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Artisanal and small-scale mining governance: The ‘emerging issue’ of ‘unregulated mining’ in Lao PDR

Daniele Moretti and Nicholas Garrett

‘Illegality’ and ‘formalisation’ are key topics in the global literature on artisanal and small-scale mining (ASM) (see, for example, Fisher 2008; Spiegel and Veiga 2009; Spiegel 2011; Lahiri-Dutt et al. 2014). A recent body of research argues that, in many developing countries, national governments and donor agencies have deliberately designed and implemented mining regulations and policies with the exclusive interests of large-scale mining (LSM) in mind, thus accepting the parallel outcome of illegality of ASM (see, among others, Baker et al. 2007: 13–14; Spiegel 2011: 189, 201; Spiegel and Hoeung 2011: 2; Hatcher 2012; Holden et al. 2011, cited in Spiegel 2014: 301, 307; Fisher 2008; Hilson 2009; Hilson and McQuilken 2014: 112).¹ Yet, it has been pointed out that

1 The term ‘illegal ASM’ indicates ASM activities that are neither licensed nor compliant with regulations, taxes and other parts of the formal economy. By contrast, ‘informal ASM’ is a broader category that includes situations where ASM activities are ‘unregulated by the institutions of society in a legal and social environment in which similar activities are regulated’ (Castells and Portes 1989: 12). In some cases, this may be because no regulatory frameworks exist. In others, relevant licensing agencies, regulatory agents and taxation officials may be non-existent, unreachable or set unreasonable barriers to compliance, such as indefinite delays to administrative processes or ambiguous procedures that prevent the legal compliance and formalisation of ASM. For example, it may be that authorities do not make available the registration documents ASM operators are legally required to have. Conventionally, formalised ASM is taken as a necessary prerequisite of legitimacy, but this is not always the case. It may be that some ASM operators in a given locality meet all government laws and

broader analyses of the many reasons behind the growth of illegal mining and its more negative impacts are needed to gain a fuller picture, and better guide future policy development and implementation. Among others, this includes attention to the wider ‘complexities’ that characterise specific ASM governance regimes (Spiegel 2011: 202).

This chapter draws on fieldwork by Nicholas Garrett on the operation of the regulatory environment, desktop research and on joint fieldwork by the authors in 2014. The research was carried out as part of a consultancy for a mining company that sought to develop group standards and an engagement strategy for ASM in various countries, including Lao PDR. The authors visited Vientiane and current and former ASM sites and ASM-impacted areas in Vientiane and Xieng Khouang provinces. The visits offered a basis for direct observations supplemented by interviews with 40 informants, including local community leaders, gold traders, local- and national-level government and technical officials, representatives of international donor agencies and staff from two LSM companies. A significant constraining factor in our research is that we were unable to directly interview active gold miners as we normally do in our research work. Health and safety concerns prevented us from entering one site. The seasonal and transient nature of ASM is also a well-known impediment to ASM research (Noetstaller et al. 2004: 16; Eftimie et al. 2012: 32–3, 44), and our fieldwork in Lao PDR coincided with low times in the seasonal pattern of local ASM activities. Some of the areas we visited had already undergone partial rehabilitation, which limited opportunities for direct observations and interactions. The short time we had available in the field further constrained our capacity to directly engage and interview former and active ASM actors. This is especially significant in a context like Lao PDR, where miners are often reluctant to identify themselves as such, to take part in research and to disclose information on their activities due to illegality and tax issues (Baker et al. 2007: 6–8; see also Noetstaller et al. 2004: 16; Eftimie et al. 2012: 32–3). This was compounded by our association with an LSM company when undertaking field research on ASM in October 2014. We draw more on the viewpoints of government agencies, LSM operators and ASM-impacted communities than those of still-active miners, but we have ensured that our global experience

regulations, for example, but that these exclude certain standards deemed critical by the international community. Conversely, in circumstances where miners are operating ‘informally’ because they cannot reasonably comply with government regulations, or there is no applicable legal framework, informal ASM operators are not necessarily illegitimate.

in interviewing ASM operators has also shaped our analysis. There is comparatively little up-to-date research on ASM governance in Lao PDR, and we hope to fill this gap with an overview of evolving challenges. This chapter also reports recent developments in ASM governance, suggesting how these could be made more effective in future.

The next section offers an overview of the history and present context of ASM in Lao PDR, including its key subsectors and their technical and organisational characteristics. Central to this is a discussion of some key (nationwide) ‘push’ and ‘pull’ factors that have driven the sector’s expansion and mechanisation over the past 10 years. Following that, we consider several ‘complexities’ that so far have limited the effectiveness of the country’s ASM governance system, inhibiting attempts to promote better practices and ensure accountability. Recent expansion and increased mechanisation of artisanal mining have led to greater concerns over negative health and safety, environmental and social impacts. These concerns are behind recent media reports and perceptions by the government that ‘unregulated’ or ‘illegal’ ASM is an ‘emerging issue’ that needs to be tackled through new regulations (Vaenkeo 2014a). They have also largely motivated recent interventions to improve sectoral policies and management systems. The concluding section of the chapter reviews these interventions, which have ranged from training and awareness programs among miners and local communities, to capacity building in relevant government agencies and current efforts to draft ASM regulations. While each of these individual interventions has achieved some limited results in its own way, ASM governance to date has remained largely ‘ad hoc and ineffective’ (Baker et al. 2007: 18; see also BGR 2014). Moving forwards, it is argued that the Government of Lao PDR (GoL) should consider adopting a more ‘strategic’ approach to ASM. Such an approach would draw on international good practice and take into account current capacities to implement. It would adopt an integrated suite of interventions tailored to the particular characteristics of different ASM subsectors that is cognisant of specific national development priorities. While designing and implementing such a strategy is fraught with difficulties, several guides and toolkits are now available to help governments seeking to better manage ASM activities (such as Paget et al. 2015; see also United Nations Environment Programme 2015; Eftimie et al. 2012; Hinton and Hollestelle 2012). To be effective, such a strategy ought to build on up-to-date and country-specific sectoral research that also considers ASM’s relationship to other economic sectors and the wider regional economy,

national industry strategies and rural development plans (Hilson and McQuilken 2014; Paget et al. 2015), as well as a review of existing capacity gaps within the government. Further, it must be effectively implemented by well-resourced departments with adequate capacity, working in coordination with one another (Paget et al. 2015). For this to be achieved, the strategy would have to be developed and implemented with the support of international donors and in iterative consultation with relevant sectoral stakeholders (including artisanal miners, local communities, civil society, government, LSM and other supply chain actors). Global experience shows that such cooperation is a key factor of success in promoting better practices and achieving a better balance between positive and negative impacts within the sector (Paget et al. 2015; see also Aubynn 2009; Spiegel and Hoeng 2011; Spiegel 2014).

ASM in Lao PDR: History, present context and main drivers of expansion

ASM is a still-debated term used to describe many different forms of extractive activities, from artisanal and unlicensed to more mechanised and licensed medium-scale operations (Lahiri-Dutt et al. 2014: 7). In Lao PDR, ASM has a long history that predates French colonisation. Presently, it involves a long-standing mixture of local kin groups, private and state-owned domestic enterprises, and partnerships of national and regional companies (Larsen 2010: 6–7). In more recent times, however, it has come to include a range of independent foreign operators, sometimes operating in small groups and sometimes in more organised, commercial forms. It has also been increasingly shaped by inputs of financing, technology and know-how from neighbouring countries. Lao PDR ASM is therefore not a sheltered national sector but one that is increasingly integrated with the wider regional artisanal and small-scale mining and economy.

Based on the literature and our own observations, artisanal and small-scale mining in the Lao PDR can be divided into two main categories. The first involves small-scale mining undertaken without modernised production systems. These operations extract a mix of mineral and non-mineral resources, including gold, and comprise mines run by the government and privately owned mines with investment from local and/or foreign

investors from countries including China, Thailand, Vietnam and Korea (Shingu 2006: 1, 7; Larsen 2010: 6–7; International Council on Mining and Metals (ICMM) 2011).

The second category includes manual and partly mechanised artisanal mining, primarily of gold, though other precious metals and stones, base metals like tin and construction materials are also mined and quarried (Larsen 2010: 6–7; ICMM 2011: 17; Latsaphao 2014; Vaenkeo 2014a, 2014b). Our informants referred to this ASM type as ‘handicraft mining’ (*kun kut hatagam*) or, in the case of partly mechanised artisanal mining, as ‘semi-handicraft mining’ (*kut kun kung hatagam*).

There are no precise estimates, but the large numbers of part-time ASM miners are thought to be equivalent to between 15,000 and 50,000 full-time miners, with 35,000–46,000 being the figure used in the most recent sectoral projections (Larsen 2010: 7, 16, 20, 23, 30; ICMM 2011: 17). Non-mechanised artisanal mining is known to take place in at least 11 out of 17 provinces, and is estimated to involve around 11 per cent of all ASM workers, while partly mechanised alluvial and hard-rock ASM has been reported in 9 out of 17 provinces, and involves around 89 per cent of the ASM workforce. However, both geographical distribution and participation levels are systematically underestimated. This is due to various reasons, including the fact that not all provinces have been covered in recent surveys, the itinerant and subsistence nature of ASM, lack of monitoring capacity by GoL and the miners’ reluctance to reveal themselves and talk about their activities for reasons considered above (Baker et al. 2007: 4–7).

While mining laws allow for and require permits for it (detailed in the next section), non-mechanised alluvial and hard-rock mining is often carried out informally by whole families, including women (who make up between 50 per cent and 80 per cent of the country’s ASM operators) and children. At times, individuals or groups of unrelated miners also participate in this type of activity, especially in the case of non-mechanised hard-rock mining (Earth Systems Lao (ESL) 2003: i, 3; Shingu 2006: 8; Baker et al. 2007: 2; Larsen 2010: 7; ICMM 2011: 11, 17; Eftimie et al. 2012: 6–7, 88, 93; Lahiri-Dutt et al. 2014: 16–18). For the most part, these miners are not migrants but locals who mine nearby areas of alluvial sediments revealed by lower water levels in the dry season (between January and June). Alternatively, they mine hard-rock

deposits uncovered by past and present larger mining companies or small outside operators with greater mining know-how and financing. This type of ASM is undertaken mainly during downtimes in the agricultural work cycle, as a seasonal subsistence activity to supplement rice and vegetables cultivation, rearing of livestock, fishing and gathering from forests, which remain the primary sources of livelihood, alongside other cash-earning activities. Depending on location, such cash-earning activities can include limited cash cropping, sale of livestock, tourism and textile and other industries (ESL 2003; Shingu 2006: 8–9; Baker et al. 2007: 2, 5). Increasingly, however, this type of ASM is also undertaken by small groups of outside operators or more organised commercial ventures from other parts of the Lao PDR and neighbouring countries. Most alluvial artisanal and small-scale gold-mining (ASGM) operators in Lao PDR mine by hand, using simple tools like bowls, buckets, chisels, pickaxes, hoes, floats and water pumps to move water for sluicing and open sluice boards with sack linings to pan and sieve the ore (ESL 2003: i, 19–21; Shingu 2006: 8; Baker et al. 2007: 2; Lahiri-Dutt et al. 2014: 16–18). In some areas, such as Borikhamxay Province, men reportedly dig deep vertical shafts and mine gold gravel to be panned in the river (Shingu 2006: 9). In Vientiane Province, Xieng Khouang Province and many other parts of the Lao PDR, operators also increasingly mine primary deposits, mainly using simple tools adapted from agriculture and construction, such as hoes, shovels and bowls to dig pits, and rudimentary, unsupported tunnels to extract and wash ores, which are then processed by the miners themselves or by larger traders using mechanised crushing, sluices, copper plates, soaking tanks and chemicals like mercury and cyanide (Baker et al. 2007: 5; Latsaphao 2014; Vaenkeo 2014a, 2014b).

Mechanised and semi-mechanised alluvial and hard-rock operations require official permits and close reporting and supervision. Yet, they too are often undertaken without formal licensing or regulation and with little monitoring and environmental or health and safety awareness. In some cases, such unlicensed or unregulated operations are directly run by foreign companies or small groups of miners from abroad. More frequently, they tend to be run by local operators (and, until relatively recently, even by the army), but often with the assistance of foreign investors from neighbouring countries, who may provide them with financing, know-how or technological inputs, as well as commercialising the minerals that they produce (Baker et al. 2007: 5, 9; Larsen 2010: 6–7; Lahiri-Dutt et al. 2014: 14). Again, here too increasing numbers of small

or more organised groups of foreign operators have also directly entered this sector in more recent times, primarily from neighbouring countries like Vietnam and China. Processing of ores is minimal and technologies simple, often including only barges fitted with excavators, conveyors and sluices or old hand drills, compressors and tracks, but often with more sophisticated adits, pits and tunnels for hard-rock mining. Where gold flakes are coarse, drying and blowing by mouth are commonly used to separate them. Where particles are fine, however, or in the case of hard-rock mining, mercury amalgamation and, more recently, cyanide have also been increasingly employed (Larsen 2010: 7; Latsaphao 2014; Vaenkeo 2014a). The number of employees found in these more mechanised artisanal and small-scale operations range from just 10 to 150 each, with the majority having around 20 workers. Many of these workers are from nearby villages but, by contrast with mostly alluvial, non-mechanised operations, a greater number of migrants often participate in this type of venture, which therefore tends to be less seasonal, more enduring and not as strictly subsistence related (Shingu 2006: 7; Baker et al. 2007: 5).

If ASM has been a widespread activity in rural communities for some time, a combination of familiar push-and-pull factors contributed to the considerable expansion of participation in the sector over the past two decades, which reportedly reached a peak in around 2008–09, as well as its increased mechanisation (Shingu 2006; Baker et al. 2007: 2, 5, 8, 10–13; Larsen 2010: 7; ICMM 2011: 5; Eftimie et al. 2012: 90; Lahiri-Dutt et al. 2014: 8–9; Latsaphao 2014; Vaenkeo 2014a, 2014b).² As is the case globally (ICMM 2010: 5; Eftimie et al. 2012: 3), ASM participation in Lao PDR tends to be linked to poverty and lack of alternatives that could provide better income opportunities. The sector has thus emerged as an important source of cash and livelihood diversification, with much informal alluvial mining practised by farmers to supplement other livelihood strategies (ESL 2003: 19; Shingu 2006: 7; Insouvanh 2015).³ To appreciate the financial attractiveness of ASM as a complementary

2 It is important to note, however, that the sector (especially in its fully or partly mechanised component) has reportedly shrunk somewhat over the past two years, partly as a result of a 2012 nationwide GoL moratorium on all new ASM ventures, and inspections and closures of existing mines with poor environmental records and likely also partly because of decreased gold prices since 2012–13.

3 This factor alone may be somewhat weaker in explaining the rise of more mechanised ventures and operations that, as discussed above, tend to be more commercial, meaning not strictly subsistence-related, more often financed by outside operators and more likely to involve migrant labour (Baker et al. 2007: 5).

livelihood strategy, it is sufficient to note that Lao PDR alluvial panners can reportedly extract up to 31 grams of gold per annum, which could be equivalent to an additional annual income of over US\$641.⁴ Moreover, mechanised and semi-mechanised operations, especially of primary deposits, are likely to yield even greater returns than this (Larsen 2010: 7). For example, our informants suggested that manual hard-rock gold miners in Xieng Khouang Province could reportedly earn up to between 6 and 40 per cent of the average local annual income in a single day of mining during the peak phase of two minor, highly localised rushes.

Over the past two decades, institutions like the Asian Development Bank and the World Bank have also encouraged GoL to adopt structural reforms and promote foreign investment as part of a transition towards a liberal market economy meant to promote national and local economic development (Boungnaphalom 2010; Larsen 2010: 4, 13–14; ICMM 2011: 17; Hatcher 2012: 5–8; Lahiri-Dutt et al. 2014: 2–3). While it has brought benefits and opportunities to Lao PDR and its people, this process also engendered new forms of poverty and inequality linked to changes in demographics, the economy, occupational opportunities and land use, and thus also to opportunities for livelihood diversification towards a more cash-based economy and sources of cash other than agriculture (Rigg 2005; ICMM 2011; Lahiri-Dutt et al. 2014: 3–5). Therefore, the recent rise in ASM activities across the country should be understood, not only through the lens of poverty and lack of alternative opportunities per se, but also in the context of the effects of recent structural reforms (Spiegel 2009: 39, 2011: 192; Hilson and McQuilken 2014: 111–13).

4 This is based on recent estimates that local miners receive no more than half of the international price of gold when they sell to local traders at or near the mines (ICMM 2011: 17), and on the average annual gold price of US\$1,282 in 2014, when our research was conducted (as obtained through 'Historical Charts and Data for Gold, 2014' at www.kitco.com). Not much is known about the downstream supply chain of Lao ASGM operators, though a reported pattern involves the miners selling gold to itinerant gold buyers who visit their villages every week during the mining season. These buyers then further process it for sale in the regional markets or sell it directly to jewellers (ESL 2003: ii, 22; Insouvanh 2015). This pattern was confirmed by our gold trading and jewellery industry informants, who estimated that around 15–20 per cent of all gold traded in Vientiane may originate from ASM, a figure that was said to have declined in the last couple of years, as a result of the 2012 government moratorium on alluvial ASGM. According to them, gold is traded through intermediaries, often in transactions involving only small quantities of up to 15 grams at a time. The destinations vary, and include regional and Vientiane-based markets and jewellers, with some of it also thought to be smuggled to neighbouring countries, like China and Thailand. Although some of the ASM gold is then exported in the form of jewellery, it is also commonly purchased for savings and marriage-related payments.

But if participation in ASM offers an alternative source of livelihood in the face of wider structural changes, it also causes significant environmental degradation, particularly in the case of rush situations and more mechanised ASM or medium-scale mining activities. This can, in turn, engender further vulnerability, thus promoting further participation in ASM to make up for ASM's own impacts on agricultural livelihoods (Insouvanh 2015; Lahiri-Dutt et al. 2014: 3, 9–15, 24–6). In line with these facts, our research indicated that in Vientiane and Xieng Khouang provinces, participation in ASM (and especially manual and semi-mechanised artisanal mining) tended to be linked to situations where local communities were experiencing livelihood stresses due to a combination of population growth (such as through immigration), land shortages, increased food prices, limited employment and alternative cash earning opportunities, and liquidity issues in between times when most crops become available for consumption and sale.

Another factor at play in the rise of ASM may relate to issues of ownership, state legitimacy and political agency. While Lao PDR mining laws place minerals under centralised and unified management by the state (Article 3, Mining Law 1997; Article 4, Mining Law 2012), local actors can hold alternative understandings of mineral ownership. For instance, in Xieng Khouang Province, we interviewed local community members about a recent gold rush. The informants were not themselves miners, but they belonged to communities located near the ASM sites. Contrary to national laws, they believed that minerals belonged to, and could therefore be freely worked by, all Lao PDR citizens (and not just local residents). It has further been argued that many Lao PDR villagers see the state as a distant abstraction of which they are not fully part and that they do not necessarily feel wholly included in the benefits generated by recent economic changes (Mansfield 2000: 2; Lahiri-Dutt et al. 2014: 3). In this light, it has been suggested that engaging in illegal ASM and reserving the right to sell extracted resources to illegal buyers paying the highest price is not just down to an economic logic, but is also a means for some villagers to exert political agency by asserting control over their livelihoods, and over land, in a rapidly changing context driven by distant outside forces (Lahiri-Dutt et al. 2014: 4, 23–6).

In addition to these drivers, there are a number of pull factors at play in the expansion of ASM in Lao PDR. Like any other business, ASM can be undertaken only where the costs of extracting a resource are lower than the income made by selling it (ICMM 2010: 9). Participation levels will

also be influenced by how favourably the rewards obtained through ASM compare with those afforded by other economic opportunities available to ASM operators (Spiegel 2014: 301, 307); by the degree to which ASM's profits are necessary to mitigate the risks and/or the cessation of other activities; and by the extent to which ASM can be undertaken alongside alternative forms of livelihood. It is therefore unsurprising that in Lao PDR, even when undertaken as a means of livelihood diversification, participation in ASM is always guided by a combination of lack of alternative opportunities *and* the 'favourableness' of mining itself (ESL 2003: 19–20; Baker et al. 2007: 4). As such, a commonly reported explanation for the recent growth in ASM activities is the rise of mineral prices over recent years (Lahiri-Dutt et al. 2014: 11; cf. Spiegel 2014: 301, 307). This, however, can be contrasted with the 2012–13 gold price crash and the fact that the gold price has since remained low have (along with the aforementioned 2012 moratorium) reportedly led to an overall reduction of activity.

In many parts of the country, including Vientiane and Xieng Khouang provinces, a complementary and partly related push factor has been the increased availability of financing, technology, inputs and outside mining know-how from nearby countries like China, Vietnam and Thailand in recent times (Baker et al. 2007: 4; ICMM 2011: 5). This has facilitated the expansion of ASM, particularly in its more mechanised and 'rush' forms. In many cases, this can take the form of outsiders (mainly from neighbouring countries but also from other parts of Lao PDR) coming into an area to mine, with locals initially supplying services and mining labour (Spiegel 2014: 305; Insouvanh 2015). In so doing, locals acquire skills that they later use to mine independently, with outsiders still transporting, processing and trading the mined ores. In some areas at least, the gold buyers themselves also supply miners with mercury and other chemicals (ESL 2003: 22). In the Lao PDR context, the start of more mechanised small-scale, medium-scale and large-scale mining operations (Baker et al. 2007: 6–7), as well as other forms of large-scale resource development, like hydropower, have also sometimes encouraged greater involvement in manual and mechanised ASM by both locals and outsiders. This is possibly linked to a combination of changes in the local socio-economic and environmental contexts (for example, greater monetisation of the economy, rising prices, land impacts, easier and cheaper exploitation of local deposits, etc.). Greater participation of this kind also increases the 'favourableness' of mining; for instance, through

the transmission of know-how, the creation of infrastructure that reduces access and transportation costs, or the unearthing of deposits or disposal of tailings that can be more easily and rewardingly worked through ASM techniques. In certain cases, the appearance of more mechanised mining activities in the given areas can even encourage locals to develop greater levels of organisation, including at the village level. It can motivate these units to shift away from alluvial mining and towards semi-mechanised mining of primary deposits, which typically yields greater returns, but also requires more local coordination to raise funds and/or outside investment or seed money (ibid.: 8).

Current ASM governance ‘complexities’ and the ‘emerging issue’ of ‘unregulated mining’ in Lao PDR

The aforementioned expansion of artisanal and small-scale mining has been mirrored by growing preoccupation in media reports and within the government at all levels about the increase of ‘unregulated or illegal ASM’ activities and their negative impacts. These concerns are exemplified by the issuing of two nationwide moratoria on new ASGM activities and consequent rounds of inspections in 2005 (Baker et al. 2007) and 2012, as well as ad hoc provincial and district-level moratoria on specific forms of ASM at various times. Most recently, they led to the National Assembly’s characterisation of ‘unregulated or illegal ASM’ as ‘an emerging issue’ to be addressed by GoL through improved regulation (Vaenkeo 2014a).

The current Lao PDR legislative framework does (primarily through the amended Mineral Law 2012) provide for the licensing of ASM, but it also poses several restrictions and requirements to operate legally (cf. Spiegel 2009: 42, 2014: 301–3; Spiegel and Hoeung 2011: 3). For example, ASM operators are legal only when:

- They are Lao PDR citizens, resident in the local community.
- They acquire appropriate mining licences and mine within the boundaries of the licence or permit area, in accordance with the techniques and modes of organisation and management appropriate to that kind of licence (for example, no machines or machines under five horsepower and only up to 10 labourers).

- They mine only ‘alluvial gold, alluvial tin and tailing’—where alluvial gold is defined as ‘mechanical weathered mineral, which have [sic] flown and accumulated in some location naturally’—whose exploitation ‘is not appropriate for industrial mining’ (revised Mining Law 2012).
- They pay all required taxes.⁵
- And/or they are Lao PDR entities with the required permits who follow the more stringent requirements for ‘small-scale mining’ and ‘business artisanal mining’, such as reporting regularly to the relevant energy and mines sector authorities and following strict laws on health and safety, environmental and social protection and sustainable development, including minimising and compensating for environmental and social impacts, and maintaining roads and other infrastructure.

Equally, small-scale processors and gold traders only process and trade legally when:

- They acquire the appropriate licences.
- They do not deal in misappropriated or otherwise illegally mined gold.
- They pay all required taxes.

In practice, this means that many, if not most, ASM operators and gold transporters, processors and traders are *de facto* working illegally because, among others, they do not hold the required permits and pay required taxes; some are not Lao PDR citizens (or Lao PDR citizens who are local residents); they mine primary deposits rather than alluvial deposits, as defined by the law; and they lack environmental planning and rehabilitation. Moreover, GoL issued two moratoria on all new ASGM activities in 2005 and 2012, the second of which was still effective at the time of fieldwork, with related inspections of existing operations and their closure in case of noncompliance.

Under the current governance framework, inspections and closure processes of non-compliant operations are undertaken by *ad hoc* bodies involving a multitude of agencies, from local representatives of the departments of mines, planning, investment, natural resources and environment, finance, and public security to local administrative authority representatives. Similarly, ASM permits are administered at the local rather than central level, with business ASM permits being the

5 See also the ‘Draft Presidential Decree of Lao PDR President on the Tax Rate of Natural Resources/Royalty’.

competency of provincial-level authorities under the technical supervision of provincial-level offices of the Department of Mines (DoM), whereas those for non-business (or ‘handicraft’) artisanal mining are issued by district-level administrative authorities. While this governance structure clearly involves a degree of decentralisation, this is not necessarily a significant devolution of power inasmuch as a process intended to build decentralised capacity so that the central GoL has a better view of the activities, issues and challenges on the ground across the country. Nevertheless, it means that Lao PDR law requires that different agencies and administrative authorities at different levels should be involved in ASM-related issues and also, crucially, that each of them has specific powers and competencies. In turn, this ‘complexity’ (Spiegel 2011: 191, 193) feeds a potential for local variation in ASM strategies and their implementation. For example, some provincial and district governments have taken a much more favourable attitude to ASM, even asking the central government for permission to resume releasing permits after national moratoria to regain lost revenue from this source (Baker et al. 2007: 5). By contrast, others have shown more opposition to ASM, not only due to concerns about environmental, health and safety and social issues, but also because they regarded it as a threat to key local industries, like agriculture or tourism. In some cases, this may have resulted in misalignments of interests vis-à-vis ASM between local (provincial and district) and central GoL authorities because the former derive a more direct potential benefit from fees for issuing ASM permits (*ibid.*). It can also limit the state’s capacity to ensure accountability in the sector and open spaces where illegal activities can come to thrive. For example, even after the 2012 moratorium, local authorities continued to issue permits for ASM operations extracting construction materials, including gravel from riverbeds. According to anecdotal evidence, many of these operations have then proceeded to illegally mine alluvial gold alongside gravel, at times using chemicals in such a way that caused environmental pollution and health risks for nearby communities and raised public concern (Southivongnorath 2014; Vaenkeo 2014a, 2014b). These challenges are compounded by other widely acknowledged regulatory ‘complexities’ (Spiegel 2011) that leave Lao PDR with what has been called an ‘ad hoc and ineffective system of [ASM] governance’ (Baker et al. 2007: 18). As a result, the implementation of national laws and the regulatory framework on ASM has long been, and continues to be, ‘weak or wholly lacking’ across the country (*ibid.*; see also BGR 2014). Among others, these issues include a lack of communication between different authorities (and levels of government) involved in mining activities. There are general

capacity issues at all levels in DoM, Department of Geology (DoG) and other agencies charged with regulating ASM (such as limited human and financial resources and lack of technical expertise in ministries and departments), which severely limits capacity to both assist and regulate the sector. This is compounded by a lack of detailed ASM regulations accompanying mining legislation (Baker et al. 2007; Insouvanh 2015; see also Spiegel 2009: 42; 2011: 202; Spiegel and Veiga 2009).

Others have argued that GoL has been reluctant to intervene in artisanal and small-scale mining because it views ASM as an activity that requires significant (and largely lacking) resources to be properly managed, with potential risks (such as creating resentment among miners), and for comparatively little benefit in return, particularly from the standpoint of central authorities that gain fewer benefits from fees and taxation (Baker et al. 2007: 4, 8–9, 19; Spiegel 2011: 193). By and large, governments at all levels have tended to accept the presence of micro-level informal ASM activities, especially in the case of subsistence-oriented artisanal mining by local actors. Indeed, this mining has been allowed in spite of the nationwide and local moratoria, as long as it did not cause significant social and environmental issues (see also Baker et al. 2007: 7).

In more recent years, however, the central and local governments' 'tolerance level' of ASM has been more frequently and severely tested. Recent expansion and increased mechanisation of artisanal and small-scale mining mean that significant numbers of new operators have entered the sector, often with limited capacity and incentives to respect good practices. This has resulted in increasingly significant negative impacts in many parts of the country, including land degradation and water pollution that affected agricultural livelihoods and the unsafe use of chemicals like mercury and cyanide for recovery and processing within or near inhabited areas and vulnerable environments, with consequent negative effects like exposure to fumes, dispersal in the environment, bioaccumulation in the food chain and loss of wildlife, fisheries and even livestock (ESL 2003: i–ii, 20–1, 24; Shingu 2006: 7–9; Baker et al. 2007: 2, 4–5, 8–13; Larsen 2010: 7; ICMM 2011: 5; Eftimie et al. 2012: 90; Lahiri-Dutt et al. 2014: 8–9; Latsaphao 2014; Vaenkeo 2014a, 2014b). Many ASM operations do not properly plan for, map and reinforce tunnelling or ensure that they are properly ventilated; cause land erosions and collapse; make little or no use of any personal safety equipment; and make inappropriate and dangerous use of chemicals (ESL 2003: 24). As a result, ASM across the country has also been associated with health and safety risks for the miners themselves

and for non-miners living in the proximity of mining and processing areas, including fatalities (for example, 20 known fatalities in one of the districts we visited during a minor, highly localised gold rush). In turn, these environmental, health and safety issues have led to concern among affected local communities and, at times, conflict between operators and surrounding communities—a pattern that is arguably not reported as often as ASM–LSM conflicts but that is found in many contexts globally (see, for example, Hinton and Hollestelle 2012: 69; Eslava 2014; Insouvanh 2015; Soemarwoto 2015). It is largely as a result of these steadily increasing impacts, coupled with the aforementioned ‘complexities’ and limitations of the current ASM governance system, that ASM has come to be spoken of more and more in terms of ‘unregulated or illegal mining’ and as an ‘emerging issue’ in need of proper regulation and management.⁶

Looking ahead: Towards a more strategic approach to ASM

Over the past few years, GoL has taken some steps with an array of partners to improve existing knowledge and management of artisanal and small-scale mining. Overall, these have not constituted elements of an integrated strategy, but isolated interventions with so far limited impacts.

Between 2003 and 2007, the Global Mercury Project (GMP) worked with the government and other stakeholder groups (for example, local communities, non-government organisations and United Nations agencies) to:

- Build ASM-related capacity within the then DoG and DoM and local government agencies.
- Introduce technology and training to miners to reduce mercury use and loss to the environment.
- Develop new legislation specific to ASM activities, such as a new national mercury code.
- Produce educational materials in Lao.

⁶ Our interviews suggest that, at least among some central-level authorities, there is also a growing recognition that many of the resources found in Lao PDR are of a scale unsuitable for large mining companies, which therefore will become commercially viable only if exploited by properly regulated artisanal and small-scale mining.

- Collect data on the extent and magnitude of small-scale and intermediate gold-mining activities in Lao PDR and the Mekong Basin (ESL 2003; Shingu 2006: 7–9; Baker et al. 2007: 2, 7, 12–19; Spiegel and Hoeng 2011: 8).

More recently, the World Bank undertook a survey of (primarily) river-based tin ASM, which yielded fresh data on artisanal and small-scale mining, particularly in relation to its gender profile and gender-related sustainability issues (Eftimie et al. 2012: 87).

The private sector has also contributed to this process, albeit in a limited way. For example, LSM companies have provided some assistance to build capacity within the DoM. They have also conducted awareness training for ASM-affected communities and assisted government agencies in safely disposing of dangerous chemicals and rehabilitating areas impacted by ASM activities. However, this has been limited to their specific project areas within the country.

In the past couple of years, the DoG, DoM and other GoL authorities collaborated with a number of international partners like the World Bank, BGR, the Finnish and Thai governments, and Japan Oil, Gas and Metals National Corporation to develop new regulatory frameworks and further build in-house capacity to more effectively govern the mining sector (see, for instance, Korkiakoski et al. 2012; BGR 2014; Insouvanh 2015). As part of this, and following pressure from the National Assembly due to the aforementioned growing concerns about the negative impacts of some unregulated ASM activities, GoL is drafting new ASM regulations with technical assistance from international donors. At the time of fieldwork, the regulations were still in draft form and undergoing consultation. Many of the existing requirements and restrictions appear to be carried over in the draft stage of the regulations. However, potential departures from previous legislation were being provisionally considered for inclusion in the new regulations, which may eventually come to embody a potential shift towards greater levels of formalisation of ASM, from alluvial and hard-rock mining to individual and collective modes of organisation. These included allowing for the exploitation of both placer and hard-rock deposits by artisanal mining permit holders (though only under specific conditions, and where the latter can be extracted and processed wholly without the use of machines); enabling artisanal miners to register as ‘collectives’; and the eventual creation of a fund that will provide training to ASM operators on mine safety, health and environmental

protection and rehabilitation. At such an early stage, it is unclear whether the regulations will become law any time soon, if they will be redrafted prior to that following ongoing consultation, and if they will be effectively implemented. Alongside the other interventions outlined above, however, they may eventually constitute a significant step towards reforming ASM governance in Lao PDR and tackling some of the ‘complexities’ that currently limit its effectiveness.

These individual interventions have all achieved limited results in their own right. Overall, however, the existing ASM regulatory framework continues to be implemented in a largely ad hoc and reactive fashion, remaining on the whole permissive⁷ while lacking the capacity to provide effective assistance, steadily improve practices and enforce standards. In its efforts to tackle what is increasingly perceived to be ‘the emerging issue’ of the negative impacts of ‘illegal and unregulated mining’ across the country, GoL should continue to build on these recent interventions by taking a more *strategic* approach to ASM. This means developing measures to ensure accountability while addressing the main drivers behind the expansion of ASM and its more negative impacts, and particularly those ‘push factors’ that are more likely to be modified through the use of appropriate instruments.

An effective ASM management strategy would concern all operations throughout their life cycle, including activities as far upstream as mining and as far downstream as traders, and secondary processing operations that are artisanal or small scale (Paget et al. 2015). It would also be integrated with industry strategies and wider national–rural development plans (Hilson and McQuilken 2014). While developing and implementing such a strategy is certainly no easy task (Spiegel 2011: 197; 2014: 303, 305, 308), a recent draft guide produced by RCS Global for the Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGF) (Paget et al. 2015) provides more details for governments on how a strategic approach can be achieved in practice.⁸

7 For example, even in the context of an ongoing moratorium, low-level ASM activities are often tolerated, especially if undertaken as a local livelihood diversification strategy. For reasons highlighted in the paper, such as a lack of monitoring and enforcement resources, even more commercial ASM, or ASM activities undertaken by larger numbers of local or migrant actors, do take place despite the moratorium.

8 The IGF is a global forum for dialogue between member-country governments, mining companies and industry associations about practical issues related to the sustainable management and development of the mining sector. It includes governments from the Asia-Pacific, such as India, Mongolia, Papua New Guinea and the Philippines, but not Lao PDR (IGF 2014).

The starting point of the guide is that there is no 'best practice' in ASM management, but rather sets of 'good practices' that are continually evolving and whose effectiveness is context dependent. Instead of recommending a cookie-cutter set of reforms to be applied universally, it thus reviews a number of instruments that can be employed by governments to better manage ASM. Among others, such interventions include ASM zones; livelihood diversification schemes; education and training; the provision of services; supply chain initiatives; capacity building within relevant government agencies; and better interaction between national and local level planning and monitoring, including as it applies to different ASM types (for instance, alluvial versus hard rock, mechanised versus manual) and different minerals and metals (Spiegel 2011: 191–3, 202; Spiegel and Hoeung 2011: 3, 5, 7, 10–11; Eslava 2014; Paget et al. 2015: 9, 12–15, 41, 61–4, 69–70, 78–92, 96–9). For each of these tools, the guide highlights advantages and disadvantages, including potential design and implementation challenges and the kind of contexts where they may prove most or least effective.

It also suggests how each tool can be incorporated into different overall approaches that best suit the existing conditions of particular countries or sections of a country's artisanal and small-scale mining, as well as the resources available for their management. For instance, such approaches may emphasise the promotion of 'better ASM practices' through training and incentives rather than forced compliance, particularly where governments lack monitoring or enforcement capacity. In other contexts, they may instead involve full compulsory licensing, monitoring, enforcement and sanctions for non-compliance, as well as effective incentives, either in relation to all artisanal and small-scale mining or to particular sections of it (such as particular kinds of operations, like mechanised or commercial; particular types of metals; or operations within specific areas of a country). The guide further suggests how governments can switch between different approaches to reflect changing conditions and ensure continued improvement in artisanal and small-scale mining's profile. An effective ASM management strategy for the Lao PDR would therefore need to be grounded in up-to-date research on the country's artisanal and small-scale mining, including its positive and negative impacts, supply chain characteristics and relationship to other economic sectors and regional economies. It should also be guided by an analysis of existing capacity gaps within government (Paget et al. 2015). As there is a current dearth of up-to-date data on both fronts, new ASM research should be a priority for the Lao PDR.

A strategic approach to ASM should then be guided by a vision about clear standards to which GoL wishes ASM to operate, keeping in sight what can realistically be achieved given artisanal and small-scale mining's current profile and available resources, as revealed by the aforementioned research and gap analysis. The guiding vision and wider strategy should be developed by an ASM taskforce or coordination cell, including representatives from all government departments relevant to managing ASM. It should also be informed by consultations with other relevant stakeholders so as to maximise transparency, legitimacy and buy-in, and to ensure that it features effective incentives. The vision should, of course, already be incorporated in the final ASM regulations that were being developed at the time of our research.

The strategy would then need to be effectively implemented by departments working in coordination with one another through the ASM taskforce or coordination cell, which could be set up either as a separate government organ or hosted by a single department or several departments (Paget et al. 2015). Crucially, relevant departments would also need to be well resourced and have adequate capacity. In turn, this can be achieved only if such a strategy is developed and implemented with the support of international donors and in iterative consultation with a multitude of relevant stakeholders, including, among others, representatives from each of the ASM mining subsectors; representatives from each of the connected mineral and metals sectors and the ancillary industries that support the ASM mining subsectors; the communities that surround ASM mining areas; civil society and LSM operations. As past experience has shown, such meaningful, collaborative participation is key to mobilising the goodwill and resources, without which it would be impossible to develop a governance system capable of enhancing the positive contributions of legitimate forms of ASM, whilst also ensuring accountability and mitigating the sector's more negative impacts (Paget et al. 2015; see also Aubynn 2009; Spiegel and Hoeng 2011: 8–11; Spiegel 2014: 303, 307).

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