opportunities for the greater part of local population. This can be partially attributed to the fact that the vast majority of mining concessions are operated by Chinese or Vietnamese investors (Mottet 2013; Earth Systems and BGR 2019). As in the case of Vietnamese-run rubber plantations in Laos (see Baird *et al*. 2019), foreign mining companies prefer a Chinese and/or Vietnamese workforce, especially (but not only) with regard to skilled labour. The reason for this tendency within the Lao labour market is manifold (ibid; Molland 2017; Tappe 2019): For the companies, labour recruitment and control appear more convenient with work migrants from their respective countries.

Local villagers indeed often lack the skills for the well-paid jobs and thus compete with migrants – from China/Vietnam as well as from other Lao provinces – for unskilled jobs. Moreover, local villagers often prefer ASM over direct employment in the mines. In the case of the tin mines in Khammouane – one of the first industries in colonial Laos – local villagers calculate income from ASM against the low wages paid by Chinese and Vietnamese companies (even if according to the minimum wage – 1,200,000 Kip / 133 USD – as required by Lao Labour Law). However, while ASM 'freelancers' might receive a higher income, they are excluded from the little work protection that formal mining labour guarantees (Tappe 2020).

Amidst reports of closure and fragmentation of the two big mines, alongside a growing and uncontrolled ASM sector, the latter shifted into focus and received more political attention. Prior to this, attention was concentrated on the economic perspectives and the social and environmental challenges of LSM. At the moment, we witness a more differentiated view on the mining sector that includes various practices of artisanal and small-scale mining, the different actors involved, and state attempts of control and formalization (see Barney 2018; Moretti and Garret 2018).

ASM practices have a long history in Laos. Early accounts of French explorers noted the panning and digging for alluvial minerals by Lao villagers. Indeed, even today an estimated 15% of the villages in Laos consider artisanal and small-scale mining an important component in their subsistence. In particular, agricultural slack periods are marked by increased ASM activity. And yet there are new dynamics and challenges such as increasing mechanization, heterogeneous practices, transnational dynamics and resulting legal ambiguities (Oulavanh 2019).

THE LAW ON MINERALS AND ITS LIMITATIONS

The revised Law on Minerals considers the diverse social and environmental challenges of mining.[1] The legislative framework appears deliberate and robust, but certain limits to sound law enforcement remain. Most notably, there still exist insufficient monitoring capacities in relevant institutions like the Ministry of Energy and Mines, Ministry of Natural Resources and Environment, and the Ministry of Planning and Investment, along with the lack of

communication between them and the respective national, provincial and district levels (Earth Systems and BGR 2019; Oulavanh 2019).

The coexistence and blurred boundaries between ASM and LSM have also impeded clear legal solutions. In many long-standing mining areas, artisanal and small-scale miners operate next to or within (foreign) LSM concessions. Even if benefitting from income opportunities in this legal grey zone, local communities bear the social and environmental costs of mining (see Lahiri-Dutt 2014; Oulavanh 2019; Tappe 2020). This situation calls for specific sustainable solutions for governance and control.

The inclusion of ASM into the Law on Minerals is certainly an important step towards a more holistic view on mining and its corresponding economic practices and impact on livelihoods. For example, artisanal mining as a (legitimate) business "means mineral extraction activity by using primitive tools, mechanized equipment with fewer than five horse power and no more than ten laborers" while small-scale mining is restricted to "stripping of top soil and overburden (…) where it is not appropriate for industrial mining within an area not to exceed ten hectares".[2] Moreover, any ASM activity is only permitted for Lao citizens/entities.

Such narrow definitions make it difficult to legally reckon with recent trends of mechanization, intensification in ASM, and the rise of (domestic and foreign) small-to-medium-scale mining activities that escape such categorizations. Many mining operations in Laos below the relatively well-monitored LSM level thus navigate in legally ambiguous waters. Increased mechanization, migration and other unintended effects of mining development entail a variegated pattern of ASM in Laos which poses considerable challenges for effective legislation and governance (Barney 2018).

Another problem for resource governance are concessions that were granted before recent legal adjustments which sometimes overlap with village land or legitimate ASM claims. As in the case of agribusiness in Laos (Lu and Schönweger 2019), foreign investors sometimes find their allocated land being smaller than the areas initially granted in contracts with the Lao state. Investors and villagers thus find themselves in awkward situations where they are left alone by Lao authorities to sort out their conflicting claims on the ground. The high number of opportunity-seeking Chinese entrepreneurs – activated by Chinese foreign investment incentives and the 'empty land' discourse of the Government of Laos (ibid.), are likely to entail more of such conflicts.

In the case of the old tin mining area in the Nam Phathaen valley (Khammouane Province), LSM and ASM entertain a complex coexistence. In some cases, ASM miners are tolerated by Chinese and Vietnamese companies under the condition that they sell the ore to them (Earth Systems and BGR 2019; Tappe 2020). As mentioned above, ASM provides a higher income for the villagers than the wage labour from Chinese and Vietnamese mines (besides the de facto exclusion of local Lao from permanent employment). For the companies, the local villagers represent an informal workforce for which they can deny any legal responsibility in case of accidents and other health risks. Moreover, farmland is increasingly degraded as explorations continue without proper enforcement of post-closure rehabilitation, despite it being required under the Law on Minerals.

Even though the Lao government has suspended new concessions, existing concessions are sometimes operated by incompetent mining companies. Regulatory frameworks and

management capacities are still insufficient (Hernando and Yonemura 2020). The fragmentation of the big mining areas will put additional strain on the Lao authorities' already overtaxed capacities to control and monitor mining projects in the country. The question remains on how far local authorities are able or willing to use rules, regulations, and their power to effectively protect local resources and livelihoods from the impact of mining practices.

THE SOCIAL AND ENVIRONMENTAL COSTS OF MINING

Communities living in mining areas in Laos often find themselves caught in a vicious cycle: Extractive industries provide the opportunity of potential wealth that simultaneously undermines local livelihoods dependent on natural resources. In particular, industrial mining activities provide few job opportunities for local populations but have severe environmental impact on land and water resources. Land degradation drives people even more into ASM, ironically contributing to further environmental problems characterised by precarious livelihoods and health risks. Yet, villages in Laos have different experiences with regard to extractivism and the resulting dialectic of opportunity and precarity.

Éric Mottet (2013) has shown how an ethnic Khmu village near the Phu Bia mine became an example of a village that benefited from the nearby mine through income opportunities (sale of agricultural produce to the mine) and the financing of local school and health services. In contrast, a neighbouring Hmong village mainly experienced negative effects such as pollution and degradation of forest resources that are central to their livelihoods. Such experiences add to historical grievances and tensions between the Lao state and Hmong communities in Xaysomboun Province. Violence directed against Chinese mining companies have been reported in recent years.[3]

This question of exclusion and vulnerability, especially for ethnic minority groups, becomes a crucial one for the ASM sector as well. Oulavanh Keovilignavong (2019) gives examples of how income opportunities through ASM are thwarted by the continuous degradation of land, water and forest resources. The effect of such degradation is particularly dramatic for poor households (often resettled ethnic minorities). These impoverished households with little capital are dependent on these increasingly degraded natural resources for their subsistence, yet they benefit less from such mining opportunities. Thus, both economic opportunities and risks through mining activities are unevenly distributed. Oulavanh's emphasis on the convergence of poverty and ethnic minority status points at a general problem in the upland valleys of Laos.

In the Nam Phathaen valley, Lao villagers combine agricultural subsistence with ASM activities, either in abandoned mines (some dating back to French colonial times) or on concession grounds (cf. Lahiri-Dutt 2014; Lahiri-Dutt *et al.* 2014; Tappe 2020). Land degradation has gradually shifted the ratio such that ASM presently comprises 70% of household incomes. Polluted water reserves require the villagers to buy fish and drinking water. Income opportunities are thus challenged by changing patterns of agricultural production and consumption. Women, in particular, carry a huge workload and health risks, as they manage both domestic labour and various ASM activities (such as panning in contaminated rivers).

As Keith Barney (2019: 354) notes, the recent decade has witnessed another environmentally detrimental development: Medium-scale mechanized mining that operates with backhoe excavators, pump dredges and sluices – thus blurring the boundaries between LSM and ASM

as fixed in the Law on Minerals. This emerging field draws in workers, operators and investors from China and Vietnam who negotiate permissions with local authorities, usually without any governmental control or monitoring. Local villagers lease farm land to such mining operators for some easy money but then see their land being irreparably damaged and degraded (ibid.: 357).

The legal ambiguities of medium-scale operations in remote areas have devastating environmental consequences. Given that the monitoring capacities of the respective government agencies depend on mining-related state revenues or even directly from the mines as in the case of the (currently out-phasing) big Phu Bia and Xepon mines, the prospects of resource governance in the mining sector appear bleak. The growing fragmentation and complexity of the mining sector will yield less revenue for the Lao state but increase environmental risks and, thus, severely challenge local livelihoods.

Environmentalists in Laos (and neighbouring Thailand) are also concerned about the Hongsa lignite coal plant and mining project in Xayaboury Province. The project is 80% Thai-owned and its 1878 MW electricity generation will be mainly exported to Thailand. Mining activities and related infrastructure development have affected forest and water resources. A coal-fired power project, the Hongsa plant contributes to climate change and local health risks. If we take a look from the ground, things get more complex and reveal the challenges of resource governance and local participation in contemporary Lao PDR.

CONCLUSION: OPPORTUNITIES AND RISKS FOR MINING IN LAOS

Laos remains a 'frontier of economic opportunity' as the Asian Development Bank once exclaimed (Barney 2009). However, the mining sector has in recent years lost attractiveness to investors due to a global commodity price slump, depleting mineral ores, and incoherent legal regulations (Hernando and Yonemura 2020). Lockdowns during the pandemic have certainly aggravate the situation (World Bank 2020). Local communities still only rarely benefit from job opportunities in mining. Instead, they generate income through leasing land and/or selling agricultural produce to mining companies, or by practicing ASM on tailings or in abandoned mines. ASM activities can be expected to increase during the pandemic due to the general economic downturn and resulting land pressure as many urbans and migrants return to the villages (Cole 2021).

Economic opportunities from mining for local communities come at high social and environmental costs: Land and forest resources are degraded, water reserves polluted. This is due to the ongoing contamination with heavy metals or other destructions from increased mechanization in small- and medium-scale mining practices that often escape proper resource governance. Post-closure mine rehabilitation is also still weak. Covid-19 exacerbates existing vulnerabilities of ASM communities such as health risks, livelihood challenges, and social tensions (for example, provoked by domestic in-migrants or returnees who have lost jobs elsewhere).[4]

That said, reliable mechanisms of resource governance are key to the protection of local livelihoods in regions affected by mining practices on all scales, from artisanal to large-scale mining (cf. Barney 2018; Oulavanh 2019). Even if the Law on Minerals were refined to account for more complex small- and medium-scale mining practices, implementation and enforcement will remain a permanent challenge for the Lao state. More capacities and financial means will

be required to better monitor proper mine operation and rehabilitation. The participation of local communities in the whole process of concession granting and operation must also be guaranteed – with responsible local authorities as a prerequisite.

In many mining areas, the degradation of agricultural and natural resources and the lack of alternative income and job opportunities have drawn an increasing number of local villagers into the ASM sector. Since this work entails health risks and further environmental degradation, increasing effort by Lao authorities is required to provide better farmland rehabilitation for agricultural livelihoods, as well as the upgrading of people's skills to open up alternative job opportunities. As women and children involved in informal mining are particularly vulnerable, more political attention to the precarious livelihoods of ASM communities is the key to mitigate the social impact of mining in Laos.

REFERENCES

Baird, I.G., Noseworthy, W., Tuyen, N.P., Ha, L.T. and Fox, J. (2019), Land grabs and labour: Vietnamese workers on rubber plantations in southern Laos. *Singapore Journal of Tropical Geography*, 40: 50-70. https://doi.org/10.1111/sjtg.12261 **A**

Barney, K. 2009. Laos and the Making of a 'Relational' Resource Frontier. *Geographical Journal* 175/2: 146-59.

Barney, K. 2018. Reassembling informal gold-mining for development and sustainability? Opportunities and limits to formalisation in India, Indonesia and Laos. In: K. Lahiri-Dutt (ed.). *Between the Plough and the Pick: Informal, artisanal and small-scale mining in the contemporary world*, pp. 335-370. Canberra: ANU Press.

Cole, R. 2021. Smiling to fight: Waiting out the pandemic in Laos. *New Mandala*, 10 March 2021. https://www.newmandala.org/smiling-to-fight-waiting-out-the-pandemic-in-laos/

Earth Systems and BGR 2019. *Impacts of Tin Mining in the Hinboun District, Lao PDR*. Vientiane: Ministry of Energy and Mines.

Hernando, P. and Takashi Yonemura 2020. Transforming the Resource Sector in Lao PDR. *AMRO Blog*, 26 August 2020. https://www.amro-asia.org/transforming-the-resource-sector-in-lao-pdr/

Lahiri-Dutt, K. 2014. Extracting Peasants from the Fields: Rushing for a Livelihood? *ARI Working Paper Series,* No. 216. Asia Research Institute, National University of Singapore.

Lahiri-Dutt, K., K. Alexander, and C. Insouvanh. 2014. Informal Mining in Livelihood Diversification: Mineral dependence and rural communities in Lao PDR. *South East Asia Research* 22/1: 103–22.

Lu, J. and O. Schönweger 2019. Great expectations: Chinese investment in Laos and the myth of empty land. *Territory, Politics, Governance* 7/1: 61-78.

Menon, J. and P. Warr. 2013. *The Lao Economy: Capitalizing on Natural Resource Exports.* ADB Economics Working Paper Series No. 330.

<https://www.adb.org/sites/default/files/publication/30138/economics-wp330-lao-economy.pdf>

Molland, S. 2017. Migration and Mobility in Laos. In: V. Bouté and V. Pholsena (eds.), *Changing Lives in Laos – Society, Politics, and Culture in a Post-Socialist State*, pp. 327-349. Singapore: NUS Press.

Moretti, D. and N. Garrett. 2018. Artisanal and small-scale mining governance: The 'emerging issue' of 'unregulated mining' in Lao PDR. In: K. Lahiri-Dutt (ed.). *Between the Plough and the Pick: Informal, artisanal and small-scale mining in the contemporary world*, pp. 311-334. Canberra: ANU Press.

Mottet, É. 2013. Au Laos, la nouvelle aventure minière pourra-t-elle se dérouler sans conflits? *Les Cahiers d'Outre-Mer* 262. <http://journals.openedition.org/com/6862>

Oulavanh Keovilignavong 2019. Mining governance dilemma and impacts: a case of gold mining in Phu-Hae, Lao PDR. *Resources Policy*, 61: 141-150. doi: 10.1016/j.resourpol.2019.02.002

Shoemaker, B. And W. Robichaud (eds.) 2019. *Dead in the Water: Global lessons from the World Bank's model hydropower project in Laos.* Madison: University of Wisconsin Press.

Tappe, O. 2019. Patterns of Precarity: Historical Trajectories of Vietnamese Labour Mobility. *TRaNS: Trans-Regional and -National Studies of Southeast Asia* 7/1: 19-42.

Tappe, O. 2020. *Assessing the Micro-Macro Dimension of Integration/Disintegration Processes: The Case of Tin Mining in Laos*. CRISEA Working Paper on Macro-Micro Dialogue Studies. <http://crisea.eu/wp-content/uploads/2020/12/Del-5.3-Working-Paper-Macro-Micro-Dialogue-Studies.pdf>

World Bank 2020. *Lao Economic Monitor*, June 2020. <http://pubdocs.worldbank.org/en/962271591369090988/Lao-Economic-Monitor-June-2020-final.pdf>

[1] National Assembly of the Lao PDR, Law on Minerals, 20 December 2011. http://extwprlegs1.fao.org/docs/pdf/lao141172.pdf
[2] Ibid.
[3] The Nation, 28 March 2016, Who's killing foreigners in northern Laos? https://www.nationthailand.com/opinion/30282715
[4] https://www.worldbank.org/en/news/feature/2020/07/29/egps-launches-new-emergency-relief-response-for-artisanal-and-small-scale-mining-communities-impacted-by-covid-19

ISEAS Perspective is published electronically by: **ISEAS - Yusof Ishak Institute** 30 Heng Mui Keng Terrace Singapore 119614 Main Tel: (65) 6778 0955 Main Fax: (65) 6778 1735 Get Involved with ISEAS. Please click here: https://www.iseas.edu.sg/support	ISEAS - Yusof Ishak Institute accepts no responsibility for facts presented and views expressed. Responsibility rests exclusively with the individual author or authors. No part of this publication may be reproduced in any form without permission.	Editorial Chairman: Choi Shing Kwok Editorial Advisor: Tan Chin Tiong Managing Editor: Ooi Kee Beng Editors: William Choong, Malcolm Cook, Lee Poh Onn, and Ng Kah Meng Comments are welcome and may be sent to the author(s).

© Copyright is held by the author or authors of each article.