ENERGY AND MINES

National Economic Research Institute NERI Lao PDR

ICMM International Council on Mining & Metals

InDepth

Utilizing mining and mineral resources to foster the sustainable development of the Lao PDR

Mining: Partnerships for Development
April 2011

Foreword

In early 2010, ICMM undertook its fifth country case study on the economic and social contribution of mining with the active co-operation of the Lao PDR government and industry partners operating in the country. The Lao PDR provides an ideal subject matter for a rigorous assessment of mining's socio-economic impacts. A resource rich but low income country, the Lao PDR is undergoing significant socio-economic change.

This report focuses on the two existing large-scale mines in the Lao PDR – MMG Sepon (owned by MMG, the subsidiary of China Minmetals Corporation, and ICMM's first Chinese-owned member company) and the PBM Phu Kham Copper-Gold Operation (owned by PanAust Ltd). Together, they account for the bulk of mineral production in the country. With revenue from these mines set to increase, and more than 570 mineral deposits identified across the country (including gold, copper, zinc and lead), the potential for further growth in mining is significant.

The Lao PDR case study represents the first application of ICMM's *Mining: Partnerships for Development Toolkit*. It provides a systematic approach to measuring mining's positive and negative economic and social contribution. The quantitative and qualitative methods used in the Lao PDR are identical to an earlier version of the toolkit applied in four other countries (Chile, Ghana, Peru, and Tanzania) allowing for systematic cross-country analysis. We hope that through reading this study, others will be motivated to apply the toolkit in mineral-rich countries.

This report was written by the National Economic Research Institute (NERI) and economic staff from the National University of Laos, Oxford Policy Management (OPM) and Earth Systems Lao (ESL). The findings were presented at a February 2011 workshop in Vientiane hosted by the Lao PDR government and ICMM. The findings of the report have been broadly endorsed by the Ministry of Energy and Mines on behalf of the Lao PDR government.

What the study found, in short, is that mining is making some striking contributions at both local and national levels in the country – albeit significant work will be needed to avoid potential future challenges. By building on the strengths of its approach so far, the country has the opportunity not just to capture very substantial socio-economic benefits from mining over the long term, but to become an exemplar in this respect for the wider region. It is hoped that the findings and analysis generated by this study will make that outcome even more likely.

R. Anthony Hodge
President, ICMM

Executive summary

About Mining: Partnerships for Development
ICMM's Mining: Partnerships for Development initiative focuses on enhancing mining's economic and social contribution. It supports the formal commitment made by ICMM member companies to actively support or help foster multi-stakeholder development-focused partnerships in countries where they are active.

Mining is economically critical for millions of the world's poorest people with some 50 countries being significantly dependent on mining. Yet mineral wealth does not always mean positive economic growth – the so-called "resource curse" theory.

In 2004, ICMM began the Resource Endowment initiative in collaboration with UNCTAD and the World Bank Group. It developed a substantial body of research on why some countries have avoided the "resource curse" and developed practical actions for companies, governments and civil society. It was overseen by an independent international advisory group including the Head of the UN Global Compact and a former Prime Minister of Senegal.

The Resource Endowment initiative showed that the "resource curse" is not inevitable. Mining investments can drive economic growth and reduce poverty nationally and locally. However, companies alone cannot unlock the development benefits from mining – governance is key and multi-stakeholder partnerships can help fill capacity gaps. The findings were based on the application of ICMM's *Resource Endowment Toolkit* (April 2006) in four countries – Chile, Ghana, Peru and Tanzania.

The toolkit has been now been revised, extended and re-published as the *Mining: Partnerships for Development Toolkit*. It responds to a clear need in different parts of the world for a more systematic and objective way to quantify and agree ways to enhance mining's economic and social contribution.

It is currently being applied in a number of countries and can be used by mine managers and those interested in promoting economic and social development (host governments, development agencies and development-focused NGOs).

For more information, visit www.icmm.com/mpd or email us at info@icmm.com.

This study is the first economic and social assessment of large-scale mining undertaken in the Lao People's Democratic Republic (PDR). It is based on a wide range of data together with studies undertaken by government (NERI), the consultants and the companies concerned, as well as other public documentation. The breadth of these data provides a sound basis for analysis. This report adds to a number of other similar country case studies written for the International Council on Mining and Metals (ICMM), undertaken as part of the Resource Endowment initiative (REi) and Mining: Partnerships for Development initiative.

The full draft report was presented in February 2011, at a workshop in Vientiane attended by 150 representatives from national and provincial government as well as the National Assembly. Written comments were received from Lao PDR government (Ministry of Energy and Mines), World Bank, IMF, WCS, IUCN, MMG, PanAust and Rio Tinto.

The report is presented in six main sections:

- **Section 1:** the country context for the study
- **Section 2:** an assessment in quantitative terms of the various impacts of large-scale mining at the local level, both positive and negative
- **Section 3:** an assessment of how economic and social outcomes have changed at the national level during a period when mining has assumed greater importance
- **Section 4:** a quantitative assessment of how large-scale mining is likely to impact upon the macroeconomy now and in the future
- **Section 5:** analysis of the impact of mining on governance structures, institutions and policies
- **Section 6:** a summary of the main conclusions and selected policy issues.

Section 1: The country context for large-scale mining

The main contextual points from Section 1 are:

- Reforms initiated under the "New Economic Mechanism" in 1986 and the adoption of a new constitution in 1991 set the scene for policies to provide a stable investment climate and attract Foreign Direct Investment (FDI) into mining. This led to two large copper (and gold) projects establishing a basis to commercially exploit mineral resources.
- The first major commercial private-sector mine was established in Sepon in 2002 and is known locally as MMG Sepon. The project grew from a small gold producer into a medium-scale producer of processed copper cathodes and is part-owned by the Lao PDR government (10%) and MMG, the Australian-managed subsidiary of China Minmetals Corporation of China.
- The second large privately-owned copper mine was established by Phu Bia Mining Ltd (PBM), the local subsidiary of the Australian-listed PanAust Ltd, in 2008, although a smaller gold mine had been operational since 2005. The Phu Kham copper-gold operation is in an area that is highly prospective and the intention is to expand operations considerably over the next five years.
- A third exploration project has been created recently through the re-establishment of Rio Tinto Exploration in the Lao PDR in a joint venture with Mitsui which is searching for bauxite on the Sanxai plateau. The joint venture was established under the name Lao Sanxai Minerals Ltd and provides the prospect for future growth in a number of projects in the country. However, field activities commenced only in February 2010 so it is not yet feasible to analyze its possible contribution.
- A number of small-scale mining operations developing lignite, tin, zinc, gold and sapphire deposits have been operating in the Lao PDR for some time. Some mines date back to the colonial era.
- Miners and mining companies (artisanal, small and medium scale) that are new to the business and have limited experience and technical qualifications have become increasingly well established and voracious in their pursuit of new mineral resources in recent years (as a result of high prices). This is causing great concern to the national government, mining firms, community groups and environmentally concerned stakeholders across the country.
- Beyond mining, the next major economic growth sector in the Lao PDR is in hydropower which is dominated by the Nam Theun 2 hydropower project. This project began exporting electricity to Thailand in March 2010, although construction started in 2005 after many years of planning (in its present form it started life back in 1994 but it was originally conceived back in the 1930s).

Section 2: A quantified assessment of the contribution of mining at the local level

The quality of the social and economic data at the two main mines that are the subject of this present study is extremely good: it relies heavily on four biennial household surveys in the case of MMG Sepon and three in the case of PBM. ***This is a rare situation as regards data and it exemplifies two companies that take their sustainability roles very seriously***. Our findings show the two companies (MMG Sepon and PBM) are working at the local level to use the economic opportunities offered by mining (employment, direct spending on goods and services and community development) to establish a much broader set of economic development benefits that extend beyond the immediately affected areas. ***The impact has been considerable and, in just nine years, average incomes at Sepon have increased seven-fold and at PBM's Phu Kham copper-gold operation total village incomes have already increased five-fold. The result of these increases in wealth is seen in the changes in people's personal goals during this period: from food security, improved housing, possession of a rice mill and a tractor to motorbikes, mobile phones, refrigerators, water pumps, bank accounts and cars.***

Looking to the next five years, if the government aspires to generate further benefits from these mining investments then parallel policies beyond those applied to mining itself are needed. These include committing more spending on regional development initiatives to improve the educational and health status (and thus the economic potential) of local people and providing an improved investment environment conducive to setting up businesses and service activities.

- ***Social-economic trends:*** The changes brought about by the presence of the mines are dramatic. Previously, very few people in the mine areas were in wage employment. Those that were earned the equivalent of only around US$1 a day. Subsequently, in the past decade in the case of MMG Sepon, village incomes, telephone and vehicle ownership, electricity and services (use of bank accounts in particular) have all increased dramatically, and seemingly without increasing inequality. Despite this tremendous increase in wealth in such a short period of time, a comparison of socio-economic development trends at the national level with those in the mining-affected villages shows that the latter still remain relatively poor by international standards. While the mines are clearly not responsible for low levels of nourishment in children under five or still relatively limited access to sanitation, these problems do highlight the development challenges they face in their local area. However, the mines are responsible for their environmental impacts and the lives of poor communities, particularly those reliant on fishing, remain highly vulnerable to any failure to maintain existing high-quality water discharge standards and environmental contingency measures.
- ***Employment and dependents:*** Both the mines studied have made a considerable contribution to job creation in the local communities through direct and indirect employment. An estimated 30,000 people are now dependent on the two mines, which equates to around 1% of the national workforce or 5% of those engaged in non-agricultural activities.
  - Some negative impacts at the local level from in-migration have been experienced but because of tightly controlled employment by the companies and village leaders favouring local people – these impacts have been kept to a minimum. In addition, due to the controls on employment, it has been families rather than single men that have migrated to the area. However, the downside of this policy to positively discriminate in favour of people from the local area in respect of employment is that it may have resulted in a bias against continuing with higher education. In MMG Sepon, for example, it was found that higher education enrolment rates tended to fall the closer people lived to the mine. This is presumably because of the increased opportunity cost of working over studying, a finding that could potentially have negative implications for local communities in the longer term as and when the mine closes.
  - As the mines' footprint grows, land will be lost to operational requirements but it is unlikely many new jobs will be created to offset the loss of land. While compensation procedures are well established, it is jobs that the people value most highly in these poor areas.

  - In 2008/09, the effect of the global financial crisis had a major impact upon MMG Sepon workers from Vilabouly because of their relatively high (indirect) employment for the mine in clearing unexploded ordnance, exploration and mining. These activities were forcibly cut back to cope with the financial crisis. However, by 2010, indirect employment had rebounded to around 1,600 people. Nonetheless, this incident highlights how even the large mines were not impervious to changes in international conditions.

- ***Procurement of local goods and services:*** The two mines have played a major role in boosting local production and supporting the development of new businesses to supply the mines.

- ***Community Development Funds:*** The two mines of MMG Sepon and PBM contribute US$500,000 and US$300,000 respectively each year to community development trust funds that are spent in accordance with national development priorities. Since 2003, MMG Sepon has distributed close to US$3 million on community development programs. PBM expects to introduce two new funds, worth US$100,000 each, for new projects in 2011. PBM has distributed US$950,000 since 2007. The mechanisms whereby the companies engage with communities include well established grievance procedures that appear to be working effectively.

Section 3: Economic and social outcomes at the national level

- The Lao PDR has been able to achieve ***consistently high rates of GDP growth*** in the past 10 years and at only infrequent periods has inflation or exchange rate instability been a problem, mainly during the period of 1997–1999 as a result of the Asian Financial Crisis.

- Large-scale mining has clearly played an ***important contributory role in reducing poverty at the national level through the payment of taxes and royalties, employment and expanding economic opportunities***. Measured in terms of the UN's Human Development Index, poverty fell during the period 2000 to 2009 when mining took on greater macroeconomic importance, albeit from previously high levels. Because data is only available from 1995, how much of the improvements can be attributed to mining is far from clear. However, it is plausible that the improving fortunes of mining have been closely linked with those of the wider economy, where growth in services and the industrial sector (hydropower, construction, utilities but excluding manufacturing) has also been strong.

- The Lao PDR has attracted significant ***FDI in the mining sector*** (80% of the FDI flow since 2003). Nevertheless, it remains a somewhat difficult (and thus expensive) place to do business. The government has launched some initiatives to improve the business environment and steadily over the period 2003 to 2008 a range of business indicators have improved.

- The ***quality of macroeconomic management has remained sound*** during a period when minerals, as a result of large-scale mining, came to dominate exports (45% of the total) and government revenues (12% of the total). Despite strong GDP growth, inflation and exchange rates have remained stable and the government has managed to reduce both trade and budget deficits in recent years. The government has pursued a cautious policy throughout the last few years of high mineral revenues, wisely opting to pay off external debts and build up foreign exchange surpluses. However, in a 2011 International Monetary Fund (IMF) report, they expressed considerable concern that the economy was at risk of exceeding its macroeconomic "speed limits".[1]

1 February 2011, IMF Country Report No. 11/44, *Lao People's Democratic Republic – Staff Report and Public Information Notice.*

- ***Total taxes, dividends and other levies paid to government by the two mines between 2003 and 2008 totalled around US$635 million. In 2010, the mines were expected to pay US$185 million to the government***. This compares with the situation as recently as 2003 when the equivalent payments were only US$1 million. This figure jumped dramatically to US$129 million in 2007–08 due to high commodity prices and then fell back to US$95 million in 2009. Challenges clearly remain in managing large mining revenue windfalls (taxes and dividends) and it may become more difficult to exercise the same prudence and restraint as in the past as government mining revenue continues to grow. ***During our study, numerous concerns were voiced within government and the wider group of stakeholders that resources increasingly seem to be going into consumables (e.g. government vehicles) rather than into the more necessary capital investments (education, health and infrastructure)***.
- Despite what looks like the ***onset of a mini-resources boom occurring in the Lao PDR, it could yet be relatively short-lived in mining terms. Without new investment in exploration and development*** there is a real risk that many of the benefits could end with the current mineral fields. If no new large-scale mines make significant discoveries and start investing in exploration and the construction of mines, then production, exports and tax revenues will fall as mine closure nears.

Section 4: Macroeconomic assessment of large-scale mining in the future

- ***Gross Domestic Product:*** Large-scale mining now contributes significantly to national income (GDP) through the significant proportion of goods and services bought within the Lao PDR. A proportion of this spending creates value added in the form of local wages and profits in the supplying firms. We estimate that on average the two mines will contribute around 10% to GDP annually over the next 14 years, mainly through the profits made by the firms but also through the wages and salaries of directly and indirectly employed workers.
- ***Government revenues*** from mining totalled around 12% of total government revenues in 2009. Between the years 2003 and 2010, when the two mines were just getting established, they paid a total of US$635 million to government through corporate income tax, royalties, personal income tax on salaries and dividends from the 10% equity shares the government holds in the two mines. We estimate that by 2015 large-scale mining revenues will rise to US$215 million annually.
- ***Balance of payments:*** After the major injections of FDI into the economy, the next significant component in the balance of payments is the flow of export earnings. Exports of copper (and gold) are expected to continue to rise as new fields are exploited. There is a clear staged approach to the increases (largely as a result of modelling the expansion stages of PBM) that show jumps in production in 2015 and 2020. Exports from the two mines were expected to reach around US$900 million in 2010. Although these exports are offset both by large imports of goods that are not domestically available, and interest payments on foreign debt as well as by dividends paid to shareholders overseas, there will nevertheless be a large current account balance of payments surplus for all the years the mines are in operation.

Section 5: Analysis of the impact of mining on governance structures, institutions and policies

In the case of the Lao PDR where there is a strong government, it is clear that mining companies have only limited direct influence on governance, institutions and policy choices in the country. However, even if the influence is indirect and only weakly controlled by the companies, it definitely matters since the size and contribution of the two mines is large relative to the national economy.

Earlier work under the REi provided some general working hypotheses stating that the size and quality of the broader social and economic impact of mining operations is conditioned by: (1) the economic, political and social governance system of the mining country, (2) the coherence or otherwise of government policies and (3) the capacity of different levels of government for co-ordinating and facilitating co-operation between public institutions, companies and communities. Within this context we found the following:

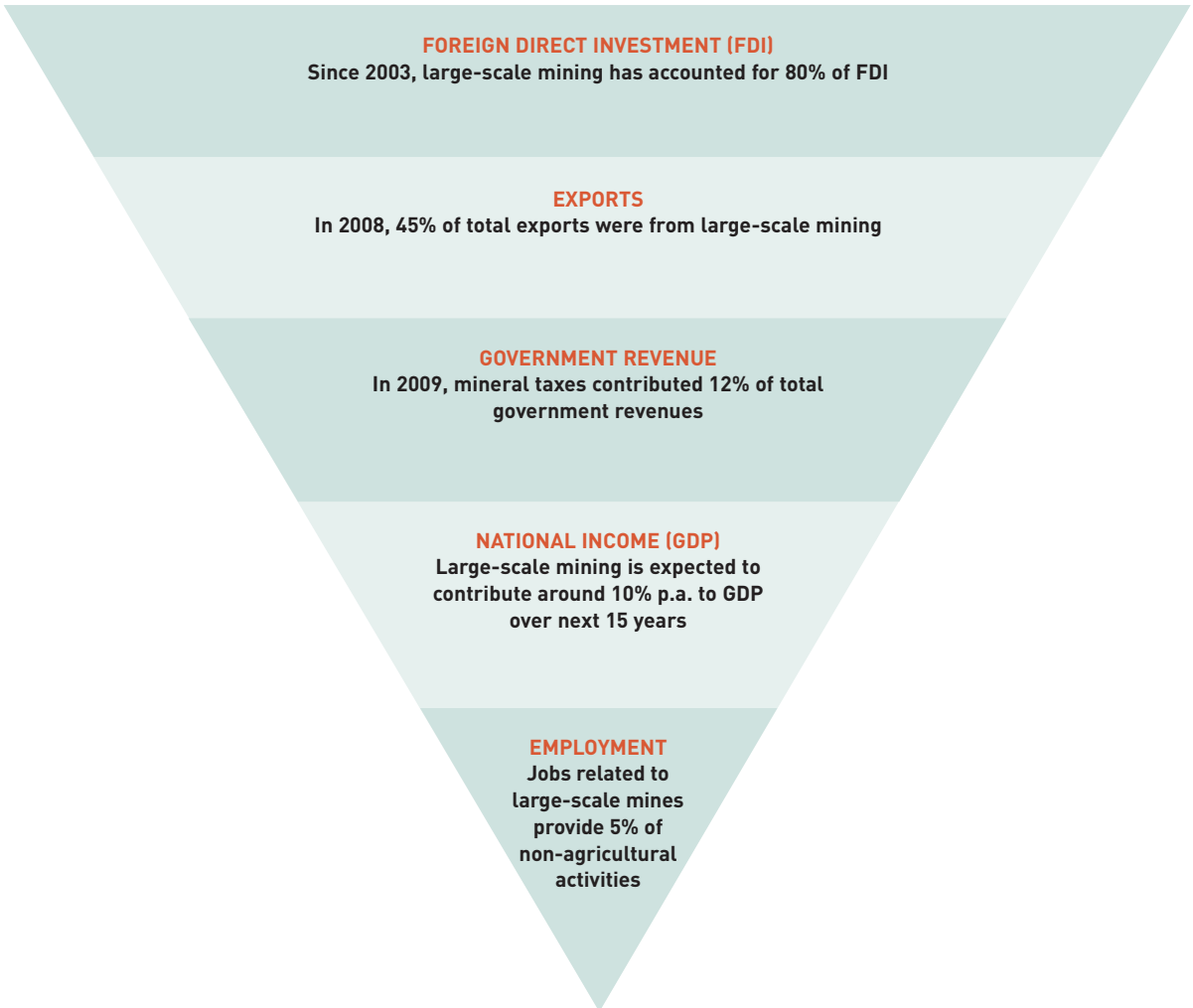
- It is very encouraging that the ***government has recognized and responded to the additional needs of the mining-affected areas***. For example, at Sepon it is reported that an additional 200 civil servants have been transferred to the area to help cope with the extra demand for public services.
- The ***mines are located in remote rural communities that have little other development prospects*** and therefore the companies (in conjunction with the local and district governments) have an implicit responsibility to help build institutional and governance capacity, to enhance the social and economic contribution of mining and improve the communities' development prospects. One attempt at building the skills and understanding of district government workers is through internships at the companies. For example, PBM hosts interns from the Department of Geology laboratory and Water Resources and Environment Agency (environmental monitoring) and trains them at the mine site.
- One of the major problems for large-scale investors in the Lao PDR is with decisions taken by devolved powers at the district level, which result in small-scale mining or hydro concession agreements impinging occasionally upon their central government-approved concessions.
- The payment of taxes by contractors to the mines is another area where competing and conflicting jurisdictions between different levels of government creates a degree of confusion about correct tax jurisdictions and so requires clarification.
- In the provision of community development funds (large sums of money to resource-poor districts), the two mines often find themselves caught between the demands and needs as perceived by the local communities (requesting educational facilities for example) and those expressed by the centrally conceived district development plans (that may prioritize, for example, infrastructure).

Section 6: A summary of the main conclusions and selected policy issues

Many countries struggle with the decision as to whether the benefits from exploiting their non-renewable resources outweigh the costs. Typically, most of the positive benefits accrue at the national level (taxes, foreign exchange earnings) while the negative impacts mainly occur at the local level (in-migration, social upheaval in communities, noise and pollution, increased strain on limited rural services and few direct jobs to compensate for lost land). As in the inverted pyramid (Figure ES.1), the sheer weight of the positive benefits at the national level can be thought of as bearing down heavily upon embattled local communities that face many costs but enjoy relatively few benefits. Other than with the provision of local employment, which is typically very small, the sharp end at the bottom of the pyramid can be an uncomfortable place to be.

Fortunately, in the Lao PDR we found that this analogy is rather less pertinent than it is in some other mining countries. In many respects the benefits at the national level have been complemented by those at the local level. ***In recent years, mining has come to represent 80% of FDI, and it is a huge foreign exchange earner for the country with mining providing 45% of total exports, 12% of government revenues and 10% of national income*** (Figure ES.1).

Figure ES.1: The contribution of mining to the Lao PDR



However, at the local level a positive picture also emerges of local communities interacting and working with the mines to ensure that they are economically integrated into their surroundings. The result of this has been local economies that have changed dramatically. While previously they were based on subsistence agriculture, they now possess thriving local markets and businesses. With this change, the incomes in villages have increased considerably. In many respects the base of the inverted pyramid has already been expanded.

Additionally, ***the presence of the mines does not seem to have led to increasing income inequality***. Equality is culturally an extremely important concept in the Lao PDR. It is, therefore, not only a matter of natural social justice that growth in incomes around the mines be achieved alongside increasing equality, but of pragmatic interest to the mine operators that this is the case. Higher incomes, improved economic opportunities and greater equality have made the mines a welcome addition to the community. While not everyone has a job guaranteed in the mine, many people do derive an income and livelihood from the mine (directly or otherwise). Modern mining uses high-tech equipment in a capital-intensive way and will never be a large employer of people – MMG Sepon and PBM currently account for only around 1% of the total workforce in the Lao PDR. However, the activities and initiatives of the mines to maximize local labour where possible and emphasize local procurement, provide training and community development are all critically important in widening the base of the pyramid. Only in this way has it been, and will it in the future be possible to increase the benefits beyond employment in the mine and to spread the weight of the national-level benefits more widely.

So, the question arises of where is the downside to all these benefits? We show that the main risk could be a narrowing of benefits at the top of the pyramid (i.e. at the national level) if the large macroeconomic contributions are not managed well. Without close supervision, an appreciating real exchange rate could negatively impact upon the wider economy as other exports become relatively less profitable.[2] While the quality of macroeconomic management to date has been good, there is little transparency about how the entire resources available to government are managed and considerable off-budget spending has occurred in the past (IMF 2011). Thus it is hard to get a full sense of the degree of control that the government really has over its spending. Careful planning on the part of government, development partners and the mines is needed to determine how mining can be integrated more fully and effectively into national growth and poverty-reduction strategies. Furthermore, if commodity prices were to fall again (as they did dramatically in 2008), an overdependence on mineral revenues could result in serious macroeconomic instability as these revenues dry-up.

The ***clearest need is to improve the wider business environment so that local firms can respond to the business opportunities to supply the mines and build a competitive basis to supply other firms within the Lao PDR***. With a more supportive enabling environment, over time these growth impulses could even expand to the wider region. At the local level, the dramatic impact of the global financial crisis upon communities immediately surrounding the mine should bring a greater awareness of the sensitivity and dependence of local communities on mining's own fortunes.

2 In this regard, it is alarming to note that the IMF in 2011 estimates the Real Effective Exchange Rate could be 17% more appreciated than the 2007 average.

Abbreviations

EITI
Extractive Industries Transparency Initiative

ESL
Earth Systems Lao

FDI
Foreign Direct Investment

HDI
Human Development Index

HPI
Human Poverty Index

ICMM
International Council on Mining and Metals

IMF
International Monetary Fund

LECS
Lao Expenditure and Consumption Survey

LPRP
Lao People's Revolutionary Party

LTIFR
Lost Time Injury Frequency Rate

MDGs
Millennium Development Goals

MEPA
Mineral Exploration and Production Agreement

NA
National Assembly

NERI
National Economic Research Institute

OPM
Oxford Policy Management

PBM
Phu Bia Mining

PDR
People's Democratic Republic

REi
Resource Endowment initiative

RER
Real Exchange Rate

SMEs
Small and Medium-sized Enterprises

SDTF
Sepon Development Trust Fund

SPDA
Sepon Project Development Area

TRIFR
Total Recordable Injury Frequency Rate

UNDP
United Nations Development Program

UXO
Unexploded Ordnance

VDC
Village Development Committee

1

COUNTRY CONTEXT

1. Country context

The purpose of Section 1 is to provide an overview of particular features of the Lao PDR's history, politics, economics and governance that are likely to have a bearing on the conduct of mines and their social and economic impacts – the country context. The REi has shown that differences in outcomes across countries depend partly on differences in governance, institutions and public policy processes. These conditions and the interactions between different stakeholders allow investments in the mining industry to render higher or lower economic and social returns.

1.1 A brief history of the Lao PDR

During the nineteenth century, the territory known as Laos was colonized by the French following the settlement of the Franco-Siamese war (for a map of the country, see Figure 1.1). Laos was then governed as a part of the Indochina protectorate up until the end of French Indochina following the battle of Dien Bien Phu, apart from the short-lived Japanese annexation and subsequent local declaration of independence at the end of the Second World War. Following incursion (by South Vietnam), the civil war and political disruption, in November 1975 the Pathet Lao formed a new government. The 600-year-old Luang Prabang monarchy was abolished and the Lao People's Revolutionary Party (LPRP) was established as the sole legal political party. Transition to a fledgling democratic market economy was not smooth and during the early 1980s falling food production resulted in severe economic hardship and it was clear that economic policies were not achieving the scale of growth and poverty reduction that the country needed. Thus, in 1985 the government began a series of reforms culminating in the adoption of the "New Economic Mechanism" the following year. State control of the economy was relaxed, collectivization ended and farmers were allowed to sell their produce in free markets. Throughout the liberalizing reforms, the LPRP has continued to maintain its role as the country's sole political party.

Figure 1.1: Map of the Lao PDR

Source: United Nations, www.un.org.

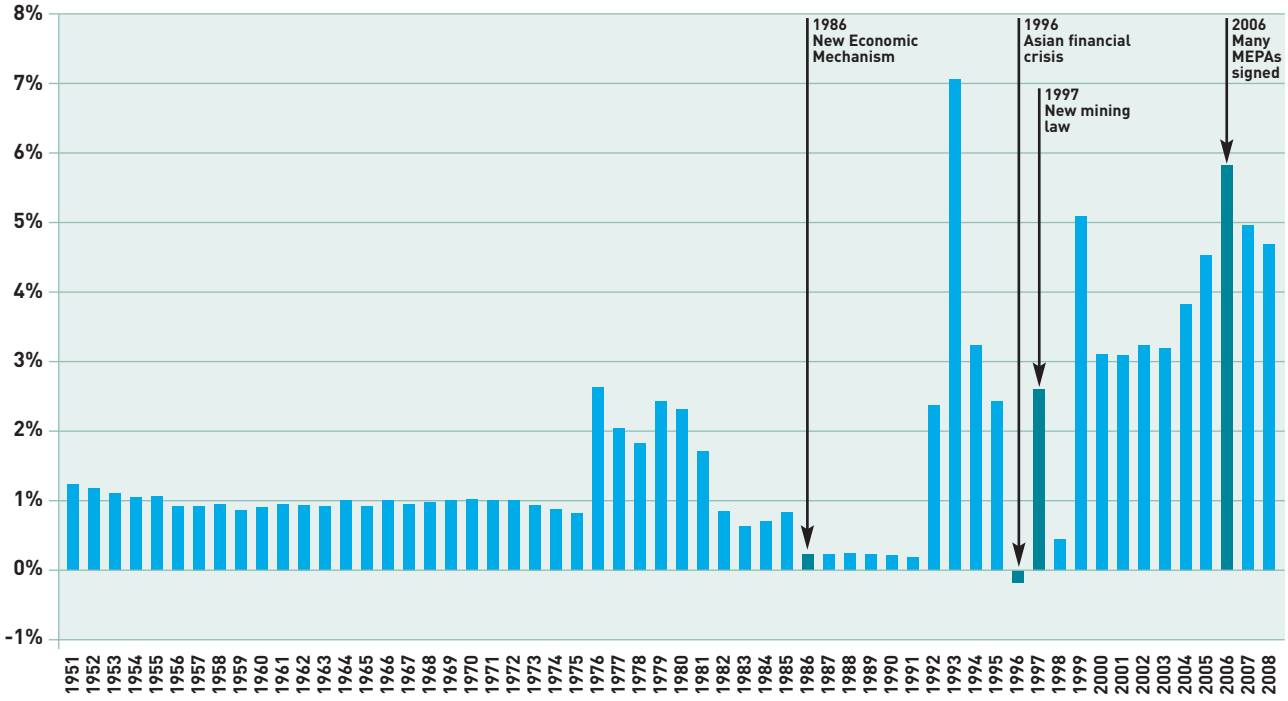
1.2 A brief history of the economy

From 1951 to 1975, the main reason for slow economic growth was the Vietnam War but even since then GDP growth has showed noticeable turbulence. In 1975, the adoption of a Soviet-style economic system led to six years of improved GDP growth of around 2%–2.5% but this fell to less than 1% from 1982. Economic growth during the 1980s and early 1990s remained turbulent, mainly due to unfavourable climatic conditions. The quantity and timing of rainfall bore heavily on a largely agricultural economy and droughts during 1987, 1988 and 1991 resulted in low economic growth (Souvannavong and Sundara, 1994). As with the rest of Southeast Asia, economic growth temporarily slowed again during the Asian Financial Crisis of 1997–98. During this crisis, the government faced a great deal of pressure to devalue the Kip and hyper-inflation followed. This in turn led to falling demand and a lower level of foreign capital inflows, resulting in several years of stagnant economic growth.

During the mid-1980s, the government and economy was also affected by the fiscal difficulties in the Soviet Union, which resulted in large reductions of foreign investment and aid. The Lao PDR then turned increasingly for assistance to France, Japan and international agencies such as the World Bank and the Asian Development Bank. These agencies required that further economic liberalization be undertaken and reforms to strengthen banking institutions, reduce tariffs and eliminate trade regulations were initiated. Being a landlocked country, the Lao PDR was also encouraged to become more economically integrated with its neighbours.

In August 1991, a new constitution was adopted that formalized a market-oriented economy, guaranteed property rights and laid the foundation for policies to promote a stable investment climate. The liberalizing reforms have broadly been a success, with GDP per capita growing on average at 1% per annum between 1975 and 1991, 3% since 1991 and 4% since 2000. During the Asian Financial Crisis of the late 1990s, the Lao PDR was not as badly affected by the volatility as its neighbours, due to its low degree of dependence on global finance.

Figure 1.2: GDP growth per capita, 1951–2008



Source: Maddison (2010).

More recently, the Lao PDR has demonstrated strong growth rates – 7% in 2008,[3] 7% in 2009[4] – and was forecast to grow by 8% in 2010.[5] These gains have largely been driven by the hydro-electric and mining sectors, accompanied by strong commodity prices. In 2008, before Nam Theun 2 was operational, the Lao PDR exported US$116 million in electricity and US$716 million in minerals. Together, this accounted for 59% of gross exports.[6] Despite a strengthening economy, some important challenges remain. The government has significant foreign debt (albeit mostly concessionary), but enough to worry the World Bank and the IMF who believe that there is a high risk of debt distress. However, stronger than expected growth, currency appreciation and the introduction of a value-added tax have somewhat mitigated this concern.[7] Initially warning of the effects of loose monetary policy in 2008, the IMF reiterated these concerns about overheating in the domestic economy and the inherent risks to the balance sheets of local banks from low capital requirements in a statement in 2011.[8] In response, reforms to address these issues have been initiated.

With the exception of the Asian Financial Crisis (1997–98), the Lao PDR has been in the enviable position of achieving high rates of economic growth with low inflation and exchange rate stability. The source of this greatly improved growth performance has largely been the resource sector, and especially mining and hydropower. When looking at the graphical evidence of GDP growth per capita over a long period, it would appear that the emergence of large-scale mining in the Lao PDR that resulted from changes to the mining law has also coincided with the longest period of sustained economic growth since 1951. Since 2000, the contribution of mining to Foreign Direct Investment (FDI), government revenues (taxes and dividends) and exports has risen significantly and as of 2010 the mining sector's contribution to GDP had risen to around 9%.

1.3 A brief history of mining in the Lao PDR

While large-scale mining has only a recent history in the Lao PDR, the mineral potential of the country was known long before. In the 1920s, excavation operations for cassiterite (used in the production of tin) took place along the Nam Pathene River and extraction continues to this day. With the liberalizing reforms of the late 1980s and 1990s, many commercial mining operations from other countries began to take a renewed interest in the Lao PDR. More than 570 mineral deposits have now been identified, with the main ones including gold, copper, zinc and lead (see Figure 1.3).[9]

The mining industry is informally segmented into three different levels: artisanal, small- and medium-scale operations and large-scale mines:

Artisanal mining, which is widespread in rural communities, consists of panning for gold and precious stones and is largely undertaken to supplement agricultural and other rural income. Surveys indicate that between 15,000 and 50,000 people are employed in the artisanal mining trade, with women making up approximately 75% of those involved. It is estimated that a panner can extract up to one ounce of gold per year. Despite internationally traded gold prices hovering around US$1,200 an ounce during 2010, it is unlikely that a panner would receive more than half of this, as middlemen, refiners and assayers take their cut. The domestic artisanal mining sector also provides few if any tax revenues for government. Because of its limited experience in handling dangerous chemicals, it is responsible for some adverse impacts on local communities who have been affected by tailings from small-scale mines and the occasional spillage of chemicals. Monitoring and regulating this informal sector is notoriously hard for governments of any country to manage: the Lao PDR is no exception.

3 World Bank (2008).

4 World Bank (2010a).

5 *Ibid.*

6 World Bank (2009c).

7 Debt Sustainability Analysis prepared jointly by the IMF and the World Bank, in consultation with the Asian Development Bank.

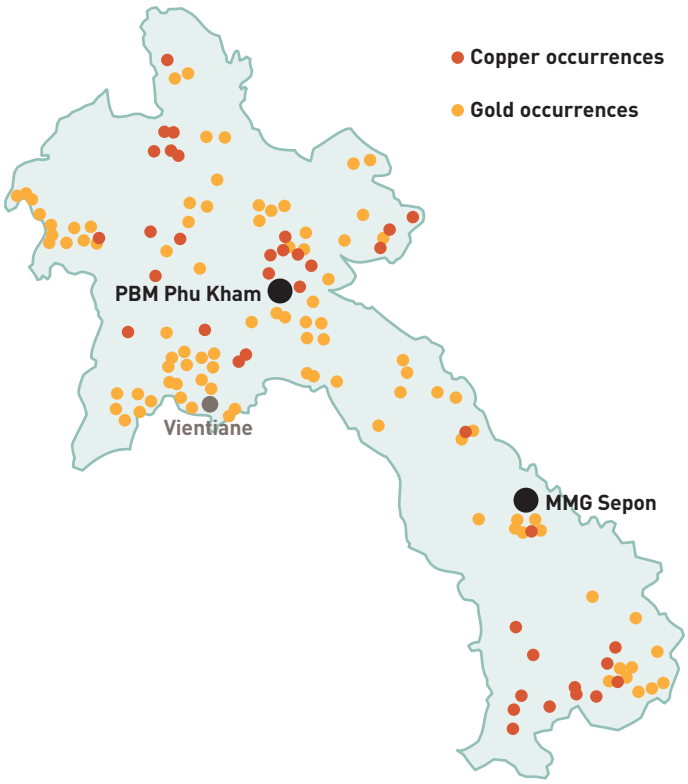
8 *Lao People's Democratic Republic: 2008 Article IV Consultation – Staff Report, IMF Publication, 2008 and February 2011, IMF Country Report No. 11/44, Lao People's Democratic Republic – Staff Report and Public Information Notice*

9 Source: Department of Geology, Laos PDR (2008).

Small- and medium-scale mining partnerships (domestic companies with regional partners) have also attracted a great deal of negative attention in recent years and have also proved difficult to regulate effectively. Complaints arise of inadequate environmental oversight, lack of community consultation or compensation and the non-payment of taxes. Monitoring by government of these operations is difficult due to their large number and footloose approach to mining. Typically, these companies also lack experience and care in handling noxious chemicals, which has led to numerous health and environmental concerns. According to the Minister of Energy and Mines, 30% of these companies are not complying with regulations.[10] Monitoring and regulation of these enterprises are sporadic at best and little is known about the volumes and grades of ore they extract. In common with the artisanal miners, there is no fiscal benefit from their activities beyond the VAT paid on inputs, as they pay no taxes on profits or wages.

Two large-scale mines operate in the Lao PDR that between them account for over 90% of total national mining production: the PBM Phu Kham copper-gold operation (located 120 kilometres north of Vientiane capital) and the MMG Sepon gold and copper mine (located near Sepon, east of Savannakhet in the south). Because of these two large-scale operations, the Lao PDR is rapidly emerging as a serious global producer of precious metals, with growth in copper and silver tripling between 2005 and 2008, and the production of gold exceeding 230,000 ounces in 2006. The growth in other minerals and metals, such as lignite and gypsum, has also been dramatic over the past 10 years, making valuable contributions to the export earnings of the country (see Figure 1.4).

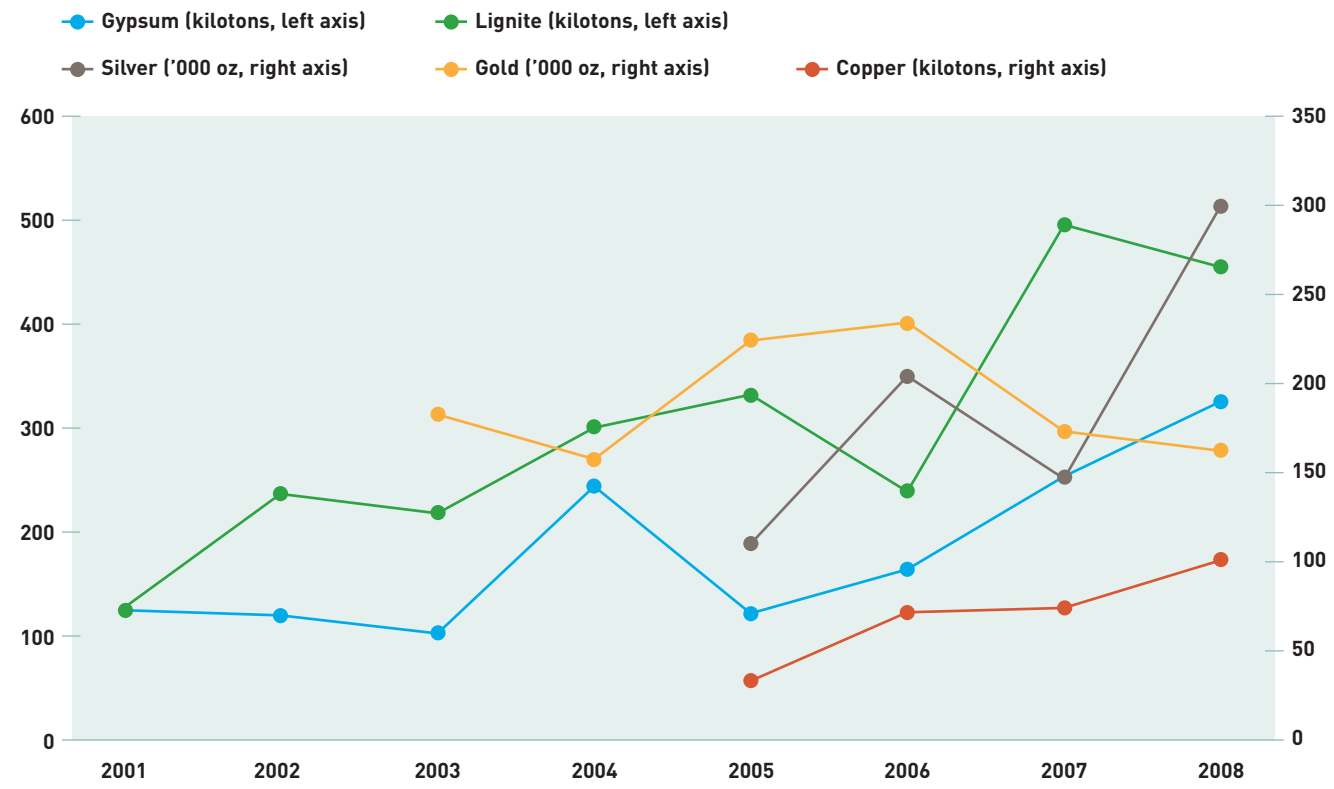
Figure 1.3: Known deposits of copper and gold



Source: Department of Geology and Mines, the Lao PDR. www.dgm.gov.la

10 The Vientiane Times reported, in an article from March 2010, how in one operation "[t]he cyanide and mercury used to extract the gold ... severely damaged the local environment and is suspected to have contaminated water sources, posing a major potential health threat to villagers in the area". The article went on to explain how the chemicals from the inexperienced operators of small and medium-sized mines were appearing in rice fields and lakes and were causing livestock deaths (*Vientiane Times*, March 2010).

Figure 1.4: Mineral production by weight and volume, 2001–08[11]



Source: World Bank (2009).

Source: World Bank (2009).

11 Data from a World Bank Country Economic Memorandum (June 2009).

1.4 Profile of operations at MMG Sepon

Approximately 40 kilometres north of Sepon in Savannakhet province, the MMG Sepon mining operation, commissioned in December 2002, comprises open-pit copper and gold mines. The MMG Sepon gold mine has an estimated life of two years but the potential for exploration is extremely positive in the areas surrounding the mine. After processing, the gold doré (a mixture of gold and silver) is transported overseas to a refinery. These days, the main operation for MMG Sepon is the open-pit copper mine commissioned in March 2005. The copper cathodes produced during processing are transported by road to customers within the Lao PDR and also Thailand, Vietnam and China. It is estimated that the copper facility has resources for the next 10 years and, with significant potential for exploration, could run for much longer, providing job security for its workers (in excess of 4,000 regular jobs and up to 5,000 during periods of construction) for many years to come.

In 2009, annual production totalled 67,562 tonnes of copper and 105,037 ounces of gold. Recently, a second autoclave was installed and a US$60.4 million project to expand capacity to 80,500 tonnes of copper cathode a year has been approved. In 2009, the government exercised its right to take up a 10% share in the mine and has since been receiving dividends in addition to taxes on profits. The way the mine has been developed is unusual in that, in sourcing a rich gold body, the investors were able to pay for and build a much larger copper mine through organic growth, rather than through large debt and equity investments (a situation more typical of the industry). This was hugely beneficial, not only to those who developed the gold mine, but also to the government, which was able to buy into a successful and profitable mine at minimal cost.[12]

The mine's neighbours include those living in the 2001 Sepon Project Development Area (SPDA), those impacted by the 2007 mine expansion, those who live alongside the main supply route to the mine (and main town) and those who live in other surrounding (Vilabouly district) villages. There are two main ethnic groups in the area: Lao Loum and Makong/Tri (or Chli). The Lao Loum speakers are comprised of two ethic sub-groups: Phu Tai and Lao. The Makong/Tri are comprised of the two groups Makong and Tri as well as smaller numbers of Ta Oy, Lu, Katang and others. Makong/Tri is used in this report as shorthand for these groups. In the SPDA, most of the people (two thirds) are Phu Tai and the rest are Makong/Tri, which is typical of the area. The communities impacted by the mine number around 34 villages with a total population of around 8,500.

In 2006, the MMG Sepon mining operations were examined by the United Nations Development Program (UNDP), which concluded that there were many positive consequences from the project. The original owners and developers had built an airfield, an all-weather highway, schools and health clinics, and had shipped in 10 tonnes of food monthly and treated 10,000 gallons of water per day. Furthermore, the project had to initially employ 300 people to clear 90,000 pieces of unexploded ordnance (UXO) from 2,000 hectares of land in the vicinity of the mine, as the site had been heavily bombed during the Vietnam War. Further, more than half of their 100 truck drivers were local women who the company had trained to drive. In 2009, there was an acidic water spill that killed fish that had migrated into the operation's on-site containment ponds but no water from these ponds was released into the external river system.[13]

12 The government taking up equity in a mine is fairly typical in similar countries to the Lao PDR, with the government paying for its equity stake through an interest-free loan from the company. Rather than handing over cash for this 10% ownership of the mine, the dividends that accrue to the government's 10% stake are used to pay off the government's portion of costs incurred in the exploration, development and commissioning of a mine.

13 MMG Sepon 2009, *Annual Financial Report*.

1.5 Profile of operations at PBM (Phu Kham copper-gold operation)

The PBM Phu Kham copper-gold operation is located approximately 120 kilometres north of Vientiane and is one of the leading producers of copper-gold concentrate in Southeast Asia. The mine is owned and run by a Lao PDR-registered company, PBM, itself 90% owned by PanAust Ltd of Australia and 10% by the government of the Lao PDR. PanAust has been working at an associated but much smaller Heap Leach gold operation since 2005, but operations at the Phu Kham copper-gold operation commenced in 2008.

In 2009, PanAust extracted over 54,000 tonnes of copper concentrate and 43,000 ounces of gold concentrate from its PBM operation.[14] Copper concentrate is taken by road 950 kilometres to the port of Sriracha (near Bangkok) for export. However, a new Mekong river border crossing is under construction that will reduce transport costs. Most of the concentrate goes to large smelters in China, India and South Korea, and the large Australian mining company BHP Billiton manages all concentrate sales (see Box 1.1).

The Phu Kham copper-gold operation is fed by a large open-pit mining and processing operation, constructed at a cost of US$241 million. An upgrade project, capitalized at US$100 million and designed to maintain production levels, given falling head grades from 2013, is expected to be commissioned in mid-2012. The mine is expected to have a lifespan of at least 12 years, but has the potential to remain operational for longer, given good prospects for expanding the resource. PBM operates a modern mine with a first-class, high-tech tailings storage facility, which means there is no active discharge from the copper-gold operation.

In March 2010, the company announced its intention to expand operations further by developing a gold-silver project at Ban Houayxai, 25 kilometres west of its current projects. This operation is expected to yield 100,000 ounces of gold and 700,000 ounces of silver annually, over an expected minimum eight-year mine life from 2012.

The Phu Kham operation employs over 1,600 people, with 26% from local communities in the immediate vicinity and a further 9% from the surrounding Xaysomboun district. The company has eight staff responsible for community development activities, and has launched various sanitation, micro-finance and development projects through its award-winning community development program.[15] The mining area is directly adjacent to two villages, Ban Nam Gnone and Ban Nam Mo. The socio-economic survey undertaken in 2008 established that there were 543 households and 3,133 people living in the two villages. Even since 2008, when the Phu Kham operation started, the local economy of both villages has changed dramatically from subsistence agriculture to a cash-based economy.

From an environmental standpoint, the main challenges at the mine are managing surface water and mine waste, particularly acid-forming waste. In 2009, PanAust spent in excess of US$12 million on environmental expenditures and there were no reported environmental incidents. In 2005, however, production at the Phu Kham Heap Leach gold operation was suspended after a chemical spill into the Nam Mo River during project commissioning led to a local fish kill incident. The subsequent investigation by the company and government led to stringent controls to ensure that this event would not reoccur. The implications of maintaining the existing high-quality water discharge standards of both mines now and in the future cannot be stressed enough, as it is the poorest people (fishing communities) that are most harmed by a chemical spill. The anxieties of this are most evident in the newspaper articles detailing the environmental and health impacts of inexperienced small- and medium-scale miners on poor rural communities.

14 *Quarterly Report* for 31 December 2009; PanAust Ltd.

15 Asia Mining Congress Sustainability Awards 2010 – Community Development Initiative Award.

Box 1.1 Copper smelting – costs and benefits

Governments increasingly are asking mine operators to add value to minerals production by investing in downstream processing. However, the degree of processing chosen by a mine operator is a simple question of economics. Most minerals pass through several stages of processing, with the volume usually decreasing and the price per unit of weight increasing as further value is added to the raw mineral in the process ("beneficiation"). This section outlines the circumstances in which copper smelting is economically feasible and desirable.

- First, the processing may require particular inputs. If these are not available locally and can only be brought to the site at great cost the economic feasibility of smelting is negatively affected.
- Second, many smelting and refining processes need to be carried out on a large scale if they are to be economically viable. Therefore, small- or medium-sized ore deposits often cannot support the establishment of a costly capital-intensive processing unit.
- Third, logistics may argue against processing. Semi-fabricated products of copper, for example, need to be produced relatively close to their markets, since the buyers, who are anxious to keep their inventories low, do not accept long delivery times. A large part of the world's capacity for semi-fabricates of non-ferrous metals has migrated to China and other East Asian countries, as a result of the dramatic increase in demand in this region.
- Finally, market conditions and uneven expansion of capacity at different production stages often mean a large part of the overall profit is made at a particular stage in the supply chain.

In the case of copper, as well as other non-ferrous metals, the existence of non-integrated smelters has led to an almost permanent situation of excess smelting and refining capacity globally relative to mining capacity. The reasons for this are mainly historical. Smelters have often been established close to mines but, when the mine closes, the smelter often stays open, managing to survive since the initial investment has been paid off and production costs are relatively low. Many such smelting facilities exist in the Asia Pacific region as a legacy of previous mining activities, and have been turned into custom smelting facilities. Close to half the world's copper output leaves the mine in the form of copper concentrate and is sold to non-integrated smelters. *Accordingly, smelters and refineries operate on very small margins.*

However, in recent years large new smelters have been established in countries such as China where, because of their location in a huge domestic market, they enjoy a competitive advantage. This advantage is often further reinforced by higher import tariffs on unwrought metal (copper cathodes) than on (copper) concentrates and by lower capital costs. It is estimated that the cost of copper capacity for a Chinese smelter is around US$2,500/tonne, as compared with a "Western" smelter of US$6,000/tonne. *This means that, for the last two decades, any company opening a new copper mine has usually not chosen to build a smelter unless, for some reason such as transport costs, it would be clearly unprofitable to sell copper concentrates.*

In summary, the return on capital is low for most smelters and is expected to remain so. From the point of view of a developmental impact, it must also be emphasized that smelters are extremely capital-intensive operations that generate little employment. In addition, the very large smelters only seen in huge domestic markets such as China bring with them other less desirous impacts on the environment and immediate surroundings.

Particularly in the last decade, smelter/refinery operations have seen their share of the copper value chain significantly eroded. As a proportion of the overall "value added", the proportion going to the operator of a smelter/refinery as compared with a miner has fallen from 32.5% in 1998 to 9% in 2009 (see Figure 1.5). It is precisely because of the substantial smelter capacity increases and resulting lower capacity utilization of smelters that the share of value has fallen so dramatically. These trends were robustly debated at the 24 February 2011 workshop in Vientiane.

Figure 1.5: Falling value of smelter/refinery in copper value chain (1998–2009)

Source: CRU Analysis, Copper Concentrates Service.

NOTE: Smelter/refinery share of copper value based on typical contract treatment charges and refining charges, Pacific Rim basis, plus any applicable price participation. The treatment charges calculation assumes a 30% copper concentrate (29% payable). Smelter/refinery revenue includes average cathode premia, cif Japan.

1.6 Profile of Lao Sanxai Minerals Co. Ltd (Rio Tinto/Mitsui)

Lao Sanxai Minerals Co. Ltd was established following the signing of an agreement with the government of the Lao PDR in 2009. Lao Sanxai Minerals is jointly owned by Rio Tinto (70%) and Mitsui (30%). The agreement covers an area of 484 km^2 in the Sanxai District, Attapeu Province and Dakchung District, Sekong Province, of the Lao PDR. The project is a greenfield bauxite exploration project and as such is at the earliest stage of project assessment. Field activities commenced only in February 2010.

Rio Tinto is an international mining group headquartered in the UK, combining Rio Tinto plc, a London and New York stock exchange-listed public company, and Rio Tinto Ltd, which is a public company listed on the Australian Securities Exchange.

Rio Tinto's business is finding, mining and processing mineral resources and their activities span the world. Major products are aluminium, copper, diamonds, energy (coal and uranium), gold, industrial minerals (borax, titanium dioxide, salt, talc) and iron ore.

Rio Tinto is a member of ICMM, has participated in country case studies in Peru and Chile (for selected findings, see Box 1.2) and has supported the socio-economic analysis of the mining sector undertaken for this report. However, the exploration program at Sanxai is at an early stage and it is not possible to accurately estimate what the socio-economic contribution from this project may be until more exploration has been undertaken.

Box 1.2 Avoiding the "resource curse" – lessons from ICMM country case studies

Many of the critical propositions about mining from the literature of the past 10–15 years provide alarming statements about the impact of mining. But they fail to explain the differences in outcomes between those countries that have suffered from the "resource curse" and those countries that have not. In some countries, natural resource endowments have undoubtedly contributed to long-term sustainable and broad-based socio-economic development, but how did these countries avoid the problems that are now so widely perceived?

One highly simplified answer to this question is set out below. It highlights two of the most common antidotes to the "resource curse" – the importance of pursuing sound macroeconomic policies and not succumbing to rent-seeking behaviour.

Approach 1: A simple macroeconomic perspective

Basic macroeconomic analysis tells us the discovery and extraction of natural resources should straightforwardly contribute to faster economic growth in low-income countries. However, mainstream macroeconomic theory has long recognized that the revenues from resource extraction can create detrimental macroeconomic effects. These include an appreciating real exchange rate ("Dutch disease"), increased volatility in some incomes, most notably public revenues, and the crowding out of some traditional economic activities. There are appropriate policy responses with which to eliminate or mitigate these negative effects and several countries have been successful in applying these. *But there is no assurance that all affected countries will actually adopt such policies and there are many countries that have failed to do so. When combined with weak governance the effect of such a failure can be highly adverse.*

Approach 2: A rent-seeking perspective

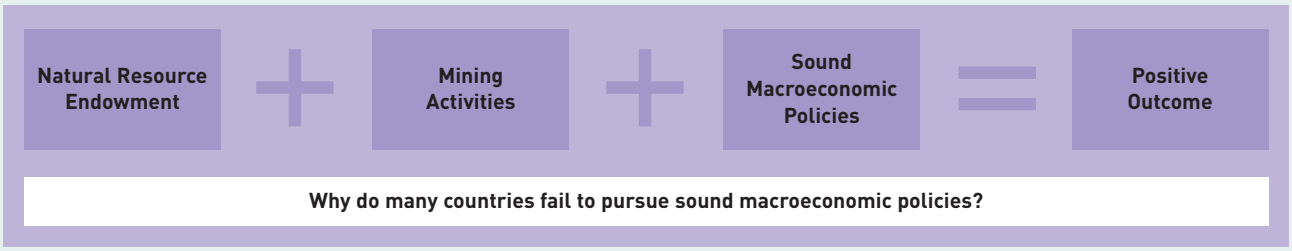
Proponents of the rent-seeking perspective on the "resource curse" have found statistical evidence that natural resource endowments often coincide with predatory governments and a high incidence of domestic conflicts and civil wars. This strand of analysis in its extreme form suggests that the exploitation of natural resources is inherently detrimental to the welfare of developing countries. The microeconomic conjecture is that natural resource abundance nurtures patronage, rent-seeking and factional politics, resulting in policy outcomes that restrain growth and provoke social and environmental unrest and distress. *However, this strand of analysis also fails to explain why some governments and societies have managed to prevent rent-seeking behaviour from taking hold.*

The common weakness of both of these two perspectives is that they do not explain *why* some countries have been able to safeguard a strong macroeconomic position *and* been able to head off predatory government behaviour.

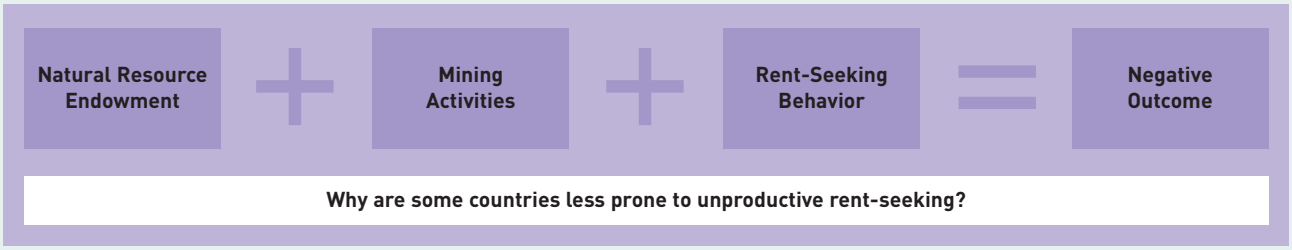
The short answer to this broad question is related to the *quality of the institutions, governance and policies of each host country* and to the manner in which mining investments relate to such arrangements. For example, do mining investments help to strengthen them where they are lacking or weaken them when they are strong?

I*n short, differences in outcomes rest with differences in governance, institutions and public policy processes*. These conditions and the interactions between different stakeholders – including governments, the extractive industries, organized interests of the state, social groups and international regimes and organizations – allow investments in the mining industry to render higher or lower socio-economic returns.

Macroeconomic Perspective



Rent-seeking Perspective



Source: ICMM publication *The Analytical Framework – The Challenge of Mineral Wealth: using resource endowments to foster sustainable development* (August 2006).

2

THE CONTRIBUTION OF MINING AT THE LOCAL LEVEL

2. The contribution of mining at the local level

This section provides a quantified assessment of the various project impacts (both positive and negative) of the MMG Sepon and PBM Phu Kham copper-gold operation at the local level. The contribution of mining to poverty reduction at the local level is normally fairly indirect. Modern mines are heavily capital intensive, so the direct employment from a mining operation will typically be small. However, effective use by the government of mineral revenues at the local level, combined with some of the partnership arrangements involving mining companies in local procurement and social investments, can provide significant indirect gains in relation to human welfare in the vicinity of the mine.[16] These activities are critically important in broadening the base of the inverted pyramid beyond employment.

2.1 Local content: Employment and dependents

One of the most visible economic impacts of mining operations on a community is the employment that it generates. Employment is generated directly through the creation of jobs within the mining operation in exploration, construction, mining and closure/rehabilitation phases. Taken together, these four stages can last anywhere from 10 years to centuries. There are jobs that are directly related to the mining operation but also additional indirect jobs.[17] Some of these jobs will be for contractors who are critical to the mine's activities. Their work may include the building of roads to reach the mine, the construction of new homes for miners and their families, and the businesses required to service these families. Despite all these opportunities, employment from modern mines will always be small as capital-intensive (rather than labour-intensive) technology is safer and more cost effective. Thus, when compared with the national workforce, as of 2009 at an estimated 2.9 million people, even the 30,000 or so jobs created (direct, indirect and induced employment) in the two large-scale mines total little over 1% of the national workforce. However, as only around 20% of the total workforce is engaged in activities outside of agriculture (580,000 people), the workers from the two large-scale mines comprise around 5% of those people working outside of agriculture.

Analyses of employment statistics from both companies show a gradual increase over time in ***direct employment*** in the mines (see Tables 2.1 and 2.2). These (direct) employees are staff on the companies' payrolls plus any contractors permanently based on site. In the case of MMG Sepon, direct employment started at 1,848 employees in 2004 and grew to a peak of 2,467 employees in 2008, after which it dropped to around 2,300 in 2010. From 2009, the number of these MMG Sepon employees who came from the local district area was around 35% of total employees (see Figure 2.1). The significance of this local employment for the provincial government is that the company pays US$3.5 million in salary taxes largely to them rather than to the central government. Data collected from MMG Sepon reports on ***indirect employees*** vary

16 The analysis has been deduced largely from public sources such as sustainability reports published on the companies' websites.

17 While analyzing the sources of the employees, the sustainability reports from both mining companies did not always make a distinction between direct and indirect employees.

Figure 2.1: Source of employees: MMG Sepon (number of employees)

Source: Company data.

markedly between 2004 and 2010.[18] In 2004, at the beginning of operations, there was an upward peak in indirect employment, encompassing construction workers and those clearing UXO. This figure dropped significantly in 2005, the decrease being due to construction ending and tightening liquidity that forced the company to cut capital and operating expenditures. In 2006, indirect employment grew gradually, peaking in 2007 due to construction at the mine. In 2008/09, the number of indirect employees decreased to the same level as in 2004–05 due to the completion of construction projects at the mine and the effect of the global financial crisis. ***This external shock had a major impact on workers from Vilabouly because of their employment in UXO, exploration and mining – areas that had to be cut back on for financial reasons*** (see Table 2.1). By 2010, indirect employment had rebounded to around 1,600 people. The average number of people employed is around 4,000 people, with this figure increasing to around 5,000 people during periods of construction.

Additional ***employment opportunities are also created by the social provision and social investments of the companies***. However, from 2005 onwards, the figures for such investment by MMG Sepon are available only for alternate years (and so exact annual variations cannot be established). These jobs are created, for example, when the mining company builds or maintains public facilities (schools, hospital, clinics, a marketplace, community housing) and typically employment goes to those living in the community. This kind of employment is referred to in Table 2.1 as "Contribution to employment by social provision". Initially, in 2005, the numbers of jobs created in this category in MMG Sepon were relatively high at 364, decreasing to 225 in 2007 and then decreasing further to 115 employees in 2009. This variation is probably explained by the initial focus on providing basic physical infrastructure, which is typically quite labour intensive.

18 Indirect employees are: (i) off-site contractors and staff employed by these contractors; (ii) employees working at the operation's suppliers and any contractor's suppliers or sub-contractors whose employment is attributable to business generated by the operation; (iii) employment generated in the region by community social investment activities, including local business development.

Table 2.1: Employment and dependent numbers: MMG Sepon

	Number of employees per year						
	2004	2005	2006	2007	2008	2009	2010
Direct employment	1,848	1,675	2,146	1,864	2,467	2,011	2,300
Indirect employment	3,545	1,700	1,839	3,155	2,456	982	1,600
Contribution to employment from Social Provision	–	364	–	255	–	115	–
Induced employment	13,483	9,348	9,963	13,110	12,308	7,770	9,750
Total employment/dependents	18,876	13,087	13,948	18,354	17,231	10,878	13,650

Source: The number of direct employees in 2007 is obtained from the Household Survey 2007. Indirect and direct employment numbers for 2008 and 2009 are calculated from data provided by MMG Sepon. We do not have the exact number for employment created by social provision in the years 2004, 2006, 2008 and 2010. However, it can be assumed they were of a similar magnitude (100–300 people).

Table 2.2: Employment and dependent numbers: PBM Phu Kham copper-gold operation

	Number of employees per year				
	2005	2006	2007	2008	2009
Direct employment	514	1,237	1,240	1,581	1,664
Indirect employment	–	80	2,000	2,000	2,000
Employment from Social Provision	–	–	–	–	–
Induced employment	1,285	3,292	8,100	8,952	9,160
Total employment/dependents	1,799	4,609	11,340	12,533	12,824

Although there are no hard numbers available on the expected employment rates for the near future, it is known that both mines are expanding their operations. MMG Sepon may enter another expansion phase in 2013 when employment may increase again to around 5,000 people. Since the expansion of operations typically requires a considerable amount of construction work, it is likely that this would also mean an increase in staff employment. However, it is too early to make a reliable estimation of future potential employment rates.

In the absence of reliable data, crude approximations on the ***induced employment*** effects of mining can be estimated only from existing empirical studies and this is the approach adopted here. Induced employment is generated in local communities as a result of the spending of wages on goods and services (both direct and indirect employees, including social provision). This includes spending on housing, food, clothing, leisure activities, personal services (such as hairdressing and cleaning), business services (such as banking), transport, utilities and public services (such as education and health care).[19] While employees are responsible for the majority of spending, the public sector may also provide some services, additionally boosting demand in the area. For example, MMG Sepon reports that the government has provided an additional 200 civil servants to help deal with the extra demand for public services in the area.

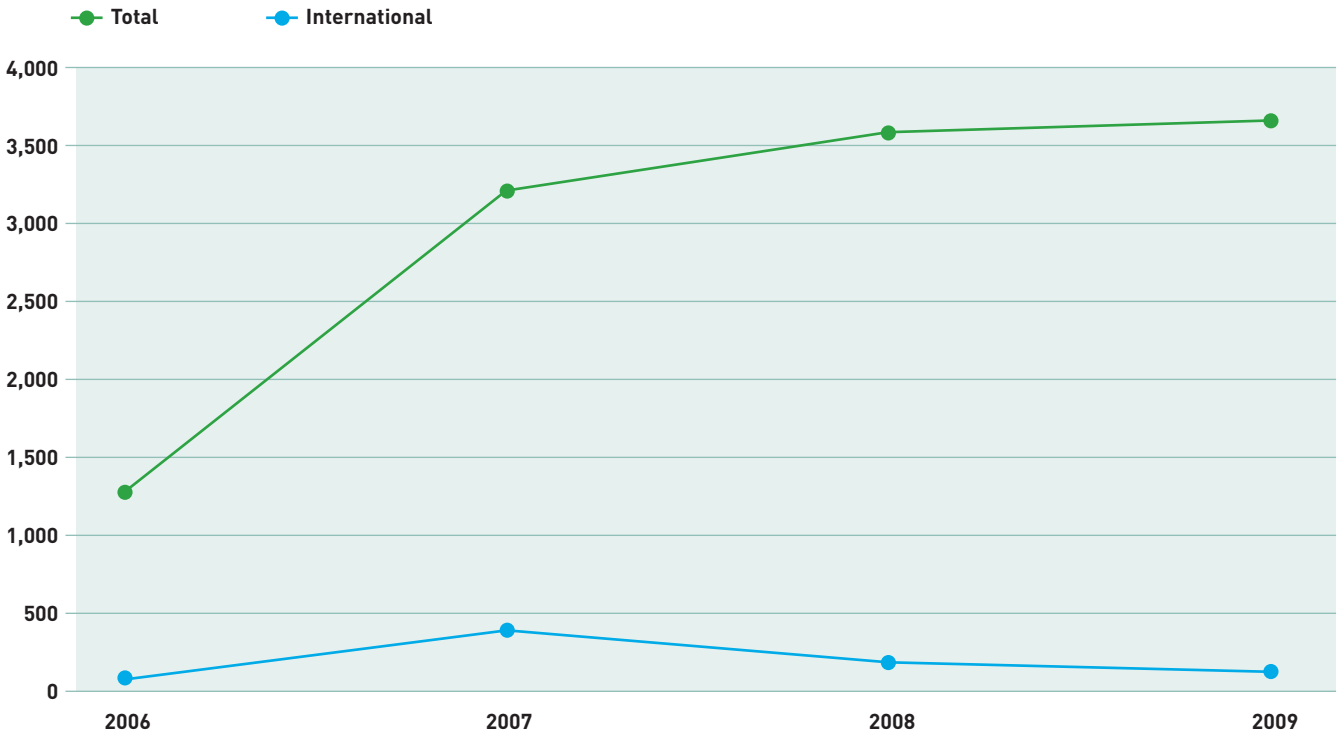
19 In a World Bank study, *Large Mines and the Community* (McMahon and Remy 2002), it is estimated that for every job created in a mine, 2.5 further jobs are created elsewhere. It should be noted that this figure can vary widely depending on the definition of a job created in a mine. However, 2.5 is a realistic, conservative number for low-income countries and this is the multiplier used in this report for the calculation of induced employment.

In the case of PBM, a much newer mine than MMG Sepon, the data in Table 2.2 shows a rapid increase in overall employment with the mine now engaging around 3,600 workers (directly and indirectly). Although the company only began in 2005 with a relatively small number of direct employees (514), employment grew rapidly to 1,664 direct employees by 2009, following the commissioning of the Phu Kham copper-gold project. In indirect employment alone, between 2006 and 2007 there was a large jump from 80 to 2,000 indirect employees, after which numbers stabilized. The increase of indirect employment in both mines can be explained by the expansion of mining operations, which requires a considerable number of temporary workers.

As a consequence of local land (and thus rural livelihoods) being required by the mines, both PBM Phu Kham and MMG Sepon are committed to giving ***preference to employing people from the communities and areas closest to their operations***.

Between 2004 and 2006, ***people living in the vicinity of MMG Sepon's operation filled more than 50% of job vacancies. In 2007, this rate started to decline, but seems to have stabilized at around 35% in 2008 and 2009***. Over the period 2006–09, there was an initial increase in nationally recruited employees, from 1,275 to 2,658, falling to 1,467 employees in 2010. These numbers represent a high proportion of wage employment in the local areas.

Figure 2.2: Source of employees: PBM (number of employees)



Source: Company data.

It is clear that the ***way in which jobs are sourced is equally important in ensuring that the people directly impacted by the mine have preference over jobs***. An instance of this was found at MMG Sepon where, initially at least, all local recruitment was channelled through the Community Relations Department to district representatives and village chiefs. This encouraged employment across all the geographical areas surrounding the mining operations. While this approach for reinforcing cultural norms and power structures is admirable, there are no hard facts about the extent to which the very poor or socially excluded were incorporated in the process. Although the mine's physical footprint is expected to expand and take over more of the land currently used by villagers, it is probable that employment opportunities will not increase proportionally with the operation's footprint. This will be a significant issue for the company to manage in the coming years, as expectations on the part of newly displaced people for jobs (and not merely financial compensation) will be high. As argued above, the proportion of employees at PBM coming from the local area Phu Kham is extremely high.

Between 2004 and 2009, the rate of ***international employment*** for both mining companies was stable at around 10% of total employment, the remaining required job placements being filled by domestic recruitment (see Figures 2.1 and 2.2).

In both mines, ***gender mainstreaming remains a challenge*** despite equal employment opportunities and anti-harassment policies. PBM has a positive discrimination strategy to ensure that minority groups and women are part of the workforce. Similarly, MMG Sepon in 2007 initiated an Opportunity and Equality Policy throughout the company. It is generally thought by the industry that the involvement of more women in mining would be good for the sector, since it could reduce the industry's typically macho (and thus more risk-taking) image and culture. This is because women are considered to be more measured in their approach to taking risks, which has obvious advantages for an industry that uses expensive capital equipment and where safety concerns are paramount. In practice, the percentage of female employees in the two large-scale mines has fluctuated from approximately 15% to 27% of the total workforce. This percentage seems to be higher when we look at the composition of the workforce among contractors. PBM statistics show that the number of female employees dropped from 27% in 2007, to 22% in 2008 and finally reached 19% in 2009. This is nevertheless a relatively high proportion of women; for example, in South Africa, mining companies are required to have at least 10% of women in the workforce.[20]

The MMG Sepon mine provides segregated numbers for the years 2004, 2005 and 2009 and over this time their numbers for female staff have varied between 15% and 19%. Besides this, the company sustainability reports suggest that women are still mainly working in the "softer" departments such as communications, accounting, social development and health and safety. Men, however, have a stronger presence in departments such as operational maintenance, exploration and excavation. It is noted, however, that both PBM and MMG Sepon have relatively high employment rates for female equipment operators (truck drivers for transporting the ore in particular), again possibly due to women being considered more risk averse and thus less likely to have accidents (see Box 2.1).

Box 2.1 Gender issues and mining in MMG Sepon

MMG Sepon has standard gender and diversity policies preventing discrimination in the workplace but does not have any specific policies aimed at promoting gender issues. Certainly its recruitment policy specifically states that it will hire all, regardless of gender, on an equal footing (with the exception that preference shall be given to residents of villages within the direct mining-impact area). Further, recruitment, at least in the mine's initial stages, was specifically to be based on "aptitude" rather than "formal education qualifications" – a tactic designed to bypass the lower levels of schooling of the Makong/Tri and one that has generally worked as planned.

In all consultation associated with the development of impact assessments for changes in mine plans, provision has been made for women to be involved in separate hearings. Similarly, in the 2007 and 2009/10 MMG Sepon household surveys, interviewers of household heads were instructed that, wherever possible, respondents should be alternately male and then female. However, most formal consultation groups in contact with MMG Sepon are dominated by males (with the exception of the presence in all groups of representatives of the Lao Women's Union), as is the membership of the Sepon Development Trust Fund (SDTF), the main source of community funding established by the company.

Further information on the gender dimensions of mining is provided in Annex A.

20 Minerals Council of Australia Chief Executive Mr Mitchell H Hooke said: "the statistics are stark – women comprise 18% of the minerals industry workforce, compared with a national participation rate of 45%. Women represent 3% of all employees at mine sites and minerals processing operations and indigenous women represent 12% of all indigenous employees". May 2007, Inaugural Women and Mining Symposium in Australia.

2.2 Local content: Procurement of local goods and services

Money spent by mining operations on procurement (purchasing and outsourcing) of goods and services from the domestic economy can often be considerable and is one of the most important ways in which the benefits from mining can filter through to the local economy (further widening the bottom of the inverted pyramid). Procurement by the mines can also play a major role in boosting local production and promoting the development of new industries and service sectors.

It is clear from the companies' sustainability reports that both mines prefer to procure goods and services from within the Lao PDR whenever possible. Data suggest that, in 2009, PBM and MMG Sepon were able to procure about 50% of their goods and services through national contractors.[21] In absolute figures, as the more established mine, MMG Sepon currently spends more than PBM, although this could well change in time depending on the local content policies of the firms. In the case of MMG Sepon, approximately 27% of procurement was national, the remaining expenditure being made abroad or going towards the payment of expatriate workers.[22]

Both mines showed considerable fluctuations in their procurement spend during the period 2005–2009, due to the markedly different periods of construction and operation. MMG Sepon started producing gold in 2002 and began copper mining activities in 2005. Prior to these dates, a considerable amount of local goods and services would have been consumed in constructing the mine. At MMG Sepon, local content expenditure is typically in the region of US$70 million per annum, but falls to US$53 million when fuel is excluded. A recent example of localization undertaken by MMG Sepon is the decision in 2010 to award its major logistics tender to a Lao company, Lao Freight Forwarder, for the first time. This contract is worth more than US$70 million over five years.

Although PBM expenditure seemed to be more stable in its expenditures on local goods and services between 2006 and 2008, at around US$20 million annually, there was a significant increase in 2009 caused by the commencement of the Phu Kham copper-gold operations. At this time, total expenditures increased to around US$200 million. Of this, around half was sourced from within the Lao PDR, mainly through power, fuel, consumables and transport logistics. Going forward, sourcing from within the Lao PDR is expected to increase substantially, with US$96 million already spent in the first half of 2010.

In the cases of both MMG Sepon and PBM, there is no evidence from discussions with stakeholders that this additional expenditure going into the local economy has increased prices at the local level: i.e. that it has caused a significant local Dutch-disease effect. This is actually quite surprising, particularly as the local economy before mining was largely based on subsistence farming and local markets were extremely undeveloped. Additional capacity in the local economy and access to other markets has probably prevented a localized mini-resource boom occurring. Notwithstanding this finding, it does not mean that localized inflationary pressures may not be a problem in the future if the productive capacity of firms is unable to keep up with the pace of demand. Similarly, we know from discussions held at Sepon that the level of technology and skills used in locally procured goods and services are relatively low. In time, this could be a constraint on building a local supply base around the mine.

These two points emphasize the importance of supporting the business environment and for the government to follow through on plans for infrastructure investment so that a more vibrant and dynamic local business sector can respond to demands for goods and services without driving up prices for all consumers (see Box 2.2). ***The implications for poverty reduction are important too, as the establishment of local markets in and of itself is likely to raise real income and living standards***. Local price inflation – were it to occur – could lead to increasing tension within communities, particularly between those in the mining cash-based economy and those still dependent on subsistence agriculture.

This is an issue worth monitoring by the companies. If it is not done already, they could include questions about the price of a basket of local goods in the household surveys as an easy way to monitor if local inflationary pressures arise. If the government or others wanted to get involved in supporting such a survey, then a comparison group with similar geographical and economic conditions and no presence of mining would be needed to provide the "control" sample, thus separating the effect of other factors on price changes in the mine-affected area.

21 Although neither company provides detailed information on expenditures, the type of goods and services include electricity, food, concrete, air conditioning services and UXO clearance among many others.

22 Based on an estimate that around US$70 million is spent per annum on goods and services in the Lao PDR and that the total spend has been around US$260 million during the past few years.

Box 2.2 Findings from a GIZ study on FDI – Small and Medium-sized Enterprise (SME) linkages

In 2007, a study by the German development agency GIZ looked at the MMG Sepon mine (as well as Lao brewery). It identified a number of constraints that SMEs were facing in the Lao PDR. In 2011, these findings are still relevant for understanding the context in which the mines' local content strategies operate (the following is a summary of the key findings).

The contribution of FDI to the national economy of the Lao PDR is substantial, something highlighted by these two case studies. The issue is how the benefits, either realized or potential, can be enhanced by larger domestic firms and SMEs. Positive spillover impacts of FDI do not just happen; they require a number of structures and processes (policies, adequate regulations and support services) to be in place. Furthermore, interventions (by donor, government or private sector) to promote SME growth and hence overall economic growth will need to be both general and industry specific. SMEs benefit from FDI in these two cases due to the expenditure on local goods and services, as well as increased spending due to higher incomes and more Lao nationals being employed as a result of these operations.

An Enterprise Baseline Survey in 2005 (GTZ-HRDME Program in the Lao PDR, Enterprise Baseline Survey 2005 Vol. 1 and 2, May 2006, pp. 108ff) identified a number of challenges and constraints that affect the SME sector in the Lao PDR. Based on the responses by 390 interviewed entrepreneurs from four provinces (Vientiane Capital, Champasack, Luang Prabang and Luang Namtha), these challenges were:

- **Low levels of technology and small-scale production leads to limited competitiveness. This is compounded by lack of technical skills in staff, limited management knowledge and skills and a high-risk business-operating environment.**
- **Insufficient support regarding information on markets, marketing, products, competition, production standards and quality, technology options, market opportunities and business strategies.**
- **Inadequate access to financial services (long-term credit for investment in particular is restricted for SMEs).**
- **Lack of knowledge of existing laws and regulations.**
- **Underdeveloped inter-business linkages (value chains, clusters and SME linkages and with larger companies.**
- **Cumbersome legal and regulatory environment for business – it is complicated and not "business-friendly".**
- **Underdeveloped customer (or civil) service attitudes and approaches by government agencies.**

These factors together pose a challenge to the development of SMEs and private-sector development as a whole. They indicate – at the same time – areas in which remedial interventions should take place.

GTZ (German Agency for Technical Co-operation) (2007)
FDI-SME Linkages: Two Case Studies.

2.3 Local content: Human capital development (training)

Training opportunities offered by a company can often be an important part of its local contribution. These benefits often extend to the employees of key suppliers and typically come in the form of vocational training (directly job related). The value to society can be assessed as significantly greater than the costs incurred by the companies themselves because of several factors including the transfer of skills from the trainees to other family members or friends.

MMG Sepon and PBM both began providing training and education schemes for manual labourers, managers and technical staff within two years of starting operations (2004 and 2007 respectively). Some professions require specific training or skills; therefore, these educational programs are only accessible to those practitioners actually working in specific posts. For example, there are project-management training courses specifically targeting high-level managers, and training in woodworking designed for technical staff such as carpenters. Some training is generic and is accessible to anyone working for the company, such as language training (Lao or English).

Training and educational programs have been gradually expanded over the years to focus on: (i) English and Lao language training, (ii) literacy and numeracy training, (iii) cultural awareness training and (iv) safety training, as well as several technical educational programs for specific positions within the companies. Local people do benefit from these training programs, probably to a greater degree when they are directly employed by the mine than as indirect workers, because of the tendency to keep higher skilled jobs in-house. In 2006, MMG Sepon added generic pre-employment training. Both companies show an increasing number of training hours for their staff every year; however, the data are not segregated by specific training topics or by numbers of trainees.[23]

MMG Sepon shows an increase from 48,634 hours of training in 2004 to 139,960 hours in 2007 (for the last two years, no data are available). In 2010, the cost of this training was budgeted at around US$6.4 million (see Table 2.3).

23 Both mines note that they have individual performance reviews, yet no data are available on these reviews.

Table 2.3: MMG Sepon training expenditure (2005–2009 actual and 2010 budgeted expenditure year to date) – $US

	2005	2006	2007	2008	2009	2010
Processing – Training	327,506	–	–	–	–	–
Total Training – Management	–	857,748	1,485,107	2,070,206	1,656,091	4,611,393
Total Training – Professional Development	–	161,728	449,531	494,565	135,245	866,731
Total Training – Maintenance and Apprentices	–	148,889	551,549	795,247	565,828	925,701
Total spend per annum	327,506	1,168,365	2,486,187	3,360,018	2,357,164	6,403,825

Table 2.4: Safety indicators and index figures: MMG Sepon

	Year of measurement					
Safety indicators	2004	2005	2006	2007	2008	2009
Total Recordable Injury Frequency Rate	–	14.22	5.98	5.4	7.3	12.36
Lost Time Injury Frequency Rate	0.81	0.93	0.72	1.15	1.10	0.95
Significant Safety Incident	0	0	N/A	N/A	20	0

PBM also places great emphasis on training and, in 2008, 65,000 hours were spent on training, increasing to 102,043 hours in 2009. PBM data reflects a decrease in expenditure from US$2.5 million in 2007 to US$1.2 million in 2009.[24]

In recent years, there seems to have been a trend towards extending training beyond those areas that provide obvious benefits to the company to training that aims to provide longer-term benefits to employees after mine closure. MMG Sepon in particular now pays great attention to increasing the skills and knowledge of people from within the affected community by providing business and management training. PBM's educational programs emphasize safety, "zero harm" and technical skills training. The PBM technical traineeships comprise a three-year program (20 positions each year) in mechanical, fitting and electrical trades, in conjunction with Thai (Pathumthani) and Lao technical colleges.

PBM runs a formal succession planning process (to replace international workers with national staff) and management meets three times each year to assess the potential of Lao and expatriate employees. Through this process, 47 Lao nationals have been identified as having high potential. These employees have then been given individual training programs to assist in their development in order to facilitate the goal of replacing expatriates with Lao nationals.

Both companies explain that all of the training and education schemes are in place to improve safety, reduce turnover and improve the effectiveness and efficiency of staff. While it is inherently difficult to measure the "effectiveness" of spending on training, one measurable indicator found was for personal and environmental "safety" at MMG Sepon (see Table 2.4). Personal safety is measured in the Total Recordable Injury Frequency Rate (TRIFR) and the Lost Time Injury Frequency Rate (LTIFR) indicator.[25] The Significant Safety Incident (SSI) measures the impact incidents have on the environment.[26] It can be seen from Table 2.4 that in MMG Sepon, the evidence on the effectiveness of training based on such evidence is somewhat mixed.

24 PBM and MMG Sepon present fragmentary information on the number of graduates. In 2006, Sepon had 246 staff studying English and, in 2008, a total of 84 trainees. In the same year, PBM had 40 trade trainees and 46 graduate students. In 2009, PBM provided leadership training for 150 employees, 40 employees received training in trade skills and another seven employees were trained to recognize "hazards". Finally, in the same year, 15 students graduated from the in-house training centre and 30 students completed an advanced English training course.

25 TRIFR is the total number of recordable injuries per million working hours. "Recordable injuries" are lost time, restricted work and injuries requiring medical treatment. First aid injuries are not included. LTIFR is the Lost Time Injury Frequency Rate, which means the total number of hours lost to injuries per million working hours.

26 At OZ Minerals, an SSI was defined as an incident that has an actual or potential consequence rating of Level 4 or above. This rating is determined using OZ Minerals risk matrices, with the highest consequence ranking available being Level 5.

PBM recorded 22 Level 1 and Level 2 incidents during 2009, a reduction from 25 in 2008. These incidents are classified as "slight" (first aid injuries incurring a minor health impact) or "low" (medical injuries that have no risk of permanent injury), or environmental incidents such as minor hazardous spills or emissions.[27]

2.4 Local content: Enterprise development

Money spent by mining operations on procurement of goods and services from the domestic economy can play a major role in boosting local production and promoting the development of new industries. It can also improve the performance of the mine with respect to economic and social impacts at the community level, thus widening the bottom of the inverted pyramid.

During 2009, PBM put considerable effort into enterprise development and local content through their award-winning Livelihood Improvement Program. The need for this initiative was identified during feedback from the village development committee (VDC) and the 2008 social and economic and health survey, in which communities stressed the lack of business opportunities for local people. The company now provides information outlining vegetable demand for the following month and has set up a system through the VDC for buying produce from local farmers. In addition, agriculture and aquaculture training has been given to local people. To help in financing new businesses, the company partnered with the Lao Women's Union to introduce and promote a Village Savings and Credit Fund.

Table 2.5: MMG Sepon supplier development project (income earned by suppliers), 2007

Business area	US$
Piggery (pork supply to MMG Sepon camps)	82,000
Vegetables (supply to MMG Sepon camps)	127,00
Sewing geological survey bags and bedding (supply to Oxiana)	26,000
Silk and cotton production	1,000
Weaving	5,000
Cassava	1,000
Mulberry trees	100
Cattle	2,000
Goats	14,000
Fish and frog farming	51,000
Laundry	19,000
Grounds keeping	5,200
Bar and shop	57,700
Total	391,000

Source: Oxiana Sustainability Report (2007).

27 See the PanAust *Sustainability* Report (2009: pp. 28 and 66) for further information on the full range of incident classifications related to health and safety, environmental, social/community, security, regulatory, production and financial issues.

At MMG Sepon, local businesses are supported either through direct local contracts for mine-related services (i.e. bars, housekeeping) or local business development through training, support to small business groups, seed funding (micro-finance) and the support of local suppliers (see Table 2.5). The large camp contracts with international operators include clauses about maximizing purchases from within the local community and working in consultation with the Community Relations Department of MMG to develop and implement a local purchasing program.

If the mines, together with government and donors such as the International Finance Corporation through their Business Linkages program, wanted to increase further the competitiveness of local firms and encourage increased business development, a good starting point would be to undertake a gap analysis. Such a study would look at where the constraints to doing business lie in the local areas, delving more deeply into areas including the skills base, take up of technology, limited access to finance, limited business planning and the procurement strategies of the mines themselves (bundling up small contracts into something more sizeable or unbundling large contracts into a more manageable size – based on the capacity and absorption of domestic suppliers).

2.5 Regional development planning: Social and infrastructure provision

The positive impacts of a mining operation on the local economy and society also include its provision of social facilities. The companies in the Lao PDR are required to provide community development funds to the district governments to build and/or maintain schools, roads, hospitals, clinics, police stations and administrative building. These activities are in part, a means to cope with the influx of outside workers to the mines and their families and also to compensate for increased noise, dust and traffic levels. Despite these concrete efforts the government (and companies) appear to have missed an opportunity to include the mining sector in regional development planning, particularly on infrastructure and development plans. This is in contrast to the close planning relationship on revenue management.

Both companies have an annual budget for social and infrastructure provision, which is fixed at a certain rate as specified in the Mineral Exploration and Production Agreements (MEPAs) signed between the companies and government. These agreements regulate exploration and mining within a defined area (see Annex B and Annex C for further information on exactly how these funds were spent). MMG Sepon's annual trust fund budget is US$500,000. In 2006/07, MMG Sepon overspent this amount but this overspend was compensated for in subsequent budgetary cycles of the trust fund. At PBM, the Community Development Fund commitment was US$100,000 in 2007, US$200,000 in 2008 and US$300,000 per annum thereafter.

During the first two years of operation (2007–09), PBM faced a number of issues in spending the funds set aside for social and infrastructure provision, as had MMG in earlier years. The biggest problem faced by both companies in the early years was the capacity of the communities to absorb the funds. In addition, the governance structures that required the signoff of the provincial governor on budgets and contracts were found to be unwieldy and required time to change. Any shortfalls in spending that occurred in the early years are expected to be made up over 2010 and 2011. Beyond these community trust funds, the companies also spend a considerable amount on roads, donations and sponsorships.

MMG Sepon has three budgets available for community development:[28] (1) the SDTF, managed by the company and the district government, (2) the Social Mitigation Group Budget, managed by the Community Relations Department to address specific impacts of the project not covered by the SDTF, and (3) the Community Development Budget, managed by the Community Development Department to implement further livelihood development activities.

The SDTF provides the core of MMG Sepon's community investment approach and is the vehicle through which MMG Sepon supports the development plans of Vilabouly District. The basis of the SDTF is to assist, not replace, the district government in providing basic government services in education, health, agriculture, infrastructure and improving living standards for people in Vilabouly District and surrounding areas. A combined board of Vilabouly District officials and MMG Sepon officers administer the trust fund, with around US$500,000 invested every year (see Table 2.6). The board allocates this funding to specific sectors (agriculture, health, education, industry, communications, transport and tourism) in accordance with five-year district and/or provincial government development plans. The process whereby the Trust Fund is administered is depicted in Figure 2.3.

As can be seen in Figure 2.4, a sizeable portion of spending between 2004 and 2008 went on physical infrastructure (41%), with local enterprise development and education the next largest priority areas at 18% and 17% respectively.[29]

The largest portion of MMG Sepon's community budget spend each year is on physical infrastructure, varying between 29% and 58% of the total. There are no clear trends within and between the five different categories over the five years of reporting. Total expenditures fluctuate somewhat year by year, although at MMG Sepon there seems to be more continuity in expenditure.

Figure 2.4: Breakdown of average expenditure on social and infrastructure provision: MMG Sepon, 2004–08 (%)

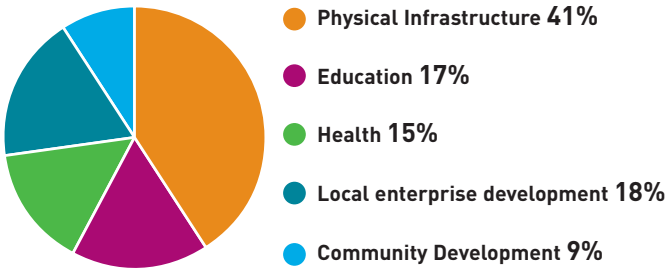


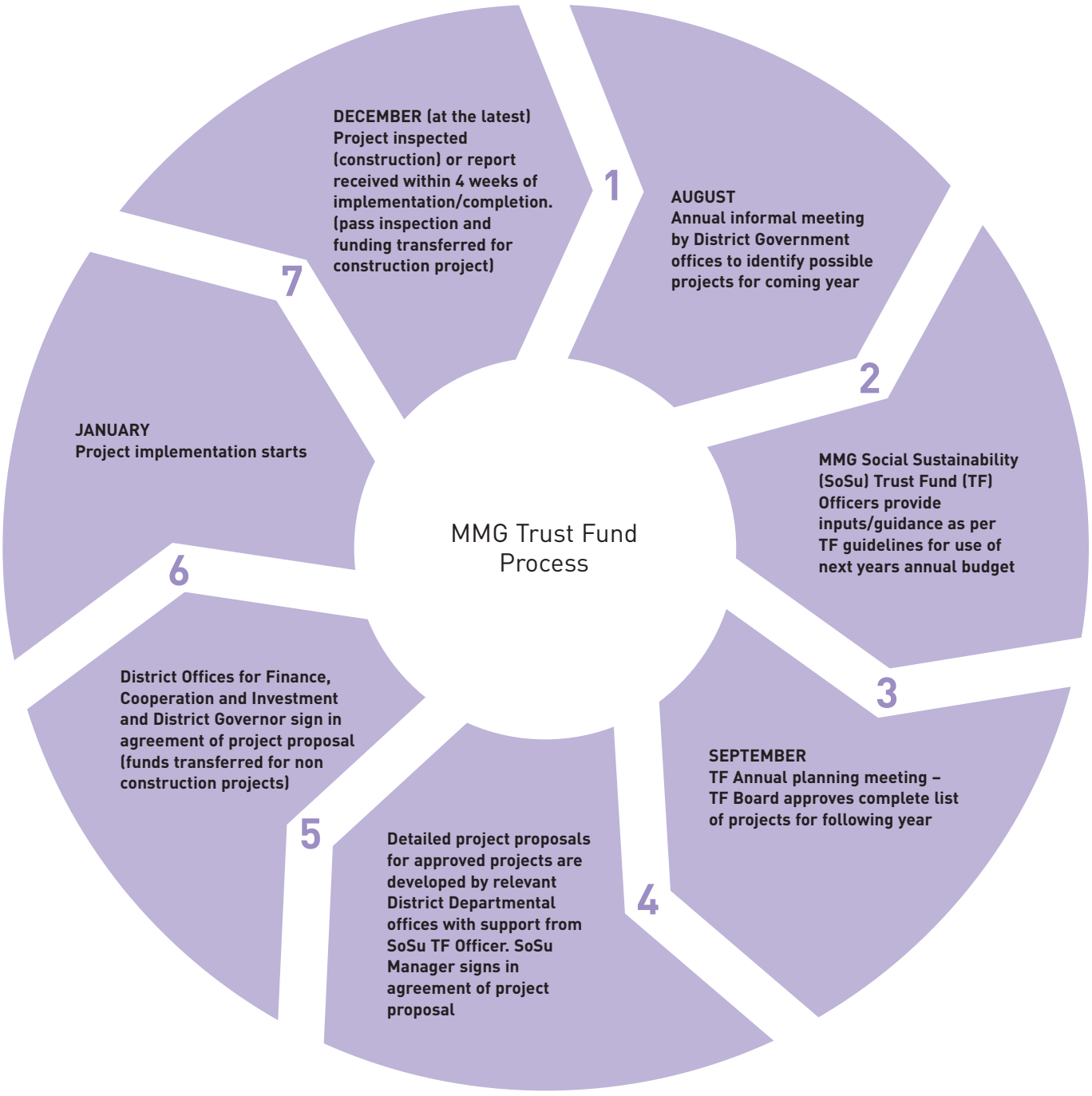
Table 2.6: Social Development Trust Fund actual expenditure: MMG Sepon (US$)

	Year of expenditure (US$)						
	2004	2005	2006	2007	2008	2009	2010
Agriculture	46,955	106,390	57,264	90,976	96,048	56,879	4,600
Education	3,123	65,714	72,985	146,197	65,441	89,551	17,000
Health	17,163	28,977	87,238	65,676	56,390	90,496	6,000
Industry and Handicraft	46,131	73,098	66,700	97,000	97,500	93,500	–
Communication	4,840	95,341	64,584	58,380	146,910	117,501	166,000
Tourism	5,669	1,740	27,820	40,014	26,900	30,199	9,000
Administration	1,263	11,188	422	35,317	1,390	21,469	15,000
Other	–	–	–	–	–	–	194,444
Total	125,144	382,448	377,013	533,560	490,579	499,594	412,044

28 ESL (2010) *Case Studies of Local Government Engagement in Mining and Hydropower Sectors of the Lao PDR.*

29 Expenditure on Physical infrastructure is captured within several of the categories listed in Table 2.6, including Agriculture, Industry and Handicraft and Communication.

Figure 2.3: **Decision making cycle of MMG Social Development Trust Fund**



Since 2003, and up to and including 2010, nearly US$3 million in the trust fund alone has been spent by MMG Sepon at the local level through their community programs (see Figure 2.5).

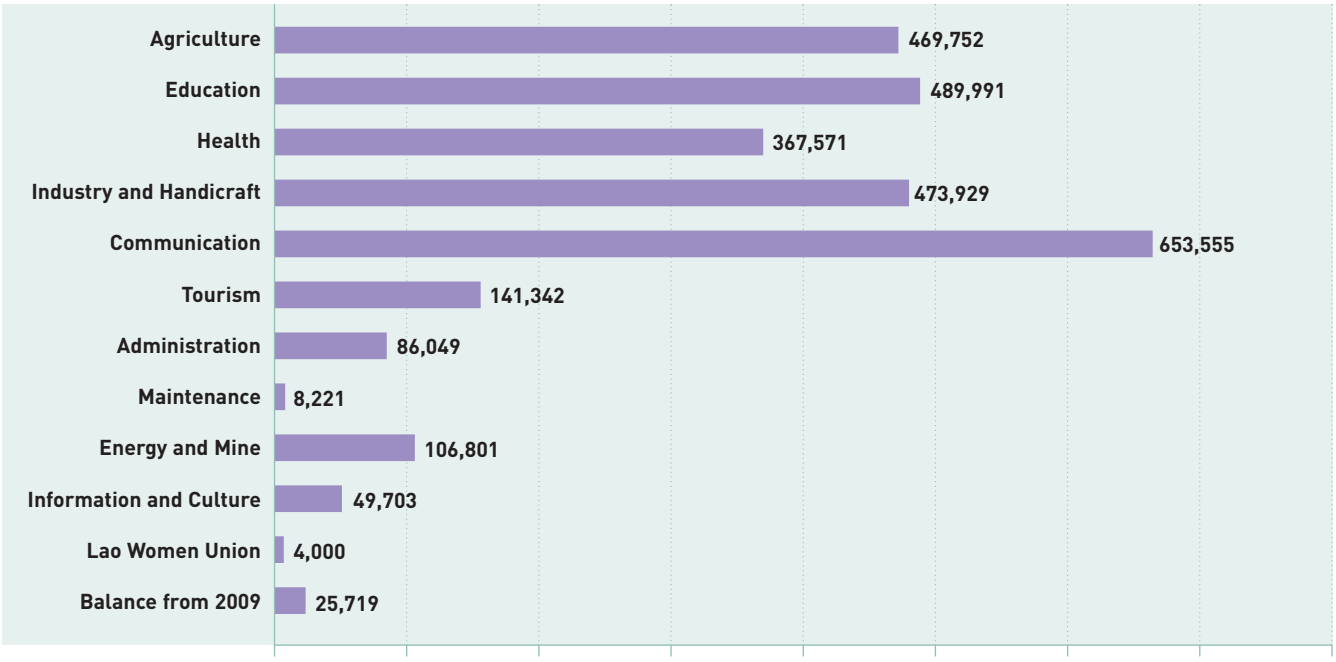
In addition to the SDTF, the Social Mitigation Budget has, on average, provided between US$100,000 and US$500,000 per annum in recent years on four projects (for an example, see Box 2.3). The company spends around US$4 million per annum on community relations.

Box 2.3 Examples of the Community Participatory Planning Project in MMG Sepon

A Community Participatory Planning Project is currently under way in the villages in the Greater Project Development Area in Sepon. This project is designed to assess the needs of entire communities, as well as groups within these communities (including women, youths, elders and ethnic groups). The outcome of this participatory planning project will be a variety of community-run development initiatives that MMG Sepon Social Sustainability then aims to support through its community development programming.

In addition, the results of the company's biennial household surveys are incorporated into the department plans. The last one was conducted in December 2009 and January 2010. This covered one town (Boungkham), 33 villages and 2,254 households comprising 12,735 people living in the Vilabouly District around the MMG Sepon gold and copper mine. Coverage was slightly greater than in previous surveys, including Namchalo and Nonsoung.

Figure 2.5: Summary of Trust Fund Project expenses (US$): MMG Sepon, 2003–10



PBM also conducts biennial surveys to check on the social, economic and health status of affected communities and the results are used to identify and prioritize community development programs for the coming year. An independent research firm undertook the most recent survey in 2008, the fourth such survey to date, and another was planned for 2010.

For PBM, physical infrastructure is also typically the highest outlay: from their total budget of US$279,204 in 2009, US$164,969 was on infrastructure. This is a result of the mine being established relatively recently and the high basic infrastructural needs of the surrounding communities. The proportion of the total annual budget spent on building roads, water supply systems and agriculture-related projects was 62% in 2006 (US$184,278) and 59% (US$164,969) in 2009. Over time, it would be expected that this pattern of expenditure will change, with increasing emphasis on maintenance expenditure and, possibly, local enterprise development initiatives through the Livelihood Improvement Program to support the broadening of local economic opportunities.

In PBM, between 2006 and 2009, the second-highest spending priority after physical infrastructure is education. Education projects received 70% of the total Community Development Budget (US$19,000) in 2007 and 56% (US$67,037) in 2008. Although, in 2006, the percentage spent on education was lower (28%), the absolute amount of money allocated was much higher (US$82,452). A similar situation occurs in 2009, where the 19% spent on education amounted to US$53,433 (see Table 2.7 and Figure 2.6 for more details).[30]

Box 2.4 Community engagement strategies

MMG Sepon meets on a monthly basis with its Community Information and Consultation Committee, made up of representatives (heads of village) from SPDA villages, district government, women's unions, MMG Sepon community relations staff and the General Manager of MMG Sepon gold and copper mine. The committee routinely gives formal notice of issues or operational activities to the local community and is also used as a tool for formal grievance resolution and compensation negotiation. Quarterly meetings are also held between MMG Sepon and the government (district, provincial and national representatives) in which MMG Sepon provides an update on operations and reports on monitoring indicators. Monitoring and baseline surveying tools, such as the household survey or village census, are also devices to gauge feelings within the community.

Figure 2.6: Breakdown of average expenditure on social and infrastructure provision: PBM, 2004–08 (%)

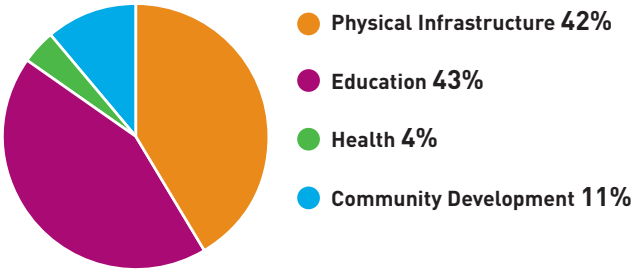


Table 2.7: Expenditure on social and infrastructure provision per year: PBM (US$)

	Year of expenditure (US$)			
	2006	2007	2008	2009
Physical infrastructure	184,278	5,000	30,991	164,969
Education	82,452	19,000	67,037	53,433
Health	24,528	–	4,217	13,986
Local enterprise development	–	–	–	–
Community development	7,110	3,000	18,313	46,816
Total known expenditures	298,368	27,000	120,558	279,204

30 The numbers for 2009 differ slightly to page 44 of the PanAust *Sustainability Report* for 2009 by around US$6,000.

Box 2.5 The impact of mining on provincial budgets

Based on our discussions with district government staff and the budget data available, it appears that provinces with large-scale investments, whether in hydropower or mining, receive fewer resources transferred from the central government than do those provinces without such investments (and so less expenditure is allocated centrally per person). This is not an uncommon finding in countries where the government believes that people benefitting from jobs and other economic opportunities created by resources (be it hydro or minerals) are more fortunate than others and subsequently require fewer transferred resources from consolidated revenue. The data in the case of the Lao PDR are, however, not wholly consistent and data covering longer periods are not available (nor is anything known about the costs of providing public services in different geographical locations).

Accordingly, it is not known whether the observed differences really represent a trend and, if so, whether this difference appeared when the investment occurred or whether it was already in place. As noted, it could be because it is more expensive to provide services or there is a greater development need in Attapeu (#1) than Savannakhet (#17). Therefore, it is not possible to state with certainty that the observed differences reflect a policy decision by the government. Nevertheless, Savannakhet Province, although it receives more in return from the central government than it collects, has consistently ranked last among all the provinces in terms of government expenditure per capita. As can be seen in the table below, other provinces with large investment projects also received below average government expenditure and all ranked in the bottom half. It is difficult to draw data for the Phu Bia Mine because of changes in administrative zoning from Xaisomboun Special Zone to Vientiane Province in 2006. The net effect of this policy on districts far from the mines but within the same province could be doubly negative – they are located too far away from the mine-affected area to benefit from the jobs, additional infrastructure and community development funds of the mining companies but are subject to the same "mining-penalty" that reduces central government transfers.

2007–2009 Annualized provincial data

	Revenue/capita	Expenditure/capita	Rank (1 receives most)	Large projects
VTE cap	0.546	0.553	12	Mine
P'saly	0.071	0.580	9	
Lntha	0.162	0.936	2	
O'xai	0.084	0.714	5	
Bokeo	0.203	0.735	4	
L/P	0.197	0.492	14	
H'phan	0.148	0.603	7	
X'bouli	0.136	0.544	11	
X K	0.114	0.655	6	
VTE Pro	0.278	0.586	8	
Bkxay	0.189	0.563	10	Hydro
Khamm	0.287	0.526	13	Hydro
SVKhet	0.232	0.330	17	Mine
Salavan	0.104	0.383	16	
C'sak	0.279	0.416	15	
Xekong	0.182	0.844	3	
Attapeu	0.294	1.094	1	

2.6 Poverty reduction: Comparing local and national economic and social trends

It is possible to make comparisons between local- and national-level economic and social development indicators to assess whether the mine-affected areas (economic and social) are performing better than at the national level.[31] In the absence of more comprehensive resources, one way to present the results is to calculate the ratio of indicator values at the local level to the corresponding indicators at the national level.

In undertaking the analysis to compare local and national economic and social trends, we were not able to conduct as rigorous an analysis as was possible in other countries.[32] The contribution from large-scale mining has only really become significant since 2005, so there was little value in using the data from the most comprehensive source – the Lao Expenditure and Consumption Survey (LECS) – as the most recent of these surveys was in 2002/03.[33] The alternative was to use available administrative and other generic data that were available at both local and national levels.

We recognize also that the approach taken is not the most reliable or comprehensive way to draw comparisons between mining-affected areas and non-mining-affected areas because the initial conditions in the different locations may be quite different. In particular, mines are often located in rural and mountainous areas that have few other economic opportunities for the people who happen to live there.[34]

Notwithstanding the above, our simple analysis found that it is only in two categories of indicator where the local economic and social situation score is better than the national level (see Figure 2.7 for MMG Sepon and Figure 2.8 for PBM).[35] One of these instances was around MMG Sepon's operations area, where the percentage of combined gross enrolment for primary, secondary and tertiary schools is 70% while, at the national level, enrolment is 60%.

The second instance was in the communities around the PBM Phu Kham copper-gold operation, where the adult literacy rate for those aged 15 years and over is 87%, compared to 73% at the national level. The reasons for these enrolment and attainment rates being higher than the national average are not known. However, it will be interesting to see if, for example, in five years' time the presence of the mine has spurred larger numbers of young people into education, recognizing that jobs are available for the better educated. Ironically, it could be that the recruitment preference system actually deters children in mine-preferred villages from continuing education. At the high-school level, enrolments as a percentage of all enrolments are well over 40% in Boungkham and well over 20% in outer Lao-speaking areas, but only around 16% in Lao-speaking SPDA and below 10% among SPDA Makong/Tri speakers (especially of females).[36]

The MMG Sepon information reveals that about 49% of the children in the area under the age of five are under-nourished while, at the national level, this percentage is 32%. The percentage of people with adequate access to clean water and sanitation facilities has increased to 58% in Sepon, but this is compared with 75% at the national level. In the PBM locale, life expectancy is 48.5 years, while at the national level this figure is 62 years, and the number of doctors per 100,000 people is 30 for the district and 40 at the national level.

Figures 2.7 and 2.8 illustrate how economic and social indicators at the two mining sites compared with national-level indicators, where data was available.

31 As shown in Annex E, this section draws upon a variety of variable sources from over a five-year period.

32 For example, in the Ghana Country Case Study we used the Ghanaian Living Standards Surveys and in Tanzania the Household Budget Surveys.

33 The first LECS was conducted in 1992/93, the second one in 1997/98 and the third in 2002/03. During the most recent survey, 49,970 people in 8,092 households across 540 villages were interviewed. The LECS covers a wide range of subject areas related to the social and economic situation. However, when the latest LECS results are released, this could provide a reliable basis for assessing in a more robust manner the true contribution of mining to social and poverty outcomes.

34 An ideal comparison would look at areas that have similar initial conditions and using a double difference (before and after) methodology to ensure the comparison is appropriate and results more reliable.

35 The ratios of indicator values at the local level to the corresponding indicators at the national level are presented in histograms. They show that where the values are greater than 1, the local economy is performing better than at the national level and if the values are less than 1, the local economy is performing worse than the country, as a whole, on that particular economic and social aspect.

36 MMG Sepon Household Survey 2009, 2nd Draft Report.

Figure 2.7: Comparing local with national economic and social performance at MMG Sepon

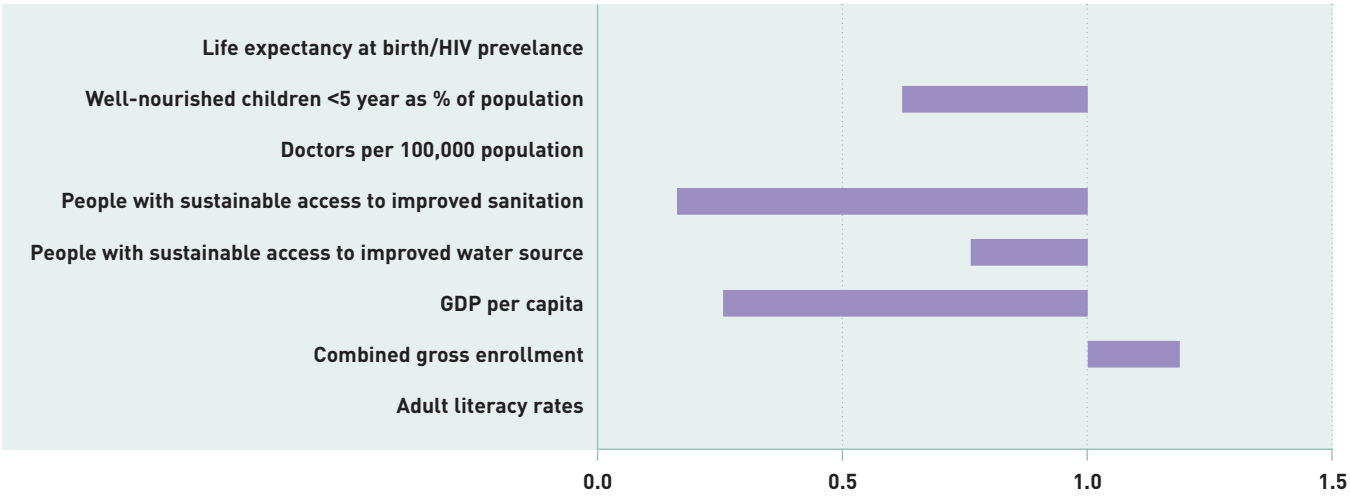
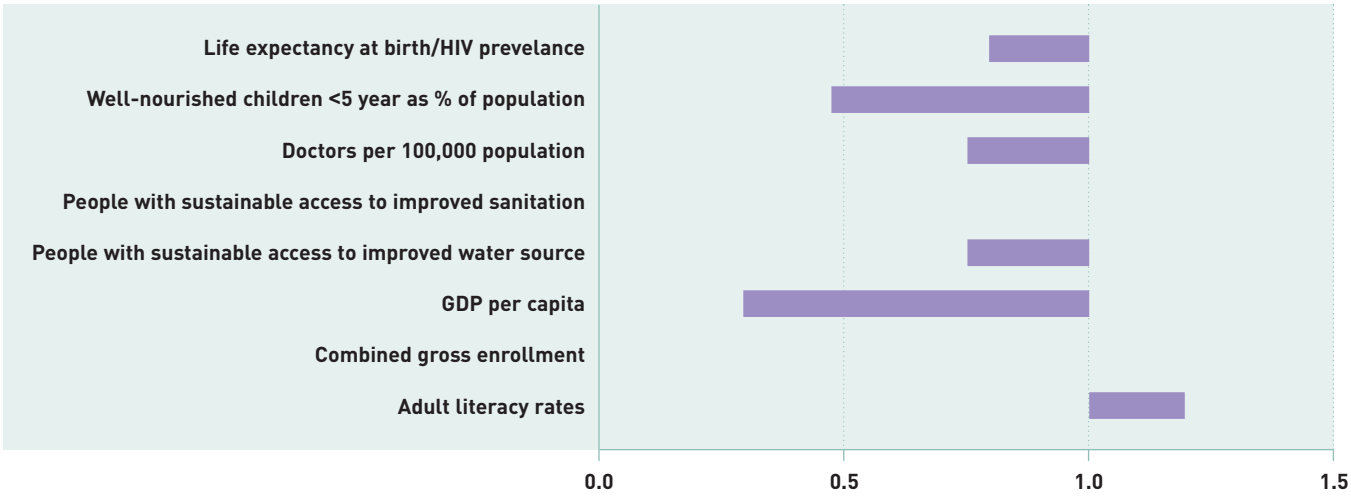


Figure 2.8: Comparing local with national economic and social performance at PBM



In brief, the economic and social indicators at the local level do not generally compare that favourably with national-level indicators. However, a potentially more useful analysis is to look at how the situation has changed within the communities over time. To improve its understanding of what impact PBM was having on the local economy, the company commissioned a special economic and health survey of 543 households from the villages of Ban Nam Mo and Ban Nam Gnone, adjacent to the Phu Kham copper-gold operation.

The results highlighted include:[37]

- significantly improved mortality rates – from 12.95 (2005), to 7.25 (2007), to 6.59 per 1,000 inhabitants in 2008
- a five-fold total village income increase as a result of salaries paid by the company and contractors and businesses working for the mine
- a five-fold increase in vehicle ownership.

37 These local-level findings are used to prioritize the company's community development programs.

At MMG Sepon, the biennial household surveys that have been undertaken since 2001 also reveal some useful evidence of change over time. For example, these surveys have revealed considerable increases in school enrolment for both boys and girls (see Annex A). This is probably a result at least in part of average annual per capita incomes in all villages having increased seven-fold since 2001 (growing from US$64 in 2001 to US$436 in 2009/10).[38]

In addition, these surveys have included a section containing open-ended questions for respondents to comment on their perceptions of how the mine has operated. At the end of this section, respondents are asked to sum up their opinion of the mine in one word. While most people have several suggestions or criticisms of the mine's operation, in 2009/10, 84% selected "happy", as opposed to 11% "unhappy" and 5% "not sure". This positive response is typical of every such survey in the Lao PDR, as there has never been a percentage of respondents lower than 79% stating they are happy with the mine. The positive figure recorded in the most recent survey is the highest ever. To see whether there were underlying patterns to these responses, other household characteristics collected in the course of the surveys were correlated with the "happy/unhappy" responses. The variable most closely associated with "satisfaction with the mine" was the respondents' level of education; the better-educated respondents were more likely to be employed by the mine and also supportive of it.

The two closest relationships uncovered by the exercise were between income and jobs with the mine, and between jobs with the mine and equality of income. Income in the area remains heavily dependent on the mine (which poses challenges for post-mine sustainability) but, on the other hand, by distributing jobs widely the mine has greatly decreased pre-mine inequalities – and this appears to be a source of fairly general satisfaction with the mine's performance. Because of preference for jobs being primarily given to people from the local area it has not led to better-educated people capturing all the jobs to the detriment of less capable people. For this reason, it would seem that inequalities have not increased along a more common route of better-educated people having better employment prospects and therefore being able to increase their income and wealth at the expense of worsening inequality in the community.

Culturally, equality is extremely important to Lao people and this seems particularly evident in the mine site area (see Box 2.6). It is, therefore, not only a matter of natural social justice that growth in incomes around the Sepon mine be achieved alongside increasing equality, it is of pragmatic interest to the mine operators that such is the case. ***Higher incomes, improved economic opportunities and greater equality have made the mine a generally welcome addition to the community.***

38 Data on the respondent's incomes relies on their recollection (of income) over the 12 months preceding the survey and their willingness to share it with the household budget surveyors. Quantifying household incomes is notoriously difficult to do and in theory the best indicator of welfare is the actual consumption of the individuals, rather than asking how much they earned. Because of recall bias and under-reporting, ideally a survey would ask questions on both consumption of food and other goods as well as consumption of services such as education and health. The problem with asking for a money-metric definition (income) is that it tells us nothing about the environment in which people live and work (hardship), including time spent travelling to work, or to buy (or sell) produce. In addition, income fluctuates during the year and the respondents' answers may vary according to harvests/agricultural seasons, as well as rural households' consumption often being supported by remittances, savings or borrowings.

Box 2.6 The impact of the MMG Sepon mine on community inequality

A biennial household survey is conducted of 34 villages (total population 8,500) around the Sepon mine. The survey gathers not only quantitative information concerning population growth, food sources, household possessions and income, but also opinions relating to change in the area and the operations of the mine. An important characteristic of the communities in the immediate vicinity of the Sepon mine is that they comprise two different language groups. In 2001, two thirds of the population living in four settlements were Lao-speaking Phou Tai and one third was Makong/Tri speakers living in two settlements. At that time, all settlements were mono-ethnic. Today, two villages have developed more multi-ethnic characteristics and close to 39% of the total population comprise Makong/Tri speakers.

Average annual per capita incomes in all villages have increased considerably since 2001; overall, they have grown from US$64 in 2001 to US$310 in 2005 and to US$436 in 2009/10. These increases have been achieved in the context of a rapidly growing population – the number of inhabitants in the immediately affected communities has risen from around 1,100 in 2001 to 2,200 in 2009/10.

Have these increases been accompanied by growing inequality?
Using the Gini coefficient, it can be shown, first, that inequalities between villages have declined. Whereas the Gini coefficient for this measure in 2001 was 27 (meaning that 27% of the total income would need to be redistributed if perfect equality were to be attained), by 2005 it had fallen to 9 and by 2009/2010 it stood at 12. Because there has been some ethnic mixing since 2001, this more recent increase in equality is not quite as significant as it seems, but it is still important.

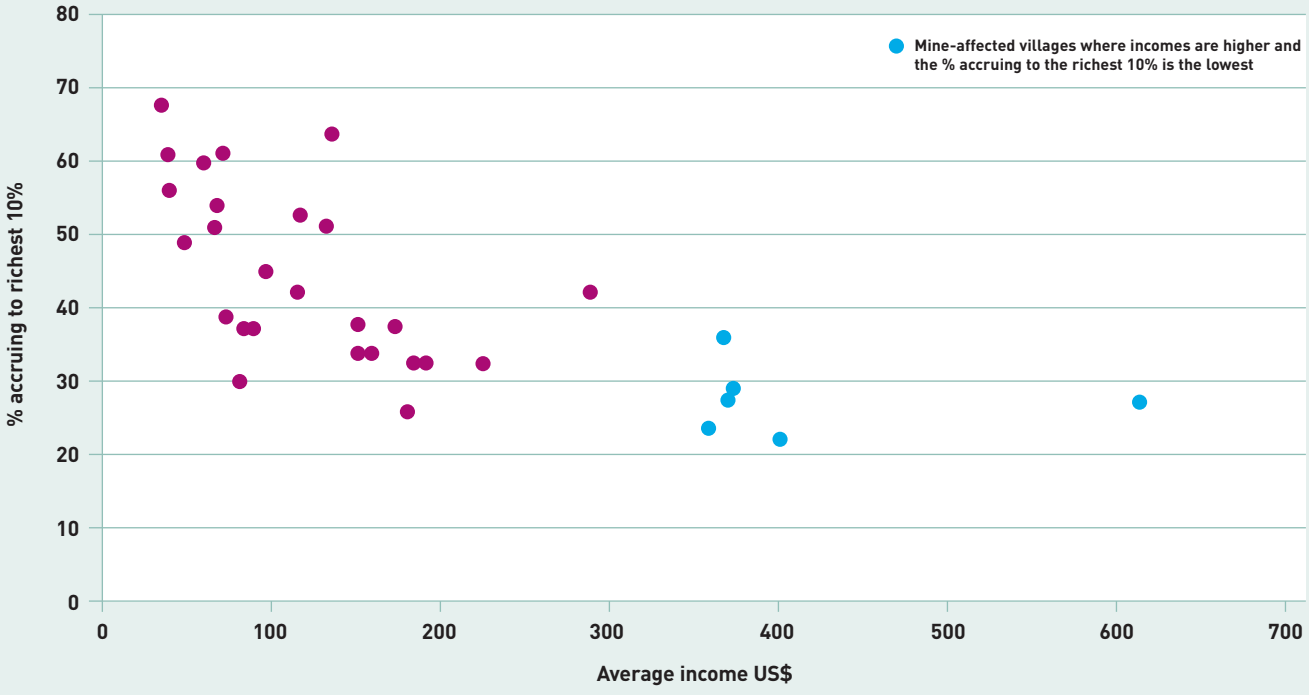
What of equality within each village?
Have some families been left behind while their neighbours prosper? In every case, the Gini coefficient has fallen between 2001 and 2009/2010, on average from 50 to 34. This tells us that inequality within the villages before the mine started to operate was high; it also tells us that inequality has been reduced since operations commenced. However, while the fall in the Gini coefficient is significant, there does remain some inequality within the villages, much of which can be traced to family structures – elderly couples and young couples with multiple infant children are not likely to have benefited from the mine as much as mature families with numerous adults of working age.

Have the Lao Loum speakers done better than the non-Lao?
The Gini coefficient between the two groups was 16 in 2001, but in 2009/2010 it had fallen to 12.* It is true that the incomes of non-Lao Loum speakers still lag behind those of Lao Loum speakers, but not by the same ratio as was the case in 2001. Incomes for non-Lao Loum speakers have actually grown more rapidly than those of Lao Loum speakers, but they began at a lower base value.

Finally, we can compare inequality in the villages impacted by the mine with those more distant from it for 2009/2010 (See Figure 2.9). All the villages impacted by the mine are to the right of the diagram. It can be seen that, as income has risen, so inequality has been reduced (correlation coefficient -0.68).

* NOTE: These figures may seem low compared with others cited. However, the Gini coefficients for different measures shown here should not be compared, since they are partly a function of the number of groups involved in the calculation. The number of villages (the first measure) was six, the number of households used in the second measure was a minimum of 30, but the number of language groups is only two. The low Gini coefficient value of inter-language group inequality reflects this, in part.

Figure 2.9: Increased incomes and lower levels of income inequality in Vilabouly villages (MMG Sepon 2009 household survey)



2.7 Conclusion on the net contribution of mining at the local level

This section describes the various positive and negative impacts on the community living in the vicinity of the mining operations. It highlights how the sustainability of any contributions from large-scale mining is highly contingent on the mine's ability to understand and work with local actors and complementary government institutions (at the local as well as national level).

The consumption linkage – involving the spending by the two mines on goods and services and also the multiplier effects that arise because of the spending of employee wages – is probably the most important mechanism by which wealth "trickles down" and gives rise to further employment opportunities and poverty reduction at the local level. In addition, through the interactions that the mines maintain with the district governments in monitoring the spending of community development funds – some US$3 million since MMG Sepon started – they have improved the oversight and ***management of funds at the local level***. This is evident in MMG Sepon's influence in setting community development funds aside for both maintenance purposes and for certain administrative tasks. However, it is clear that there are still capacity constraints in some of the district governments and in this void the companies have sometimes had to step in to help. When companies find themselves planning and providing investments that properly belong to the local governments, the long-term sustainability of the sectors may remain inadequately assessed and under-funded in broader government plans. Furthermore, once the companies demonstrate their willingness to help with local economic and social development, they risk becoming a *de facto* parallel local government. This is uncomfortable for the companies concerned and is often deeply resented by the local governments, who see their positions partly or wholly usurped.

Regional development planning and the implementation of budgets by the government in Sepon has always been strong. Because of this fact, when the mine began operations it was decided that the district government would be largely responsible for planning, budgeting and prioritizing expenditure from the SDTF. For example, MMG Sepon only operates as an advisor and administrator; the government is the implementer of all development initiatives. Recently, more funding became available for development activities, which includes participatory planning for all affected villages, and the implementation of the voluntary Resettlement Plan for one village inside the affected area. Ultimately, these activities will strengthen local and regional development potential. PBM's local and regional development initiatives are channelled through the Community Development Fund, including community-based initiatives in the communities and haulage services between the mine site and Ban Thouay.

The provision of ***community development*** funds (PBM has an annual budget of US$300,000, and MMG Sepon has an available budget of US$500,000) has certainly enhanced social investment in the local areas. With the mines becoming increasingly integrated with their communities, a similar pattern is emerging in how funds are spent in the two cases. In the early years of operation, attention was focused on providing basic infrastructure projects. With time, this pattern seems to have adjusted to supporting the educational capacity of people in the local area, as well as their health and community development. More recently, a really encouraging development is that increasing amounts have been allocated for supplier and enterprise development. ***It is local content activities to support the integration of the mines into the local economy that will broaden the base of the inverted pyramid and spread the benefits more widely***. As well as expanding the economic benefits that affect communities, this should also be done with some thought as to what may happen after the mines' geographical location changes or they close. Providing people with the skills to allow them to run competitive businesses that are independent of the mine could, over time, become an increasing focus of social investment spending.

In the biennial household surveys of the two mines, detailed assessments have been made of the economic and social status of local communities and the impacts on poverty reduction in the areas. In comparison with the national average, poverty in the mining areas is more prevalent. Risks flagged by villagers in the MMG Sepon household survey have consistently focused on food security, particularly among the Makong/Tri and those living further from the mines. ***However, it is important to note that these are extremely poor areas and the relative improvements in poverty reduction have been remarkable***. Village incomes have increased five-fold in Phu Kham, average incomes at Sepon have increased seven-fold, and the result of this is seen in changes in people's goals during this period: from food security, improved housing and possession of a rice mill and tractor to motorbikes, mobile phones, refrigerators, water pumps, bank accounts and cars.

Looking beyond the numerical income and health indicators, these surveys also explore a number of far more subjective measures of poverty.[39] For example, when measuring changes in poverty by looking at community perceptions of happiness, most villagers say life has generally improved because of increased cash incomes from the mines (and reduced inequalities). A smaller group of villagers also identified the contribution that the mine could bring with regard to infrastructure. The main disadvantage of mining reported by the households was the potential negative impact of the loss of land. To what extent this will have an impact on poverty will be an issue to be monitored carefully in the future.

PBM and MMG Sepon both contributed to the reduction of poverty in the immediate project areas through the ***procurement of local goods and services***. The data indicate that the amount spent on procurement inside the country and in the vicinity of the operations areas has represented a considerable boost to the local and regional economies. At PBM, around 40% of the camp's fresh vegetables are now sourced from local farmers. Over time, we would expect to see these opportunities flourish as prospects for further new businesses and markets become available. Through micro-finance initiatives and training, both companies make efforts to provide more financial resources to the community to allow them to take advantage of the economic opportunities offered by their proximity to the mines. Since the mining companies are expected to scale up their activities in the coming years, it is likely that the contributions to poverty reduction through local content channels will increase further. As yet, localized inflationary pressures do not seem to have arisen but this does not mean that they will never arise. Including an indicator to monitor the price of a basket of goods would seem like a sensible and precautionary measure to include in some future household survey(s).

In order to respond to community concerns and prevent disputes getting out of control, both mines have established ***mechanisms for dealing with grievances and requests***. At PBM, a team of eight staff manage a range of both formal and informal community engagement strategies. During 2009, 138 grievances and community requests were processed, mainly relating to donations, compensation and development opportunities. Monthly meetings are held with community leaders to report on operational issues of concern to communities, providing an opportunity for the company to receive feedback. In addition, formal quarterly meetings are held with district government authorities for similar purposes.

39 The survey encompasses two key sets of questions: the first involves the villagers' perception of changes in their financial status and lifestyle since the opening of the mine and their thoughts about the mine in general and the way it works. The second set of open-ended questions allow villagers to express their views on any aspects of their lifestyle that have been affected by the mine. The method of analysis for the 2009 survey remains consistent with the surveys from 2005 and 2007, which rank the answers between -1 and 1.

2.8 Comparison of overall economic and social contribution of the mines as compared with previous ICMM country case studies

In addition to the Lao PDR, there have also been similar studies undertaken for ICMM in Chile, Ghana, Peru and Tanzania. In all five cases, the social and community contribution of the mines has been found to be related to the income and employment opportunities created, as well as to broader economic impacts. These include procurement policies, localization strategies and different levels of private-sector engagement and government intervention in building supporting infrastructure, improving the investment environment and other regional development initiatives. Some of the main cross-country contrasts and comparisons are summarized in Table 2.8.

Table 2.8: Comparison of overall economic and social contribution of the large-scale mines in the Lao PDR with other countries

	Ghana	Tanzania	Peru	Chile	Lao PDR
Links between mining and poverty indicators	Mining regions and districts have generally lower poverty levels than non-mining regions and districts. The lowest absolute levels of poverty in Ghana are in households where the head is engaged in mining	Performance of mining regions in general and North Mara in particular for poverty indicators varies around the national averages. For this and other reasons, national government makes no special contribution to mining areas	Not possible to ascertain whether mining improved or undermined regional Human Development Index (HDI) relative to national average	GDP per capita of Region II is more than twice the national average (US$11,996 compared to US$5,216). Region II has lowest poverty rates in Chile (10.9% or just over half the national average)	Not possible to ascertain whether mining improved (or undermined) regional HDI relative to national average but likely that it has improved in the short period of time that mines have been operating
Status of economic development and diversification	Limited "local" procurement and much of the support for economic diversification has focused on the national level	Too early for local procurement and small business enterprise policies to show effects. Local businesses stimulated by local spend. Regional and national suppliers benefiting	The limited size of the economy and young age of the mine mean that it is premature to assess definitively. The initiatives take time to have an impact	Significant local procurement, resulting from deliberate targeting and fostering of suppliers, combined with efforts to enhance capacities and competitiveness of suppliers through co-operative program	Significant local procurement through direct local contracts for mine-related services and local business development through training, support to small business groups and suppliers and seed financing through micro-finance initiatives
Status of social infrastructure and sustainability	Company support for social infrastructure dating back to state ownership has created some aspects of a dependency culture and has arguably harmed the prospects for post-closure sustainability of local economies at present	Steady growth of company-assisted improvements to social infrastructure. Participatory policy for new projects works towards sustainability. Increased communications infrastructure boosting local social as well as economic development	Company investments have been made in community infrastructure adjacent to the mine in order to improve the long-term sustainability of the communities	Company investments in infrastructure (e.g. education and health) within Region II via a Foundation, with increasing emphasis on partnering for sustainability	Significant company investments in time and money to support government regional development plans. Contrasting experience of MMG Sepon where the district government has been very involved and active in managing the Community Development Fund, whereas in Phu Kham there are capacity constraints in government and in this void the company has had to step in. The long-term sustainability of this latter approach is questionable and the sector's viability may remain inadequately assessed and under-funded in government plans

3

ECONOMIC AND SOCIAL OUTCOMES AT THE NATIONAL LEVEL

3. Economic and social outcomes at the national level

The purpose of this section is to understand how the broad situation in the Lao PDR nationally, in terms of economic growth and social development, has changed in a period when mining has assumed greater importance. The intention is not to ascribe a cause-and-effect relationship from mining to broad national outcomes. Rather, in order to understand the role that mining has had in the Lao PDR, we attempt a formal measurement of mining's positive and negative economic and social contribution at the national level.

3.1 The quality of governance

Comparative research undertaken by ICMM and others has found that resource-rich countries that have benefited most from these resources have also been characterized by relatively good governance and effective institutions.[40] Country case studies have also pointed to governance and institutions being key factors in enhancing the benefits and mitigating the negative impacts of an extractive industry project. However, this relationship is complex and even "successful" mining countries have continued to be handicapped by some basic weaknesses of governance (see ICMM 2006). Issues of governance and effective institutions are discussed in further detail in Section 5.

In order to support economic development, the Lao PDR government has paid serious attention to upgrading the quality of its governance in several dimensions in recent years. With support from various donors, improved legislation has been put in place. With the assistance of the UNDP, the government launched the Master Plan of Rule of Law, aimed at achieving considerable improvements in governance by 2020.

Large private investors in the Lao PDR – including those investing in the mining sector – have a vested interest in good governance and the wider business environment as, in its absence, projects experience severe delays and reduced levels of profitability. Delaying approvals, imposing hidden costs in the form of bribes or other unproductive charges, or requiring lengthy processes of litigation on matters in dispute, all impact negatively on profitability and, in turn, reduce tax payments to government. Similarly, when companies are constantly battling with minor permit or licensing issues, there is a risk they will lose sight of the communities and their responsibility to provide sustainable and effective development programs. Private-sector development contributes considerably to the sustainable economic development of any country, not only by creating jobs and generating income but also by disseminating technology and know-how from overseas enterprises. Thus, in order for the private sector to perform well and be competitive, a supportive business climate is essential.

Good governance matters tremendously for governments and arguably even more so for resource-rich countries like the Lao PDR. A country that succeeds in lowering its political risk profile as perceived by external investors, is considerably more likely to attract more and higher quality investments.

40 'Governance' describes the capacity (or efficiency) of a country's formal and informal institutions to design, implement and enforce public policies that benefit the wider public and improve the effectiveness of the private sector.

This has huge relevance for attracting investment. Lower risk profiles, as measured and defined by sources such as the Doing Business Survey or the Fraser Institute, typically result in countries being able to raise the effective tax rates they impose on investors. In time, this leads to a greater share of profits going to the government.

In the immediate context of this study, and notwithstanding the general improvements in governance indicated, it is useful to note that, despite significant gains, the Lao PDR remains a relatively difficult country in which to do business. The most recent World Bank indicators, found in *Doing Business 2010*, rank the Lao PDR 167 out of the 183 countries assessed (see Table 3.1). While it may be relatively easy to start a business in the Lao PDR, the World Bank assessment provides a number of warning notes about the delays and other difficulties that private investors might expect to encounter. For a comparison with some other Asian countries see Table 3.2.

Full details on the nature of the difficulties under each of the Doing Business headings can be found in the World Bank report. However, for the purposes of illustration, it currently requires nine procedures, takes an average of 50 days and costs the equivalent of 2.4 times the GNI per capita (in 2008 values – US$760) to export from the Lao PDR. Similarly, it requires 10 procedures, takes 50 days and costs the equivalent of 2.7 times GNI per capita (in 2008 values) to import a container. ***Overall, the cost per container, either to export or to import, is more than double that of any of the comparator Asian countries***.

In order to improve the business climate the government of the Lao PDR has already revised a number of laws, including business and investment laws. Improvement of logistics and infrastructure is also a high priority. In addition, in 2004 the government launched the Lao Business Forum, a forum for discussion between government and the private sector.

Table 3.1: "Doing Business" in the Lao PDR compared with other countries

	Lao PDR	Singapore	Thailand	Vietnam	Cambodia
Ease of Doing Business Rank	167	1	12	93	145
Starting a Business	89	4	55	116	173
Dealing with Construction Permits	115	2	13	69	145
Employing Workers	107	1	52	103	134
Registering Property	161	16	6	40	116
Getting Credit	150	4	71	30	87
Protecting Investors	182	2	12	172	73
Paying Taxes	113	5	88	147	58
Trading Across Borders	168	1	12	74	127
Enforcing Contracts	111	13	24	32	141
Closing a Business	183	2	48	127	183

Source: *Doing Business*, World Bank (2010).

Table 3.2: Trading across borders

	Documents to export (number)	Time to export (days)	Cost to export (US$ per container)	Documents to import (number)	Time to import (days)	Cost to import (US$ per container)
Cambodia	11	22	732	11	30	872
China	7	21	500	5	24	545
Lao PDR	9	50	1,860	10	50	2,040
Singapore	4	5	456	4	3	439
Thailand	4	14	625	3	13	795
Vietnam	6	22	756	8	21	940

3.2 Economic growth

The Lao PDR is a relatively poor country. Per capita GDP in 2008 was US$887, significantly below the regional average for East Asia and the Pacific region of US$3,070. The Lao PDR has the youngest population of any country in Asia, with a median age of only 19.3 years. This has resulted in population growth of 1.7% per annum and a labour force increasing by 2.6% per annum between 2002 and 2008 – more than twice that of other countries in East Asia and the Pacific.

More than 80% of the population depends on agriculture for employment and, until 2000, the agriculture sector accounted for more than half of GDP. Recently, however, the share of the agriculture sector to GDP has declined, falling to around 30% in 2008. There are two main reasons for this decline. First, growth in the manufacturing and agriculture sector has been slow, with both sectors only managing an annual growth rate of 3.5% between 2003 and 2008 (see Table 3.3). Second, growth in services and the industrial sector (e.g. construction, mining, utilities, but excluding manufacturing) has been strong, with an annual growth rate of more than 10% in mining and hydropower.

Table 3.3 shows relatively flat growth in agriculture between 2000 and 2008, for which there are two main reasons. First, the agriculture sector, especially rice cultivation, is highly dependent on climate conditions, with droughts and floods having the greatest impact. Second, the government invested in a number of irrigation projects across the country to improve food security during the 1990s. However, due to poor management and lack of funding, these irrigation projects have largely fallen into disrepair. More recently, to exacerbate matters, increasing demands for rubber and industrial plantations has also had an impact on rice output.

Stagnation in the agriculture sector – and, in particular, rice production – could stifle long-term economic growth and prevent broad-based development, as there is heavy reliance (by a largely rural population) on this sector.[41] This also has implications for food security, which we know from the MMG Sepon 2009 household survey to be a worry for those people living furthest from the mine. Similarly, the lack of exploration in the large-scale mining sector in recent years raises concerns that ***the relatively recent reliance on mining as an economic driver of growth and national income may not be entirely sustainable if no new mines are opened***. This is particularly the case given that it can take at least 10 years from exploration to develop a mine.

According to government projections made before the recent global financial crisis, economic growth was expected to reach 8% during 2009/10 (Government of Lao PDR, 2007). But, as in many other countries, the Lao PDR has felt some impacts from the financial crisis. This crisis could affect the economy in a variety of ways, such as declining demand for non-mineral exports, declining FDI, declining tax revenues, reduced remittances, declining numbers of tourists and declining government revenues (Kyophilavong, 2010). However, to date the economy has performed well and the impact of global events on the Lao PDR seems to have been minimal.

Table 3.3: Growth of real GDP and the mining sector (%)

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Agriculture	8.3	3.1	2.3	7.0	3.7	8.2	4.9	3.8	4.0	2.5	3.4	0.7	2.5	8.6	3.7
Industry	10.7	13.1	17	8.1	8.5	8.0	8.5	10.1	10.1	19.4	3.7	10.6	14.2	4.4	10.4
Services	5.5	10.2	8.7	7.5	4.8	6.7	4.9	5.7	5.6	3.8	12.0	9.9	9.7	9.1	9.7
Real GDP	8.1	7.0	6.8	6.9	4.0	8.0	5.8	5.8	5.8	6.2	7.0	6.8	8.7	7.8	7.8
Mining and quarrying	30.4	-3.7	37.1	28.5	13.7	33.5	1.3	1.2	10.1	985.6	-18.4	113.8	46.8	-11.3	20.6

Source: *IMF Country Report* (various issues).

41 In other country case studies only one country, Chile, found it possible to achieve similar gains in the agricultural sector to those it did in mining.

3.3 Poverty alleviation and related social development

The Lao PDR is ranked 133 out of the 183 countries on the UNDP's 2007 HDI and about 33% of the population lives below the poverty line. According to the HDI indicators, life expectancy was 65 years (higher than the average of low-income countries) and infant mortality was 48 per 1,000 live births (lower than the average of low-income countries).

As a result of successful policy implementation, the HDI rating has improved considerably, albeit from a low base, from 0.57 in 2000 to 0.62 in 2007 (see Table 3.4 for comparison with other ASEAN countries). Clearly, however, to maintain this rate of achievement there needs to be further government and private investment to boost economic growth and the social situation and to improve the standard of living, especially of those living in rural areas.

It is clear that the national gains from mining (via tax receipts, employment and procurement) have raised incomes and reduced poverty at the *national level*. That this is the case at the *local level* is less obvious, where the new mining incomes have transformed subsistence agriculture to cash-based economies. Undoubtedly, the positive net effect on government tax revenue from the two mines (providing 12% of total revenues) is a welcome addition to the economy but it does not automatically translate into additional financial resources allocated to poverty-reduction programs. Nor is there any assurance that merely by providing more money the programs will be effective.

Measured in terms of the HDI alone, during the period 2000 to 2007, when mining took on greater macroeconomic importance, welfare levels have clearly improved (see Table 3.4). How much of the improvements can be attributed to mining is far from clear, but it is plausible that the improving fortunes of mining have been closely associated with those of the wider economy, where growth in services and the industrial sector (hydropower, construction, utilities but excluding manufacturing) has been strong.

Table 3.4: Human Development Index (HDI), 1980–2007[42]

	1980	1985	1990	1995	2000	2005	2006	2007
Cambodia	–	–	–	–	0.52	0.58	0.58	0.59
China	0.53	0.56	0.61	0.66	0.72	0.76	0.76	0.77
Lao PDR	–	–	–	0.52	0.57	0.61	0.61	0.62
Myanmar	–	0.49	0.49	0.51	0.51	0.58	0.58	0.59
Singapore	0.79	0.81	0.85	0.88	0.89	0.89	0.94	0.94
Thailand	0.66	0.68	0.71	0.73	0.75	0.78	0.78	0.78
Vietnam	–	0.56	0.60	0.65	0.69	0.72	0.72	0.73

Source: UNDP (2009: pp. 167).

Table 3.5: Human Development Index, 2007

	HDI		Adult literacy rate		Combined gross enrolment rate		GDP per capita	
	Rank	Value	Rank	% ages 15 and above	Rank	(%)	Rank	(PPP US$)
Cambodia	137	0.593	103	76.3	141	58.5	143	1,802
Lao PDR	133	0.619	110	72.7	139	59.6	135	2,165
Singapore	23	0.944	51	94.4	N/A	N/A	7	49,704
Thailand	87	0.783	52	94.1	68	78	82	8,135
Vietnam	116	0.725	69	90.3	126	62.3	129	2,600

Source: UNDP (2009).

42 Country HDI performance in Table 4.4 is calculated as an indicator between 0 and 1. On this measure Norway (the top-ranked country by HDI) scores 0.97 and Niger (bottom-ranked) scores 0.34 (UNDP 2009: pp. 167).

In terms of the UN's Human Poverty Index (HPI), the Lao PDR was ranked 94th in 2007 (see Table 3.6). The HPI collates different features of deprivation to arrive at an aggregate measurement of poverty in a community. The HPI uses indicators of the most basic elements of deprivation: a short life, lack of basic education and lack of access to public and private resources.

The government has set itself the goal of graduating from the UN list of least-developed countries by 2020 and, to achieve this, has implemented the National Growth and Poverty Eradication Strategy, an overall development and poverty alleviation framework (Government of the Lao PDR, 2004). The main objectives of the long-term development strategy are to sustain economic growth with equity at an average rate of about 7% (considered to be the necessary rate for tripling the per capita income of the multi-ethnic Lao population by 2020), to halve poverty levels by 2005 and to eradicate mass poverty by 2010, and to eliminate opium production by 2006 and phase-out shifting cultivation by 2010 (Government of the Lao PDR, 2004).

So far, the positive achievements made in the Lao PDR to reduce poverty levels and improve other social indicators have been noted very positively in reference to the UN Millennium Development Goals (MDGs). ***These achievements have recently led the Lao PDR to be hailed "as an MDG trail-blazer"*** (Leo and Barmeier, 2010).

3.4 The quality of macroeconomic management

The quality of macroeconomic management is one of the most important factors in enhancing the benefits and mitigating the negative impacts of the resource sector on economic development. Put negatively, weak macroeconomic management is one of the most likely contributions to the "resource curse" as summarized in Box 3.2. In particular, high fiscal revenues from mining activity can easily distort relative prices and the real exchange rate (RER), and so lead to an inefficient use of the nation's other resources (see Box 3.1 for further explanation of the impact on the RER).

High-quality macroeconomic management can mitigate or avoid these undesirable results.
The quality of macroeconomic management in the Lao PDR has certainly improved since the Asian Financial Crisis. Inflation and exchange rates have both stabilized and trade and budget deficits have gradually declined. However, the country's macroeconomic condition is still considered weak, largely due to trade and budget deficits, and a high level of external debt.

The IMF in a Lao PDR country report (February 2011) expressed considerable concern that the economy was at risk of exceeding its macroeconomic "speed limits". Although headline inflation remains below the regional average, accelerating domestic demand arising from

Table 3.6: Human Poverty Index, 2007

	Human Poverty		Adult illiteracy rate		Children	
	Rank	(HPI–1)	Rank	% aged 15 and above	Rank	% aged 5 and under
Cambodia	87	27.7	103	23.7	122	36
Lao PDR	94	30.7	110	27.3	131	40
Singapore	14	3.9	51	5.6	14	3
Thailand	41	8.5	52	5.9	56	9
Vietnam	55	12.4	69	9.7	104	25

Source: UNDP (2009).

expansionary fiscal and monetary policies has put pressure on the balance of payments. They estimate that the Real Effective Exchange Rate is now 17% more appreciated than the 2007 average. Equally worrying was their finding that the overall fiscal deficit effectively doubled in fiscal year 2009 as a result of off-budget spending (4.1% of GDP).[43] The stimulation of domestic demand and imports has reduced the net foreign assets of the country and, as a result, the liquidity buffer to absorb external and internal shocks if they did arise is substantially weaker than during 2000–2007.

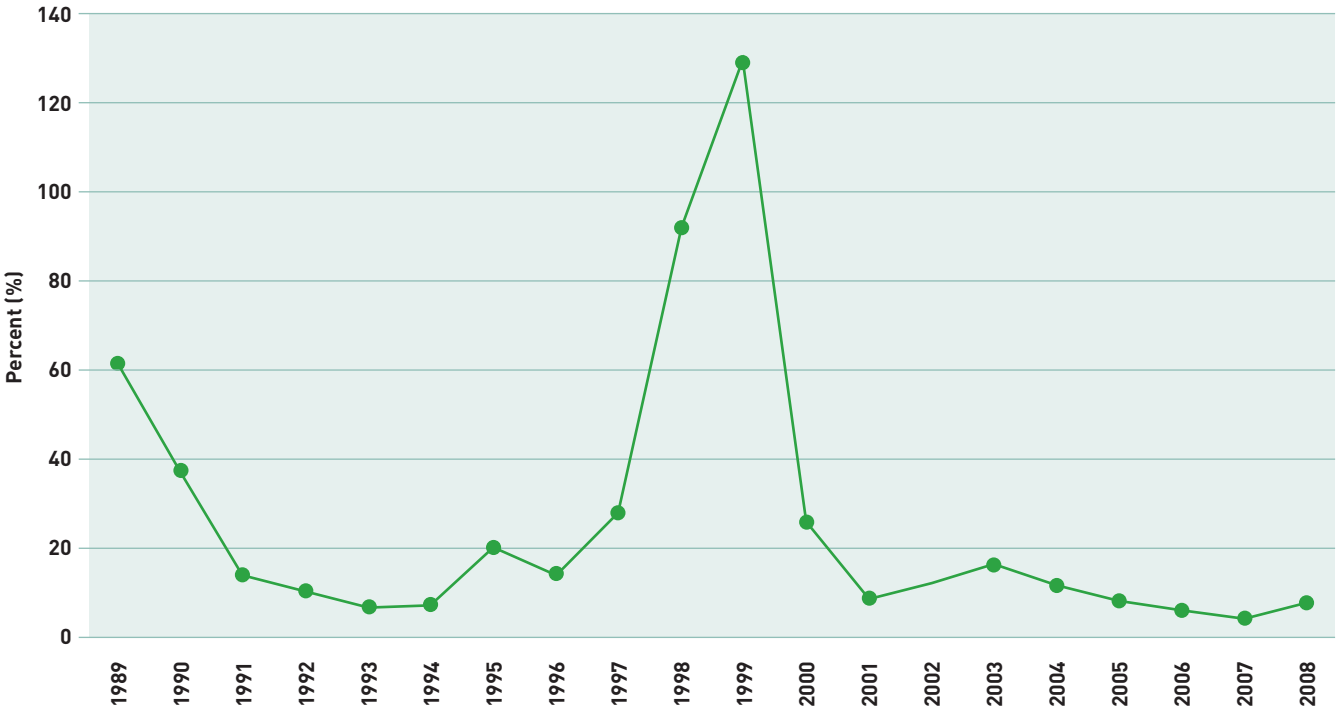
During the Asian Financial Crisis of 1997–98, the Lao PDR also faced macroeconomic instability (see Figure 3.1). The fluctuations in inflation and exchange rates were dramatic and the Lao Kip depreciated massively against the US dollar and FDI dropped sharply. Since then, macroeconomic stability has improved. Inflation is down to one digit levels and has been at around 5% for the past five years and the nominal exchange rate fluctuated by less than 5% between 2003 and 2008.

Box 3.1 The importance of the Real Exchange Rate (RER)

Large natural resource-based export projects, when introduced into a poor and relatively undiversified economy such as that found in the Lao PDR, can lead to the creation of new jobs and new productive possibilities, especially for those activities that can directly supply the new project. However, these positive effects can easily be offset in whole, or in part, through a negative impact on the existing (and future) internationally tradable products of the country due to a rise in the RER. An appreciating RER has two critical effects on the host economy:

- **Because producers of cash crops are price-takers on international markets, an appreciating currency makes their products more expensive in comparison with other exporting countries and thus reduces the amount they can sell. For some farmers and businesses, this will have a direct impact on their livelihoods unless they are able to find alternative goods or services to produce for export or their domestic market. Over time, an appreciating RER will discourage non-mineral exports, as in the much-quoted example of "Dutch disease".**
- **In addition, by making imported goods relatively cheaper, it stimulates increased demand for imported goods, undermining the competitiveness of the local producers of these goods who supply to the domestic market.**

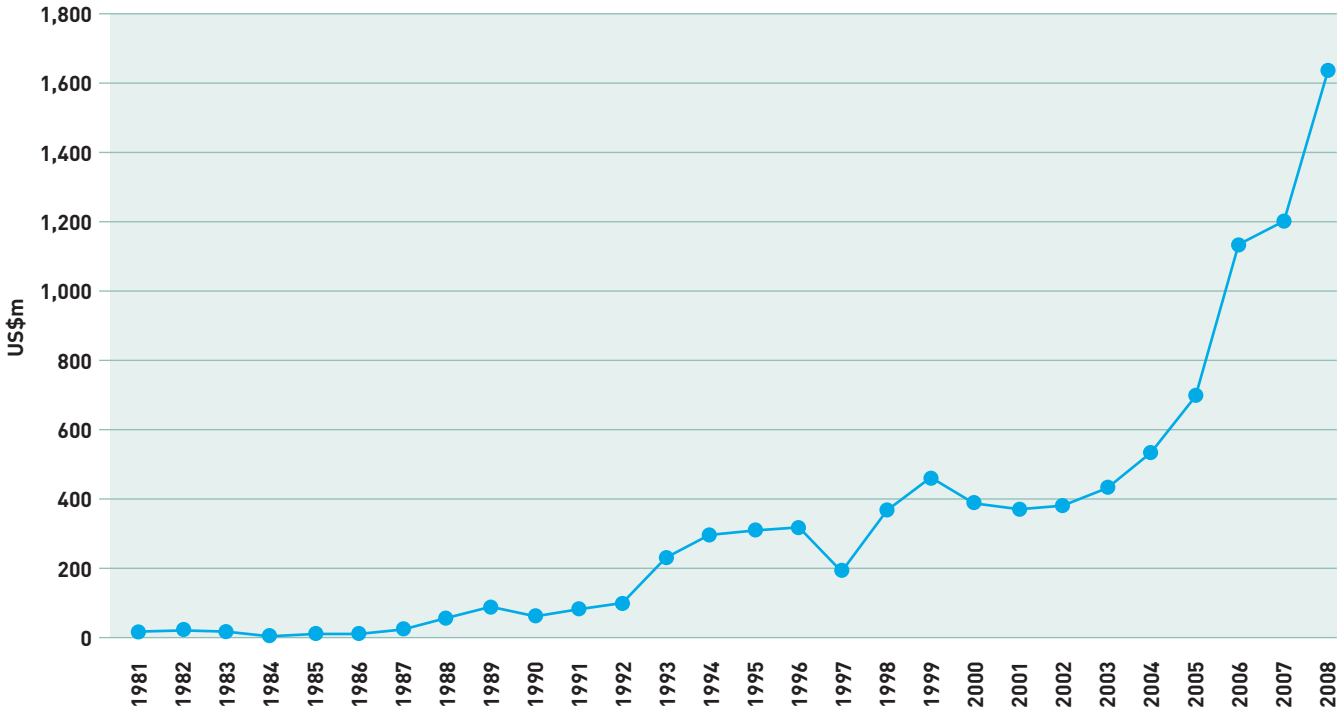
Figure 3.1: Inflation rate (%)



Source: International Financial Statistics (2009).

43 At the end of 2009, the stock of recorded domestic public debt amounted to 6.1% of GDP, up from 3% of GDP at the end of 2008, driven mainly by the Bank of Lao PDR's direct lending to finance local government's off-budget infrastructure projects, which added US$192 million (or 3.4% of GDP) to domestic debt in 2009 (IMF 2011).

Figure 3.2: Exports (US$m)



Source: International Financial Statistics (2009).

Due to contributions from hydropower, timber and garment exports since 2003 (see Table 3.7 for general figures on exports), the trade and budget deficits of the Lao PDR have narrowed. The trade deficit declined as a percentage of GDP from 21% in 2004 to 13% in 2006, but then climbed back to the equivalent of approximately 20% of GDP in 2007 and 2008. This was most likely due to increasing imports of capital investment goods for mining and hydropower projects. As these investments start producing for export, this trend will probably reverse and the trade deficit can be expected to fall once again.

Mineral exports accounted for more than 40% of total exports between 2006 and 2008 (see Table 3.7). In particular, copper exports have replaced electricity, timber and garments as the mainstay of exports. Moreover, mineral exports are expected to increase further as expansions to existing projects or new mining projects are completed.

Table 3.7: Main export share by commodity (% of total exports)

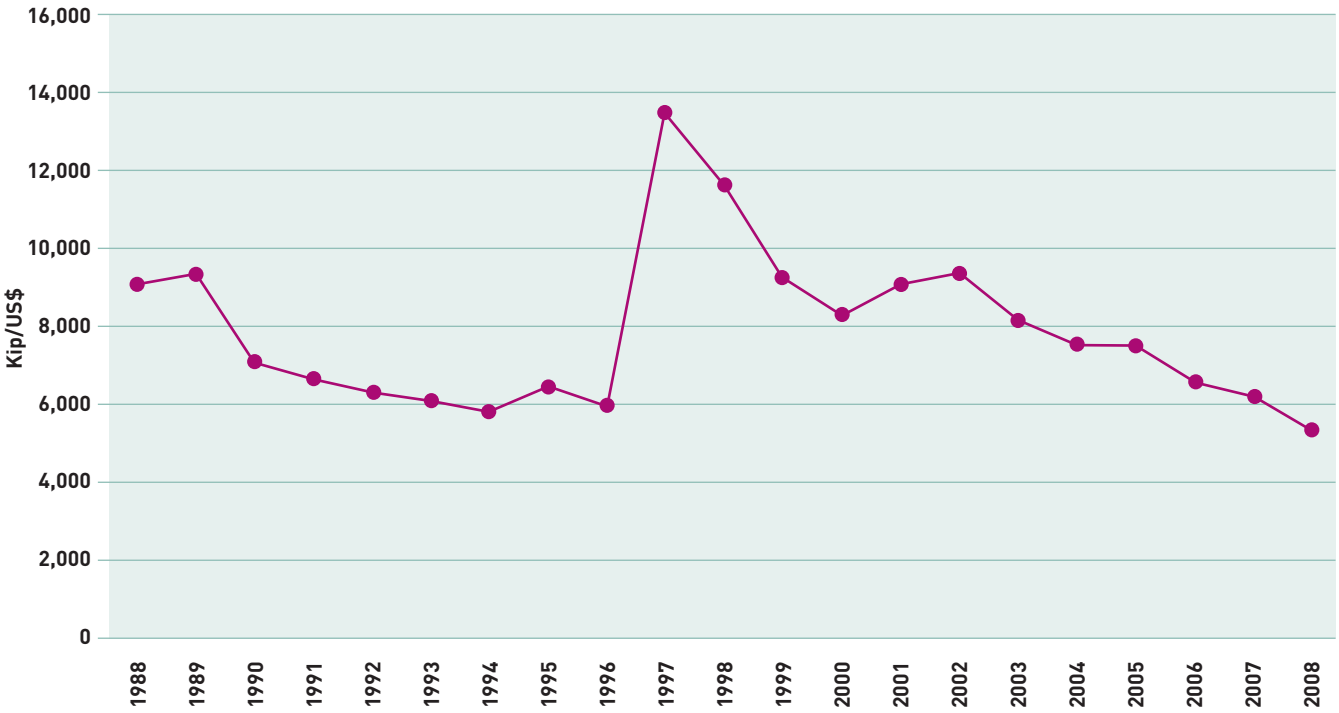
	2003	2004	2005	2006	2007	2008
Gold	12.7	10.8	13.0	10.4	7.1	7.3
Copper	0.0	4.3	16.1	36.1	33.8	37.9
Electricity	24.3	21.9	17.9	10.8	8.6	7.2
Timber	27.2	27.1	22.4	17.3	13.6	8.0
Garments	27.5	28.9	16.5	13.3	11.6	11.6
Coffee	2.4	2.7	1.1	0.9	2.2	1.1
Other	6.0	4.4	13.0	11.1	23.2	26.9

Source: UNDP (2009).

It is a common element in discussions about large investments in oil, gas and mineral investments that there is some danger these may induce an appreciation of the host country's RER. This fear is explained more fully in Box 3.1. To the extent that an appreciation of the host country's RER does occur, it can damage the competitiveness in world markets of the other tradable products of that economy. The Lao PDR has a relatively open economy and so should be expected to absorb medium-sized projects such as MMG Sepon and PBM's projects with few risks of currency overvaluation. Nonetheless, the potential coming on-stream of other new mineral (and hydropower) projects that might follow will somewhat increase the country's rate of dependency on natural resource exports. A key factor here will be how large the mineral revenues accruing to the economy might become and how well the spending of these revenues can be absorbed in the country's overall macroeconomic management (see Box 3.3). An appreciating RER and significant off-budget expenditure are the two main areas that are already causes for concern (IMF 2011).

The Lao PDR's nominal exchange rate and its RER (when measured against the US dollar) depreciated strongly during the Asian Financial Crisis but since then these rates have appreciated, especially since 2003. Of particular relevance to this study is that this appreciation began in the period when mineral exports started to become significantly more important. Table 3.7 shows that from 2003 to 2008 the share of gold and copper in total exports rose from 13% to 45%. There are three main reasons for the RER appreciation that has been seen. First, during this period there were massive foreign capital inflows, many associated with the resource sector. Second, the US dollar itself was weaker compared with the Kip and other currencies in Asia, also weakening against the Thai Baht (by around 13% in the 18 months to October 2010). Third, the monetary authorities were only able to exert control of monetary and exchange rate policies in order to stabilize prices and exchange rates to a limited extent. The massive capital inflows (FDI inflows rose from less than US$500 million in most years in the early 2000s to a peak of over

Figure 3.3: Real Exchange Rate (Kip/US$)



Source: Calculations from IMF data.

Box 3.2 The "resource curse "

Literature on the "resource curse" shows that the idea has been around for a long time and pre-dates the OPEC oil price shock in the early 1970s when Juan Pablo Perez, one of the founders of OPEC, reputedly exclaimed, "It (petroleum) brings trouble – look at this locura – waste, corruption, consumption, our public services falling apart. And debt, debt we shall have for years."

Most proponents of the "resource curse" propositions invoke one or more of the following component arguments:

- **Large earnings from mineral resources can lead to the *"Dutch disease" phenomenon* involving exchange rate overvaluation and so to decline in the competitiveness of manufactures and other (non-mineral) tradable activities.**
- **Dependence on such earnings is problematic if the *prices of the minerals in question are volatile* in the short term or subject to sustained decline in the long term.**
- **The presence of mineral wealth can encourage governments to adopt *misguided industrial policies that offer protectionist barriers* to support otherwise uncompetitive new activities.**
- **An economy blessed with abundant but depletable natural resources may *over-consume*. One reason is that incomes in the short term may fail to account properly for the depletion (depreciation) of the nation's capital, thereby resulting in consumption levels that are unsustainable. The correction when it comes is inherently damaging to livelihoods.**
- **Some countries blessed with natural resources may be *more prone to poor governance* and in some cases will experience a "predatory" state characterized by corruption, political conflict and inequalities largely created by state actions (rent-seeking behaviour).**

These arguments together can lead to the broader conclusion that, notwithstanding the short-term gains from large-scale mining activity, the long-term effects may be low or even adverse. This is because the presence of mining can create incentives (in the private sector and the governing authorities) that are inimical to the creation of both the appropriate economic institutions and the impulses to modernization normally associated with sustainable development.

As noted elsewhere in this report, the *quality of the institutions, governance and policies* of each country, and the manner in which large mining investments relate to such arrangements, explains *why* some countries have been able to safeguard a strong macroeconomic position and been able to head off predatory government behaviour.

***A positive outcome occurs from good governance, strong and effective institutions and sound public policy processes.* These conditions and the interactions between different stakeholders – including governments, the extractive industries, organized interests of the state, social groups and international regimes and organizations – allow investments in the mining industry to render higher or lower socio-economic returns.**

(Source: ICMM Publication *Synthesis of Four Country Case Studies – The Challenge of Mineral Wealth: Using resource endowments to foster sustainable development* (April 2006).

US$3 billion by 2007 – see Figure 3.4) was a powerful tide that was hard to withstand. Without stronger offsetting action in future, these forces seem likely to accelerate the appreciation of the RER and create some negative offsets to the benefits that mining can bring.

Inevitably, in an increasingly mineral-dependent country, when mineral exports appear to be replacing other tradable goods such as cash crops, garments and timber, people see the appreciation of the RER as evidence of the "Dutch disease" (see Box 3.2). During resource booms, it is certainly very important to monitor the RER. As it is not possible to access data for traded and non-traded goods *directly*, the RER can be calculated indirectly from the nominal exchange rate, domestic price and foreign price data, as shown in Figure 3.3 (Kyophilavong and Toyoda, 2009). These data show that the RER had recovered to its pre-Asian Financial Crisis level by about 2007/2008. The years after 1996 were turbulent ones. However, the steady recovery since about 2004 is testament partly to the improved macroeconomic management of the economy, partly to the increasing openness of the economy and partly to the emerging effects of the growing mineral sector (Kyophilavong and Toyoda, 2009). However, the danger now of moving too far in the direction of appreciation is not over.

Another macroeconomic indicator to note is the budget deficit as a percentage of GDP. From 2003, this deficit declined from around 6% to 2% in 2008 – a good indication that the government was succeeding in absorbing revenues from mining into the wider public financial management system. Since 2006/07, the mining sector has made significant contributions to narrowing the government budget deficit with increasing amounts of royalties, dividends and taxes being paid by the two main mining projects. To date there has mostly been evidence of a counter-cyclical policy being adopted by government. This is where peaks and troughs are smoothed over the economic cycle rather than allowing exceptionally high levels of spending in times of plenty followed by sharp cut-backs in times of hardship (pro-cyclical).
A counter-cyclical policy stance could be recognition on the part of government as to how hard it is to spend money effectively. So rather than spending the extra revenues from mining badly, these revenues are being saved and used to pay off debt (see Table 3.8).

Table 3.8: Government deficits and external debts

	2003	2004	2005	2006	2007	2008
Government deficit*/GDP (%)	-5.7	-2.9	-4.5	-3.0	-2.9	-2.0
External debt**/GDP (%)	94.5	84.1	79.8	65.7	60.5	54.5

Source: IMF (2009).

NOTES:* Overall balance (including grants); ** external public debt (excluding private debt).

Table 3.9: Government revenue and the mining sector

	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09
Total government revenue (in billions of kip)	2,822	3,387	4,266	5,460	6,436	7,313
Mining sector revenue (in billions of kip)	0	0	74	477	805	1,020
Total government revenue (% of GDP)	11.0	11.8	12.4	14.0	14.3	14.5
Mining sector revenue (% of GDP)	0.0	0.0	0.2	1.2	1.8	2.0

Source: IMF (2009).

According to the IMF, in 2009 total government revenues accounted for over 14% of GDP. Of this total, revenues from the mining sector accounted for 2% of GDP in 2008/09 (see Table 3.9). However, what is really dramatic is that mining revenues as a proportion of overall revenues to government increased from less than 2% in 2005/06 to nearly 14% in 2008/09. This can be expected to increase further with the commencement of profit tax payments by PBM in 2010. This is a big increase by any international comparative standard and has quickly made the budget finances highly dependent on just one income source – or, to put it another way, on just two mines.

Box 3.3 How to manage the revenue surplus from the resource sector

- **Introduce mechanisms that can stabilize the revenues spent during the boom and post-boom periods in order to ensure efficient investment in a multi-year timeframe (counter-cyclical fiscal policy).**
- **Enhance the investment climate to promote fast and sustained growth of the non-resource sector during the peak years of revenue surpluses.**
- **Achieve an effective public investment – supply-side response to the increased demand for non-traded goods. That investment should also stimulate private investment to head off too large a real exchange rate appreciation**
- **Import capital goods rather than consumption goods where there is a choice.**

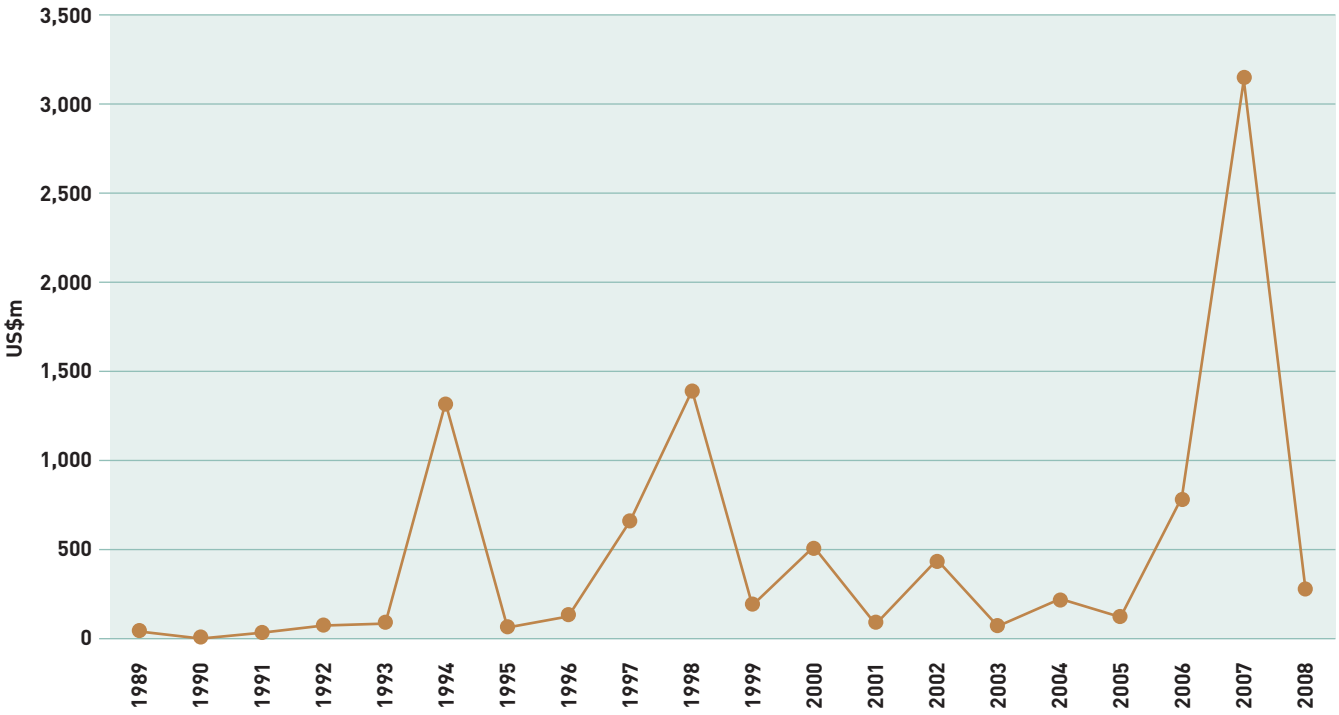
Source: Insisienmay (2008), p. 117.

Furthermore, this dependency on revenues from the mining sector is expected to increase dramatically in the coming years as the repayments by the mining companies for the capital they have borrowed come to an end, increased profits start to be earned and larger taxes and dividends are paid to the government.

Of course, expansions to the current mines will allow revenues to be sustained further into the future and, if other mining projects are also completed, this should provide a relatively stable and rising revenue stream to the government for many more years to come.

It should be noted that it is not mineral revenues, per se, that are the issue; it is the *management* of these revenues that is important. ***This is a critical aspect of the avoidance of the unwanted "Dutch disease" effects. While fluctuations in international commodity prices are not conducive to stable revenue management and make planning expenditures much more challenging, they can and should be anticipated and managed as with any other factor that risks the stability of public financial management.***

Figure 3.4: FDI in the Lao PDR (1989–2008) (US$m)



Source: Adapted from Ministry of Planning and Investment data.

External debt in relation to GDP is another important indicator of macroeconomic stability. The main debt ratio (debt outstanding as a percentage of GDP) has declined since 2003, from 94.5% in 2003 to 54.5% in 2008 (see Table 3.8). However, external debt is still quite high, at over 50% of GDP. A high dependency on foreign finance can be a particularly fragile position to be in, especially in times of global concern about financial markets, when the rolling over of debt can be more difficult. While the risk of the Lao PDR failing to meet its debt obligations is considered to be relatively low, if it were to happen, or even if access to foreign debt markets became significantly more difficult and/or expensive, this could cause a sovereign debt crisis and lead to considerable macroeconomic instability for a long time.

A final indicator of relevance is the volume of FDI attracted to the country. FDI has increased since initial investment legislation was adopted in 1988 (see Figure 3.4). Between 1989 and August 2008, 1,547 projects were registered, representing capital of US$9,525.8 million (see Table 3.10).

In terms of registered capital accumulation, the energy (hydropower) sector has the highest share of the stock of FDI investments, at about 55% of total capital. The second-highest share is the mining sector, accounting for 18.3% of total capital (see Table 3.10). Thailand has the largest investment share, which accounts for 26.5% of total capital. The second-largest investment was made by France and the third largest by Vietnam (Kyophilavong, 2009). FDI has increased sharply since 2003, with the mining sector so far absorbing the largest share. Mining accounted for about 80% of total capital during this period (World Bank, 2008).

Table 3.10: FDI by sector, 1989–2008

	Project	Capital	
		US$m	%
Energy and hydropower	38	5,184.39	54.42
Mining	135	1,747.35	18.34
Agricultural	257	523.3	5.49
Industry and handicraft	291	501.76	5.27
Services	269	486.86	5.11
Construction	53	286.54	3.01
Telecommunications	17	263.40	2.77
Hotels and restaurants	115	172.51	1.81
Banking	16	133.80	1.40
Wood industry	60	101.39	1.06
Trade	160	63.88	0.67
Garment	67	50.15	0.53
Consultants	69	10.47	0.11
Total	1,547	9,525.80	100

Source: Adapted from Ministry of Planning and Investment data.

Summary

The most recent global financial crisis seems to have had a minimal impact on the Lao PDR. This is partly because the country's financial system is not yet so highly integrated with the international financial system as those of some of its neighbours (Kyophilavong, 2010). Largely thanks to its response to the earlier Asian Financial Crisis of the late 1990s, macroeconomic conditions have improved and this sustained and sound macroeconomic management have enabled the economy to show significant resilience during the more recent global financial crisis. Nevertheless, this has probably been at least partly the result also of some good fortune, in that high mineral prices and increased mineral activity have allowed the resource sector to contribute significantly to making a positive contribution to an improved macroeconomic climate.

Although the quality of macroeconomic management has improved, the economy still faces three main challenges:

- ***First, appropriate macroeconomic adjustment is necessary in order to cope with massive swings in foreign capital inflows related to the mining and energy sector and an appreciating RER.*** Because the financial system is in the early stages of development and the monetary authority lacks monetary and exchange rate policy instruments fully to control capital inflows, there is insufficient depth in the local markets to absorb such large flows.[44]
- ***Second, government revenue from the resource sector is expected to increase significantly in the near future.*** Therefore, a more comprehensive fiscal policy is needed for the effective management of government spending windfalls from the resource sector. Increasing current expenditure on consumables (non-tradable goods) rather than investments could easily accelerate the appreciation of the RER. This, in turn, might lead to some contraction of the non-mineral tradable sectors

44 Plans to establish a stock exchange are expected to increase foreign capital inflows, bringing its own macroeconomic challenges.

over the medium to long term and result in local industries that are large employers (such as garment manufacturing) losing competitiveness. Improving productivity in agriculture will also be extremely important given its relative size and importance to the economy and people of the Lao PDR.

- ***Third, while mining and hydropower have been the engines of recent economic growth, if no new large-scale mines open in the next few years, tax revenues, jobs and purchases from the local economy that come from gold and copper production will not last beyond the next 15–20 years.*** In other words, the resource boom would be short-lived. In addition, revenues from the resource sector are highly vulnerable to international commodity price changes. Therefore, important factors in promoting sustained economic growth will be improvements in the policy and general business climate for SMEs – including those that can benefit from mining activity – and an increase in competitiveness. Properly done this can help to build a larger non-mineral economy that would help to ensure sustained economic growth if and when a mineral sector decline sets in.

4

MACROECONOMIC IMPACTS: A LIFE CYCLE APPROACH

4. Macroeconomic impacts: A life cycle approach

This section of the study aims to analyze the economic impacts of large-scale mining projects on the economy and uses a range of techniques to look at the macroeconomic effects over the full life cycle of the mines. We have used company data for the historical numbers and have benefited from analysis by the World Bank looking at the long-term likely impact of large-scale mines in the future. We have updated these figures to (1) include revised future prices of gold and copper, (2) remove assumptions about other mineral projects so that these estimates only show gold, copper and silver (3) include new information on likely future construction at PBM and MMG Sepon and (4) revise assumptions about the repatriation of profits, mine extensions and closure costs.

4.1 Overview

There is no doubt that the mining sector has made a significant contribution to the macroeconomy of the Lao PDR. In recent years, FDI inflows to the mining sector have averaged US$271 million annually and large amounts of foreign exchange have been earned from the export of gold, copper and other minerals. On average, mineral exports from the two main mines totalled US$530 million per annum between 2004 and 2010. Moreover, mining has been a significant source of government revenues and has contributed to narrowing the budget deficit.

4.2 Production values: Gold and Copper

Production has increased dramatically since large-scale mining started in the early 2000s (see Figure 4.1). From 2003–09, the volume of gold production averaged about 162,000 ounces annually, with 158,000 ounces being extracted in 2010. While production *volumes* have been steady, because of increases in world prices for minerals the *value* of production has increased massively over this period, more than doubling between 2003 and 2010. The spot price of a troy ounce of gold rose from US$399 in 2004 to over US$1,200 in 2010. In terms of the value of foreign exchange to the country earned through the sale of gold, in 2003 this was only US$66 million, but it increased to around US$160 million by 2010.

Similarly, copper production has increased considerably during this period, growing from 30,480 tonnes in 2005 to 121,580 tonnes in 2009. It was estimated to reach a record 136,000 tonnes in 2010 (see Figure 4.2). The foreign exchange value of the copper sales produced in 2005 was US$123 million; this figure has increased to US$436 million, despite the current dip in copper prices as a result of the recent global financial crisis.

Figure 4.1: Gold production: MMG Sepon and PBM, 2003–10

Source: MMG Sepon and PBM.

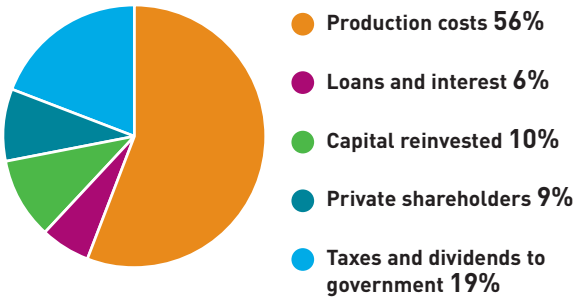
Figure 4.2: Copper production: MMG Sepon and PBM Phu Kham, 2005–10

Source: MMG Sepon and PBM. PBM's Phu Kham copper-gold operation commenced production in May 2008.

As with all projects that sell large amounts of goods for export, the question often arises of where the income from the sales goes. Modern large-scale mines are extremely capital-intensive operations to run. In addition, the Lao PDR is an expensive country in which to do business (note the aforementioned cost of importing a container detailed in Table 3.2, as compared with other countries in the region), which results in high production costs. To illustrate this point, we looked at the example of MMG Sepon between 2003 and 2009 (see Figure 4.3). In addition to large production costs (56% of turnover), the company paid substantial taxes and dividends to government (19%); capital was reinvested to sustain the mining operations (10%); banks and others who lent money were repaid with interest (6%); and shareholders received a payment for having risked their capital on the venture (9%).

In cash terms, between 2003 and 2009, gold and copper sales values were around US$2.3 billion. The gold and copper production costs accounted for around US$1.3 billion of that total; taxes and dividends to government accounted for around US$437 million; repayments of loans and interest on the capital investment were US$145 million; capital reinvested was US$232 million; and there were payments of US$203 million to the shareholders who invested in the project. This pattern of revenue sharing is fairly consistent with what is seen in mining operations in other countries.

Figure 4.3: Revenue disbursement: MMG Sepon, 2003–09



Source: Data provided by MMG Sepon.

4.3 GDP contribution – levels and growth rates

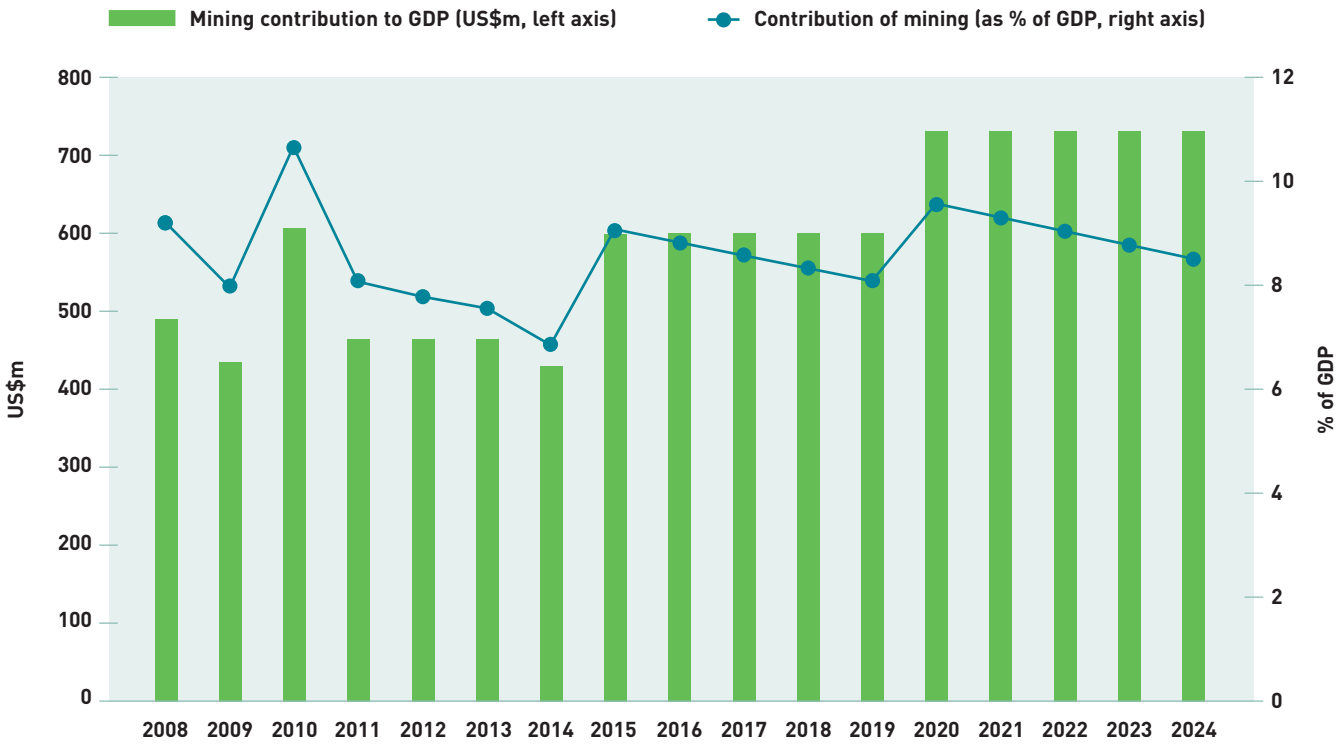
MMG Sepon and PBM contribute a considerable amount to the economy in several dimensions as we have already seen. One way to capture this contribution in the broadest national terms is to calculate the value added of the mining industry, that is, payments to factors of production (in principle, sales minus purchased inputs). By looking at the profits of the mining companies and suppliers plus their payments to labour, it is possible to estimate the value that this industry is creating for the economy.[45] In 2008, MMG Sepon and PBM together created about US$497 million in value for the economy. There was a slight decline in 2009 to US$440 million. However, the figure is thought to have increased to US$612 million in 2010 and is also expected to continue rising in the future. The value added to the country is projected to be around US$460 million annually for 2011–14 and is envisaged to increase to US$600 million per annum in the period 2015–19 and over US$700 million in 2020–24 (see Figure 4.4). These projections are subject to certain conservative assumptions about the prices of gold and copper (US$900 per ounce for gold and US$5000 per tonne for copper throughout the period), as well as to the assumption that both mining projects will indeed be able to expand in accordance with their current plans.[46]

Of the total value added, the profit before interest, tax, depreciation and amortization (EBITDA) represents the largest share, accounting for nearly 90% of the total value added. This is then followed by spending on labour, which provides about 10% of the mine's value added. While detracting from the strict interpretation of GDP (according to national accounting conventions), not all of this value added will ultimately be retained in the country. For example, profits paid to overseas owners or spending on international labour is ultimately repatriated abroad, thus reducing the amount left in the country.

45 The figures on the GDP contribution of the two large mines are somewhat understated because we were only able to get a statement from one company on interest payments. Including all interest payments on debt would have increased the contribution to GDP by a small amount.

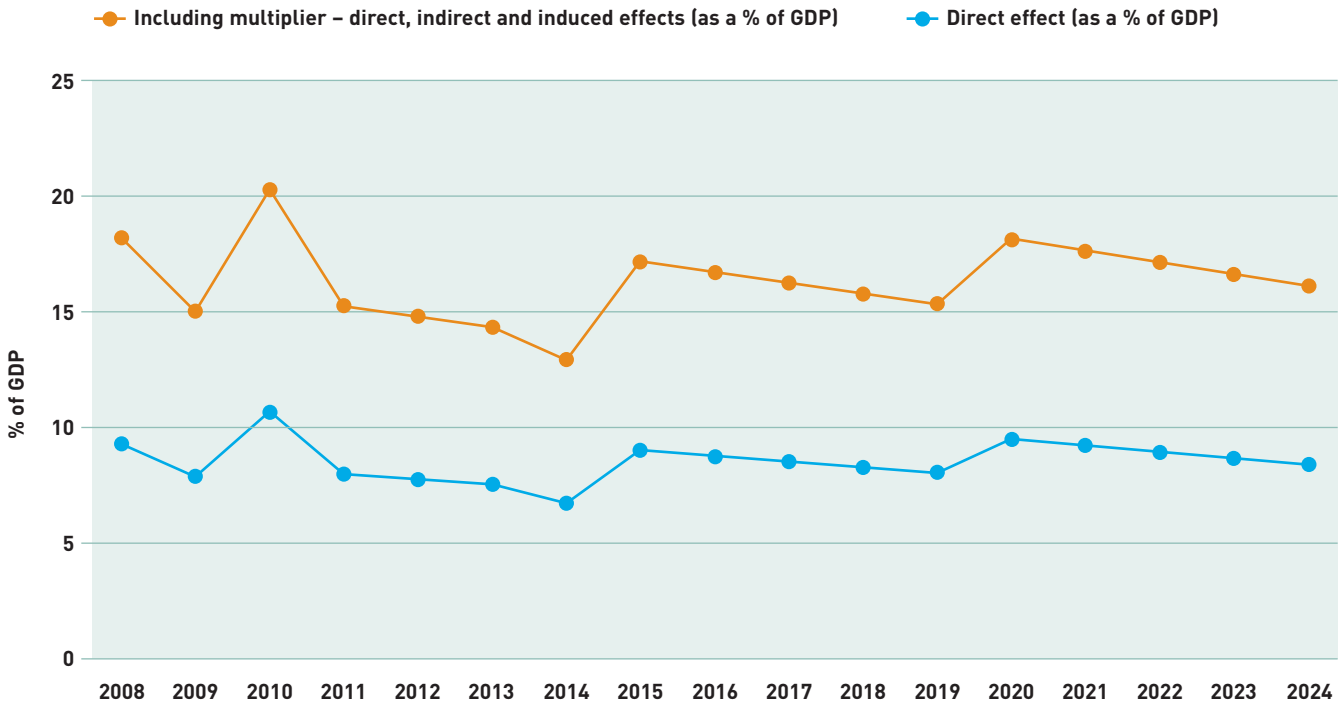
46 We have been conservative and assumed there is no price inflation for gold and copper, or the inputs to the operation, but have assumed a 3% per annum increase in GDP. The future price of silver is estimated at US$11.7 per ounce.

Figure 4.4: GDP: Contribution from mining sector and direct effect



Source: Authors' calculations based on data gathered from the World Bank, MMG Sepon and PBM.

Figure 4.5: GDP: Direct, indirect and induced contributions



Source: Authors' calculation based on data provided by MMG Sepon and PBM.

We estimate that the direct contribution to the national GDP for the two mining companies together is currently around 10% of the total for 2008–10 and, as the economy is projected to grow, this will decline to around 8.5% in the period 2011–24. The overall contribution – which measures the direct plus the *indirect and induced contributions* to national GDP – would be expected to replicate the direct effect but be larger by a substantial order of magnitude.[47] Specifically, when domestically produced goods and services are consumed in the production process and the wages and salaries paid to labour (national, regional and local) are spent in country there will be a significant *multiplier* effect. Where the mines have made efforts to integrate their operations into the local economies and employ national staff wherever possible, the multiplier effects will be correspondingly more important. To this end, we have used earlier work conducted by the Centre for International Economics for MMG Sepon that identified a conservative multiplier of 1.9 to use in the estimate and show that a 10% direct GDP contribution during the next few years would equate to around 20% when including indirect and induced effects (see Figure 4.5).

4.4 Government revenues

This section provides a detailed quantified assessment of the probable impact of MMG Sepon and PBM on government revenues and the overall fiscal position of the country going forward to 2024. The analysis examines not only the variety of taxes and other levies paid to government, but also the large dividend payments being paid on the 10% government shareholding in both companies.

Both companies contribute significantly to the revenues of the government in terms of both tax and non-tax payments, accounting for 11.6% of the government's overall tax revenues in 2009. The main revenues going to the government are corporate income tax, royalties, personal income tax on salaries and dividends on the 10% equity holding. As recently as 2003, the payments were only US$1 million but these then jumped dramatically to US$129 million in 2007–08 due to high commodity prices before falling back to US$95 million in 2009 as a result of the global financial crisis. ***The total payment to government between the years 2003 and 2010 by the two mines is estimated at around US$635 million,*** of which around US$45 million was paid by PBM and US$590 million by MMG Sepon. As the younger PBM project matures and expands, these relative contributions are likely to change fundamentally as PBM becomes increasingly profitable and is able to pay an increasing amount in tax and dividends. For example, PBM expected to pay an initial profit tax instalment of around US$6 million for 2010, rising to US$40 million in 2011, with potentially similar increases in subsequent years.

47 These are based on multipliers relating mine production to GDP of 0.9 throughout the projection.

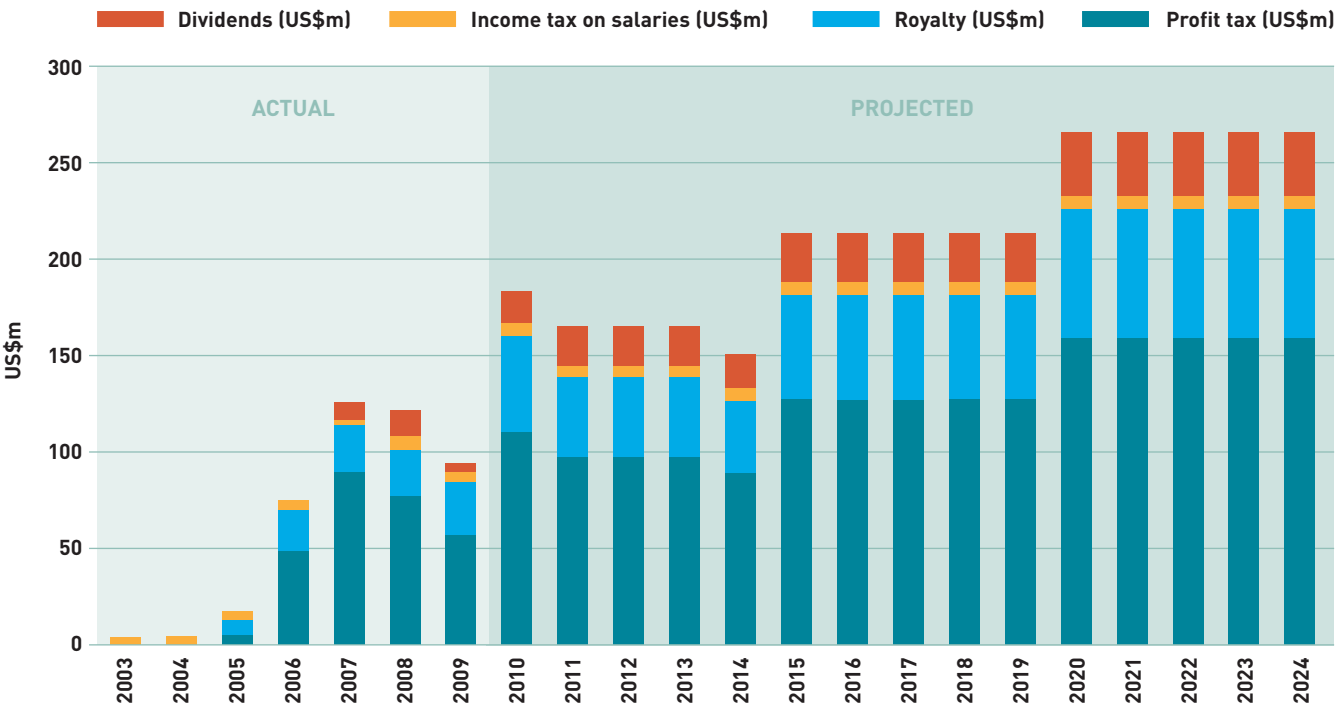
Our estimates are that for 2010 the total payment to government would be around US$185 million and we estimate a projection of this contribution to government of around US$166 million annually in the period 2011–14, rising to around US$215 million for the period 2015–19 and US$267 million for the period 2020–24 (see Figure 4.6). These figures take into account rebates on VAT and other indirect taxes paid by the companies on purchased supplies (see Box 4.1). Taxes on corporate profits are likely to be the most significant contributor to government revenues in the coming years – at around US$100 million from the two mines alone – and will comprise around 60% of the total taxes paid. The next largest fiscal contribution to government is royalty payments, which are expected to total around US$40 million per annum over the next five years. It should be noted that these contributions are based entirely on the assumption that the existing development plans of both the main mines will be able to proceed as planned.

Box 4.1 Encouraging local procurement through an operating rebate system

Most countries allow exporting firms to reclaim indirect taxes such as value added or turnover taxes in the calculation of their overall tax liabilities: the reason being that most countries also levy taxes on imported goods. Thus, if an exporter first pays tax on all purchased inputs and then has a tax levied on the finished product in the importing country, taxes have, in effect, been levied twice, by the exporting and the importing countries. Since this makes it difficult for the exporting firm to compete, it is usually allowed to *reclaim taxes* paid. This applies to all exporters, whether they are in the mining sector or not, and to taxes on all inputs, whether imported or not.

If a mining company pays duties on imported goods, it can be argued that it is placed in a disadvantageous competitive position compared with other mining companies that do not have to pay such duties. The exact practice used in applying these principles vary from one country to another, but most allow exporters to recover import duties. By not having an operating rebate system there is an inherent disincentive to buy from local producers or importers.

Figure 4.6: Dividends, income tax, royalties, and profit tax, 2003–24



Source: MMG Sepon and PBM.

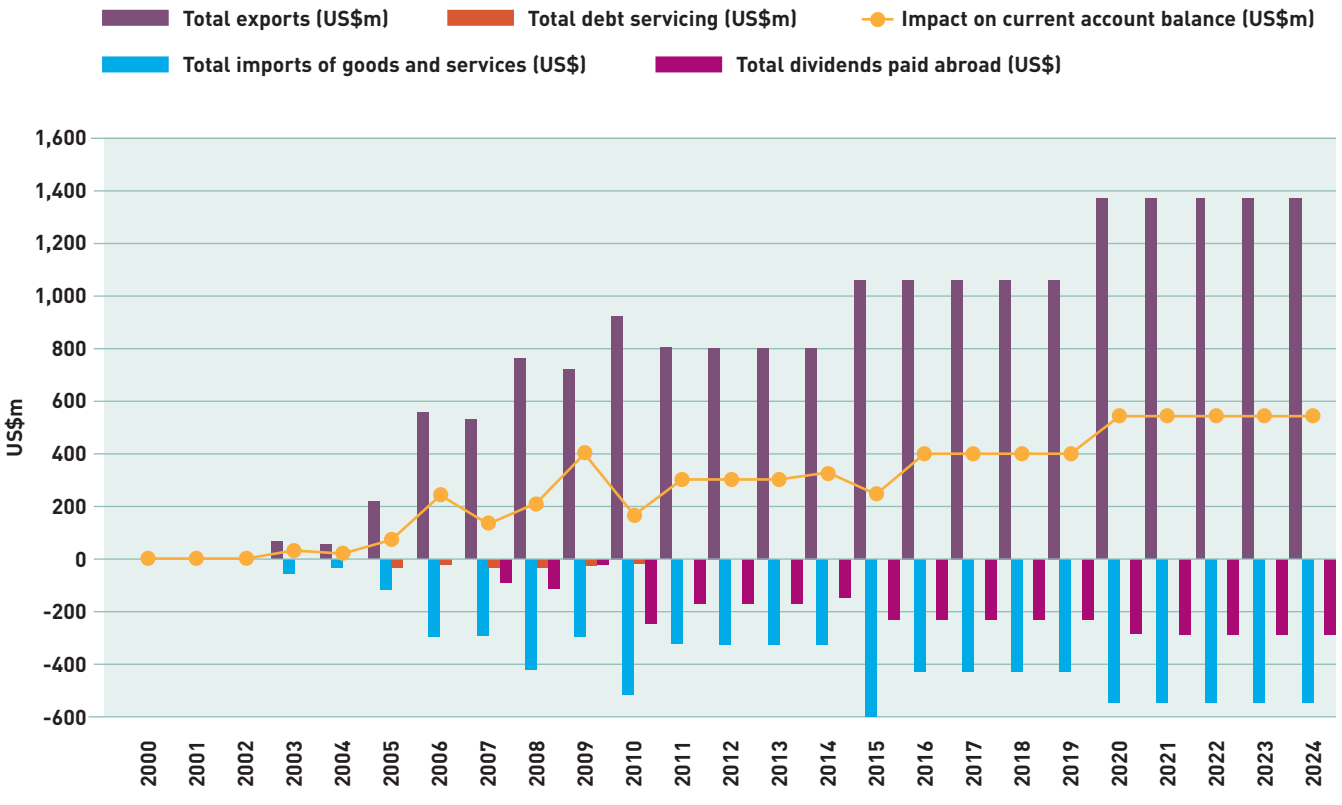
4.5 Balance of payments

This section provides a quantitative assessment of the historical and future impacts of the mines on the country's present balance of payments situation, including both the current account and capital account components.

Current account

Figure 4.7 shows that the exports from MMG Sepon and PBM together have experienced continuous growth as a result of the increase in gold and copper prices in recent years. The value of such exports is projected to increase steadily until 2024 (when our analysis ends). The projections suggest that imports will increase broadly in line with exports, and so will rise from US$30 million to US$300 million by 2014. The stream of dividends paid abroad, on the other hand, is expected to increase as after-tax profits rise. Overall, it seems certain that the surplus on the current account of the balance of payments (the line in Figure 4.7) will increase further as these various component elements change.[48]

Figure 4.7: Contribution to the current account



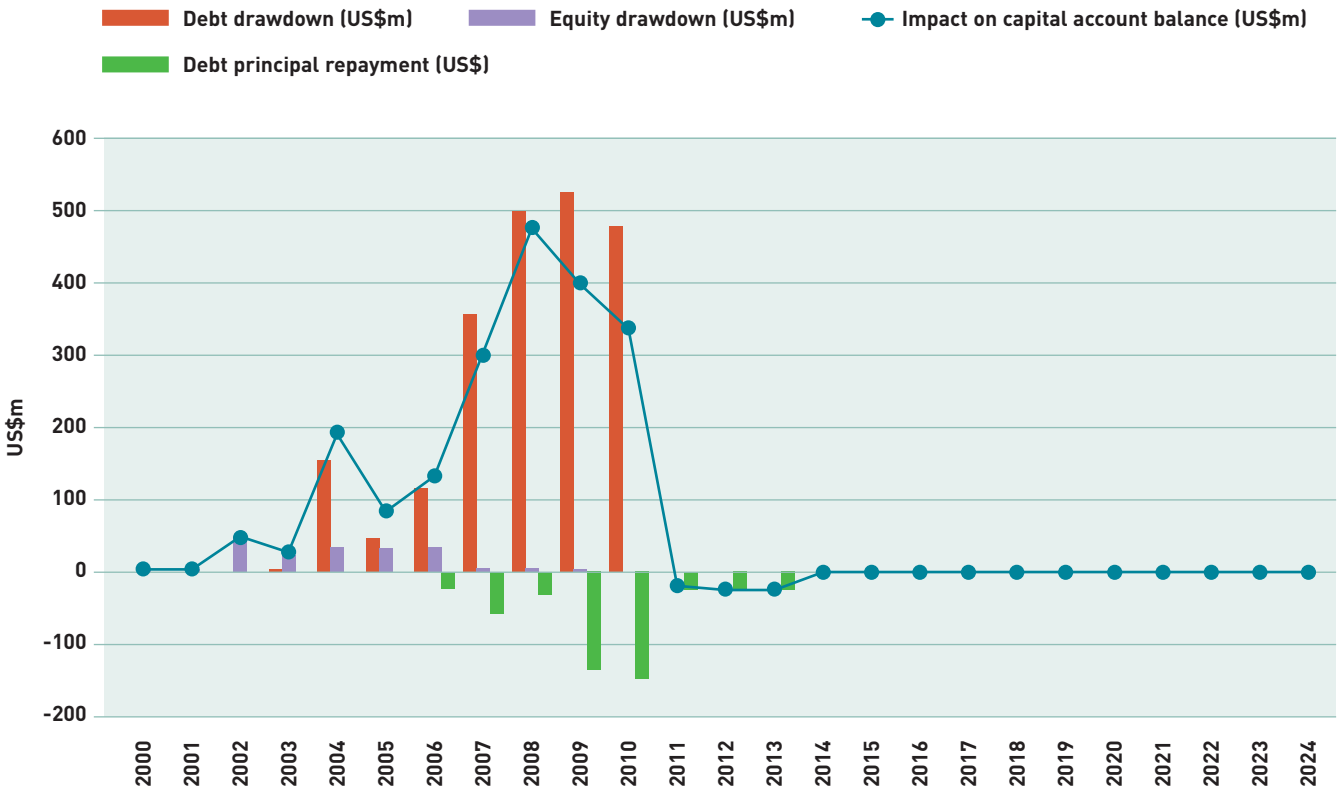
Source: MMG Sepon and PBM.

48 We were only able to get data on debt servicing for one mine, so these figures overstate the contribution to the current account by a small amount.

Capital account

The surplus in the capital account balance was small in the initial two years when MMG Sepon started, due to the costs of construction work. However, during the period 2003–08, the surplus in the capital account rose sharply, as a result of the rapid increase in debt drawn down: in particular for 2006–08 because of the massive investments in PBM. In the future period 2011–13, the capital account is projected to run at a deficit as debt principal is repaid overseas (see Figure 4.8). However, these figures significantly understate the true magnitude of the total repayments of loan principal repayments. This is because the data available to us only included data on debt principal repayments for one of the two mines.

Figure 4.8: Contribution to the capital account

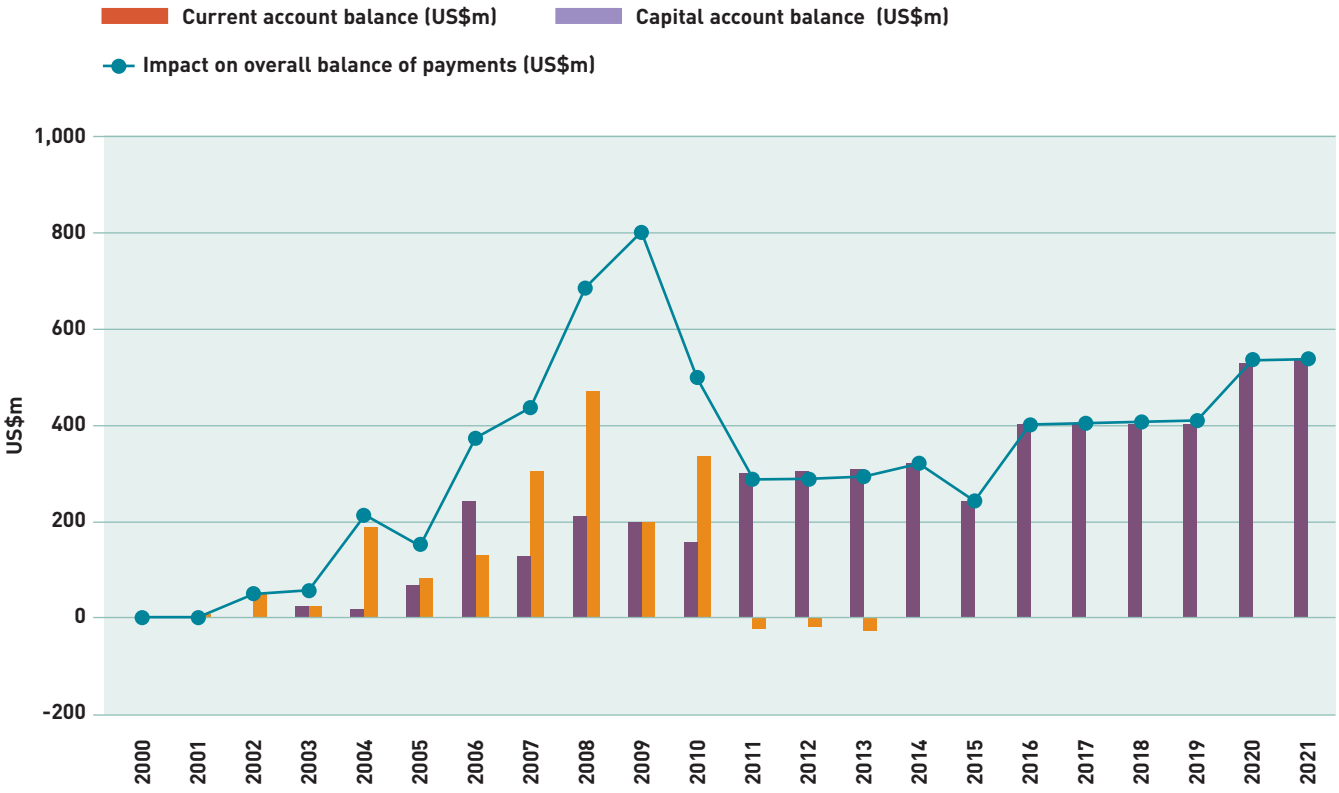


Source: MMG Sepon and PBM.

Overall balance

By combining the data on the current account and the capital account, we obtain information on the overall balance of payments contribution for the full life span of the two mines. In the early years of the projects, the impact on the overall balance of payments was small. However, it improved continually between 2003 and 2009 due mainly to a large surplus on the capital account as a result of FDI inflows – unmatched at that stage by any debt repayments. This overall surplus has decreased in recent years, due to the emerging deficit in the capital account shown in Figure 4.8. But once the impact of net exports kicks in (as shown in Figure 4.7), the overall balance of payments improves significantly to about 2010 after which the two mines make a large ongoing net contribution as shown in Figure 4.9 – see the continuous line.

Figure 4.9: Contribution to the overall balance of payments



Source: MMG Sepon and PBM.

5

IMPACT OF MINING ON GOVERNANCE STRUCTURES, INSTITUTIONS AND POLICIES

5. Impact of mining on governance structures, institutions and policies

One of the criticisms of resource projects raised in the context of the "resource curse" literature is that resource revenues have the potential to erode governance structures and undermine both the appetite and the possibilities for positive economic and political reforms. The concept of the "predatory state" represents merely the more extreme manifestation of this possible situation. ICMM's REi strongly emphasizes that institutions and governance structures are a key variable for enhancing the positive contribution of the mining sector to broader economic and social development and poverty reduction. This section analyzes this aspect of mining's impact in the Lao PDR.

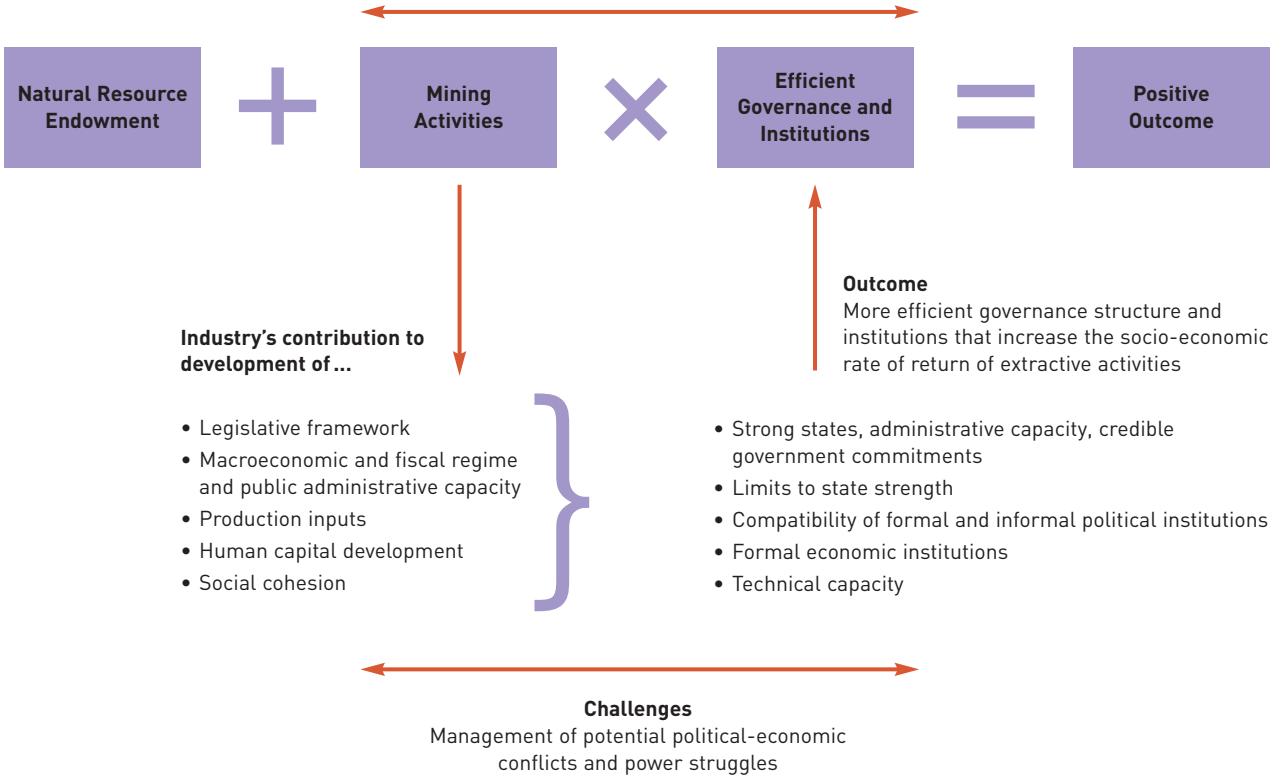
5.1 Overview - the importance of good governance and efficient institutions

There are common features of governance structures and institutions across high-performance mining countries that enhance the performance of their markets and help to foster sustainable private-sector activities. Some of these features are shown in Figure 5.1. These features are typically missing or working poorly in countries where the "resource curse" has indeed been a major problem. These common features of structures and institutions in turn can be argued to have made some countries relatively more effective in avoiding a negative resource impact than comparator countries where the governance and institutional development is weaker. Note that it is the common features and not the institutions themselves that are emphasized. Figure 5.1 depicts, in general terms, this link between natural resource extraction and differences in socio-economic development and indicates also some of the linkages to and from institutions and governance structures that can involve the mining activity.

The five main characteristics of efficient governance and institutions (at the right-hand and lower part of the diagram) represent the high-level or common features of sound governance structures. These are:

- strong states including reasonable administrative capacity, and credible government commitments
- some limits to state strength which can restrain any abusive use of power by state agencies
- compatibility of formal and informal political institutions
- formal economic institutions both in the government system with clear roles and responsibilities and accountability
- reasonable levels of technical capacity in both government and non-governmental institutions.

Figure 5.1 The composition of effective governance



Source: ICMM publication *The Analytical Framework – The Challenge of Mineral Wealth: Using resource endowments to foster sustainable development* (August 2006).

However, these five high-level conditions for effective governance obviously need to emerge (historically over time) from some processes and sets of actions. The left-hand side of Figure 5.1 lists some key areas of activity that are normally associated with those processes and actions. These are:

- the legislative framework – its quality and scope
- macroeconomic and fiscal regime and public administrative capacity – quality and implementation
- production inputs – type, variety, ownership etc.
- human capital development
- social cohesion (or lack of it).

Each of these five elements represents a complex and evolving maze of influences some of which are deep-seated in a society (e.g. the cultural and ethnic balances) and others which will be influenced and changed by both policy and emerging external forces (e.g. the patterns of production). The various arrows indicate the potentially rich interactive relationship between a major investment in a country such as a mining investment and the performance of the governance system.

Figure 5.1 suggests that good governance may be constrained by different factors, including a wide range of potential social, economic and political conflicts as well as power struggles. In order to deal effectively with governance constraints, it is important to understand how they are created, how they function and what factors may contribute to reinforcing or weakening them. Even more important is to get a grasp of the relationship between governance constraints and decision-making processes – how the former may have a direct influence over the latter but also vice versa.

The social science of "Political economy" is the study of the interrelationships between political and economic processes. It provides useful tools to enhance the understanding of the relationship between decision-making processes – how choices are made, how they are transformed into policies and how they are finally implemented, which in turn is essential to improving governance. For instance, exploring the decision-making processes from a stakeholder perspective may shed light on issues such as the motivation and incentives of the various different actors (local communities, national governments, mine workers etc.) involved in those policy processes. Similarly, exploring the power relationships among different agents or groups of agents may provide important clues to explain, for example, why a regulatory framework governing the small-scale mining sector works like it does, or why a fiscal regime for extractive industries penalizes or favours certain types of activities.[49]

5.2 Background to governance in the Lao PDR

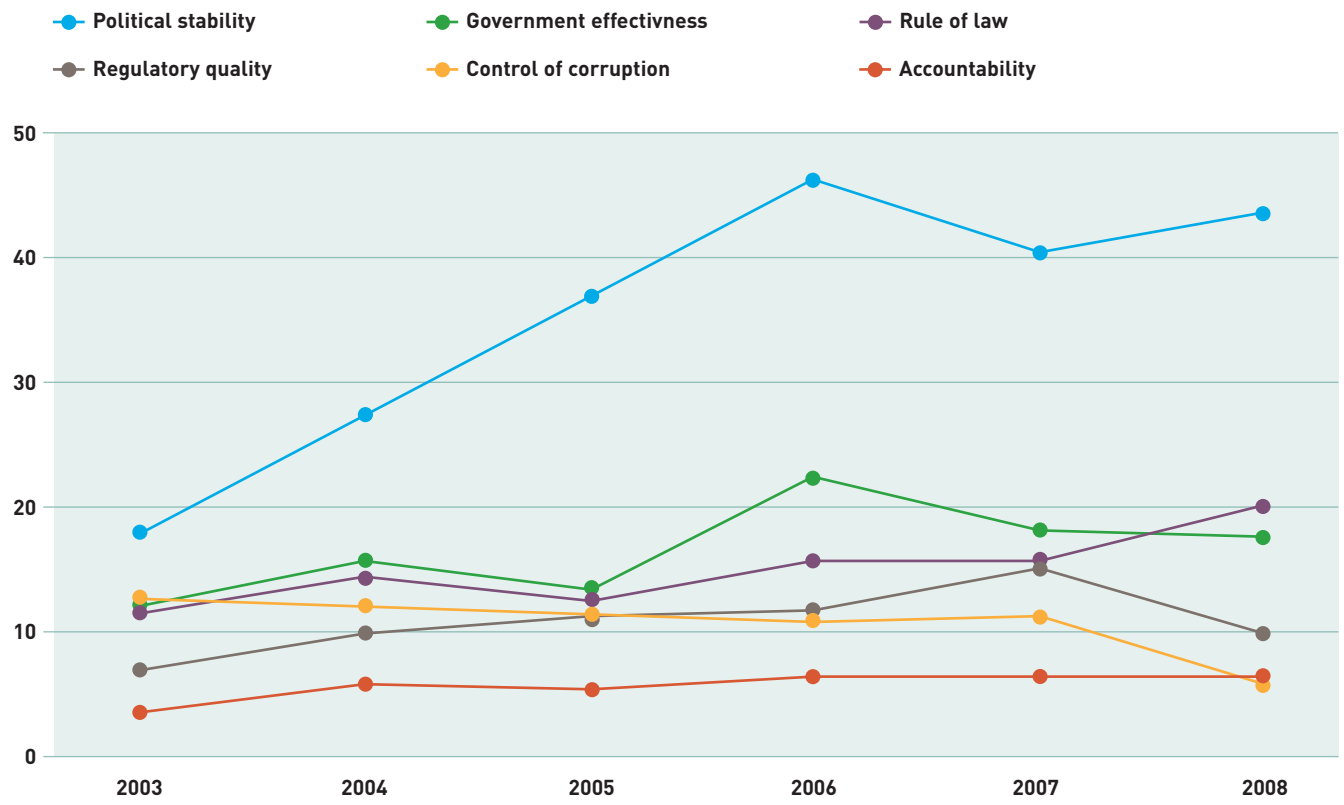
In the Lao PDR, significant attention has been placed on good governance by the World Bank, the Asian Development Bank and other international organizations through their technical assistance programs, particularly those in the hydropower sector. The country in recent years has made major progress in strengthening its institutions, legal system and public sector financial management: some of the key ingredients of improving "governance" suggested by Figure 5.1. A possible explanation for the enhanced economic performance of the Lao PDR since 2000 relates to these improvements to the quality of governance during that period. World Bank Worldwide Governance Indicators (WGI), which have been available for the Lao PDR and most other countries since 1996, provide one way to encapsulate statistically some of the very complex issues suggested by the overview in Figure 5.1. Specifically, they present an aggregate overview of six dimensions of the quality of governance:

- voice and accountability
- political stability, including absence of violence/terrorism
- government effectiveness
- regulatory quality
- rule of law
- control of corruption.

The actual data on these indicators are set down in Figure 5.2. For the Lao PDR, the quality of government (including governance, sound exchange rate policies and prudent macroeconomic management) has been an important factor affecting economic development. According to the World Bank's *Governance Matters* (2009b), the quality of governance in the Lao PDR has improved in recent years, particularly in terms of political stability and the rule of law. Some indicators of government quality – such as government effectiveness and regulatory quality – have increased only slightly and are offset by, for example, "control of corruption", which on these measures declined (worsened) slightly during the period 2003–08 (see Figure 5.2).

49 When exploring the links between governance and decision-making processes there are many other issues that can be taken into consideration, such as whether certain agents (particularly local communities) participate in or are excluded from those processes, the existence of alliances between agents to favour a specific institutional response to a given problem and the functioning of communication channels between different institutional layers. In fact, the approach used will vary depending on whether we want to improve governance in a systemic way, in which case, a sector-level analysis of the mining sector will be required; or if we want to focus on a specific constraint, in which case we will carry out a problem-driven analysis focused on one particular issue or set of issues affecting governance.

Figure 5.2: World Bank governance indicators, 2003–2008



Source: World Bank.

The WGI are mainly intended to describe a country's relative position vis-a-vis other countries. However, a change over time does indicate something real if the underlying sources of information used to calculate the country's score are the same in each year.[50]

However, few of the indexes incorporated into the WGI cover the Lao PDR in any depth. Only two indexes from the World Bank and the Asian Development Bank included in the WGI benefit from on-the-ground in-depth knowledge. ***The Asian Development Bank's Country Policy and Institutional Assessments increased from 0.33 in 2005 to 0.50 in 2008 and the World Bank's corresponding measure rose from 0.35 to 0.45 over the same period. These both indicate fairly dramatic improvements***.

Objective measures indicate that, across a broad spectrum of measures, the quality of governance in the Lao PDR has certainly improved since the mining and hydropower sectors increased in importance to the economy. Inversely, there is no evidence in these various measures that mining activity and large mining revenues in the hands of the government have undermined good governance. However, it is nonetheless evident that there is significant room for improvement within the government regulatory system and more broadly in developing the Lao PDR's institutional capability. The following sections describe in further detail the government system and outline areas where the mining sector has a possible role to play.

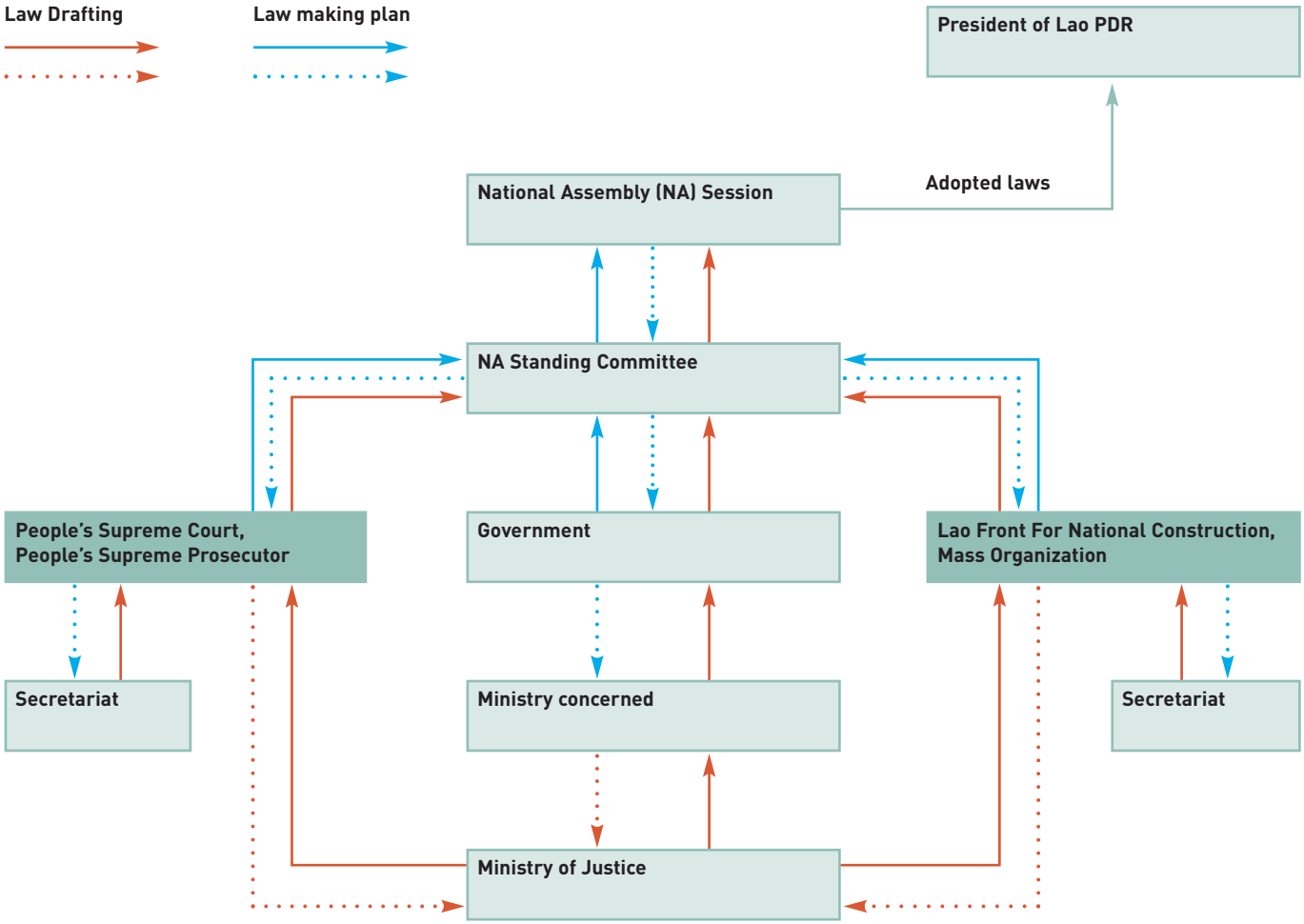
50 The addition of new sources of information in calculating governance indicators could affect a country's score without implying a significant change in underlying performance. Similarly, changes over time in relative performance may also reflect the addition of new countries to the aggregate indicator. For example, if a country is added with a governance rating that is high relative to those countries already in the index, then all the countries which rank lower than this country will receive lower scores.

5.3 Legal and regulatory framework

From the founding of the People's Democratic Republic in 1975 up to 1991, the country was administered by decree. In 1991, the first post-revolution constitution was enacted and this was subsequently revised in 2003. In 2003, there were only 19 qualified lawyers in the country. Consequently the rule of law, and the legal and regulatory frameworks more generally, do not benefit from a long history in the Lao PDR: they are developing from a low base. The legislative process is documented in Figure 5.3.

The government has invested significant resources in increasing legal awareness and training, particularly in commercial and public administration. The process has been supported by donor assistance from international organizations including UNDP and the World Bank.

Figure 5.3: Legislative process in the Lao PDR



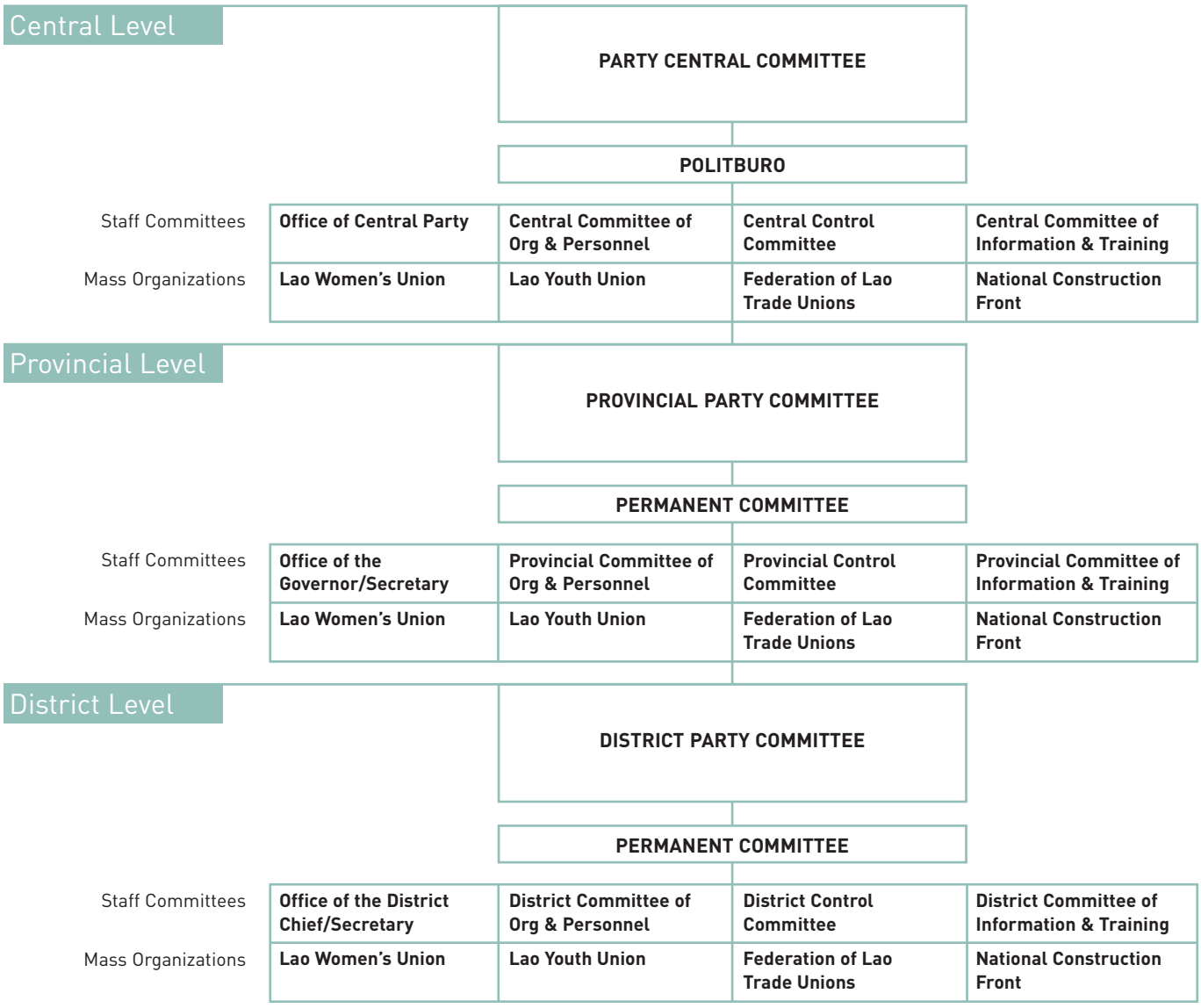
Source: National Assembly.

5.4 Political-administrative system

The Lao PDR Constitution sets out the roles and responsibilities of the various institutions of the state, including the courts, the National Assembly (NA) and the executive arm of government. Executive administration is led by the prime minister and his office, which oversees the operation of government ministries and agencies. These institutions overlay provincial and district local government. The NA is comprised of members representing the 17 provinces/municipalities. It is responsible for enacting the laws of the country and commenting on the executive's performance in implementing the national five-year development plans. The NA has become increasingly active in recent years, as evidenced by increased legislative activity and the increased questioning of government performance. NA debates are now televised and constituents have greater access to their members. This is an important example of the "limits to state strength" as indicated in Figure 5.1.

The LPRP is the only political party in the Lao PDR and the majority of executive and parliamentary positions are filled from within its ranks. The LPRP mirrors government organization at the central, provincial and local level (see Figure 5.4).

Figure 5.4: Structure of the LPRP



Source: UNDP GPAR Project.

5.5 Implications of decentralization

The provinces of the Lao PDR have traditionally enjoyed relatively high levels of independence from central government, a position assisted by the lack of infrastructure and consequent remoteness from central control. The governor of a province is usually appointed from senior LPRP members, but the bulk of the local administration is drawn from the local province.

The Lao PDR has continued to support the decentralization of decision making to the provinces where it is possible. Major natural resource investors historically dealt with the central government, with which the main concession agreements were signed. The projects were directed and administered centrally. However, responsibility for a number of projects has now been devolved to the provinces in order to improve oversight and to ensure that those living in the immediate project environment have a greater say in decision making affecting the local community.

The devolution of administration reveals a partial solution to a problem that has developed with the foreign investment concession system. The central government in the past had sole responsibility for determining the merits of any mining project and, in particular for determining whether or not it was in the national interest. However, the resulting imposition on local communities of centrally mandated and approved investment projects has lacked local buy-in. The more recent return to a more locally-directed decision making process has increased local voice, even though key aspects of the resource agreements are that benefits from projects, particularly taxation, flow to the central government. This remains a source of possible tension.

5.6 Fiscal issues at the national and sub-national level

The Lao PDR experimented briefly with decentralizing tax collection in the early 1990s. The experiment led to falling revenue collection and taxation was rapidly re-centralized. For a project such as MMG Sepon, this means, for example, that only approximately US$3.5 million of the money paid as salary taxes flows directly to the province. The province then needs to rely predominantly on a centrally determined allocation to fund its own budget. Certainly, the central allocation to the province does not reflect the quantum of revenue originating from the project. ***Consequently, the provinces may see little fiscal benefit from a major project but may nonetheless experience a drain on administrative resources due to the increased demands the project places on local, district and provincial administrations.***

A further problem is that the task of tax administration associated with larger projects is also significant, and it involves a sometime confusing overlay of central and provincial laws and regulations, as well as the foreign investment concessions. Administration of different contractors is often inconsistent and contractors have difficulty knowing which level of the government's regulation will apply in any given context. For example, government authorities complain that sub-contractors are not paying regional taxes but contractors claim that they are paying tax centrally - either due to confusion or because of some earlier instructions from the central authorities.

5.7 Private sector and human capital development

The need for capacity building within government institutions has required significant investment by both PBM and MMG Sepon in government training and development. Both companies have on-site government officials engaged in a mix of monitoring and development activities. The officials rotate through the project on two-month cycles and during this time learn about the operations and the rationale for business decisions. The companies regularly provide seminars and updates on developments in the mining sector and project-specific activities.

MMG Sepon works with an inter-government committee to expand understanding of the project among various agencies. They have also established a Sustainability Steering Committee, focused on mine closure and beyond, which draws together various government and provincial level authorities. A significant investment is made in providing opportunities to visit other international operations and attend international conferences to increase capability within the departments. In these respects and others the two mining companies are making an important contribution to the capacity and skill base of the government institutions who have regulatory responsibility for particular aspects of their operations.

5.8 Consequences of governance evolution for FDI

The evolution of the Lao PDR legal system and the improvement of institutional capability have benefited the mining sector by increasing government awareness and understanding of project needs. The revisions of the Mining Law and the Foreign Investment Law have refined earlier laws, while also maintaining certainty for investors. Increased capability within the Water Resources and Environment Agency and the Ministry of Energy and Mines has strengthened the government's oversight and independent monitoring capability, a development welcomed by PBM and MMG Sepon. Government verification of reports increases validity and acceptance of performance.

However, the rapid increase in the volumes of laws has led to some inconsistencies within the primary laws governing the mining sector. The Taxation Law, Mining Law, Foreign Investment Law and the foreign investment concessions all operate within a similar space. ***The rapid development of laws and the institutions that implement them has meant that government officials have not always acquired a broad appreciation of the interrelationship of the laws***. For example, officials within the Ministry of Finance may not intimately know foreign investment laws. As the legal system develops further, conflict with the long-established foreign investment projects may increase, which may jeopardise the stability and certainty that foreign investors require. Issues such as exploration tenement size and import duty exemptions are examples of where the interplay between legislative development and existing concessions is already causing difficulties (see Box 4.1).

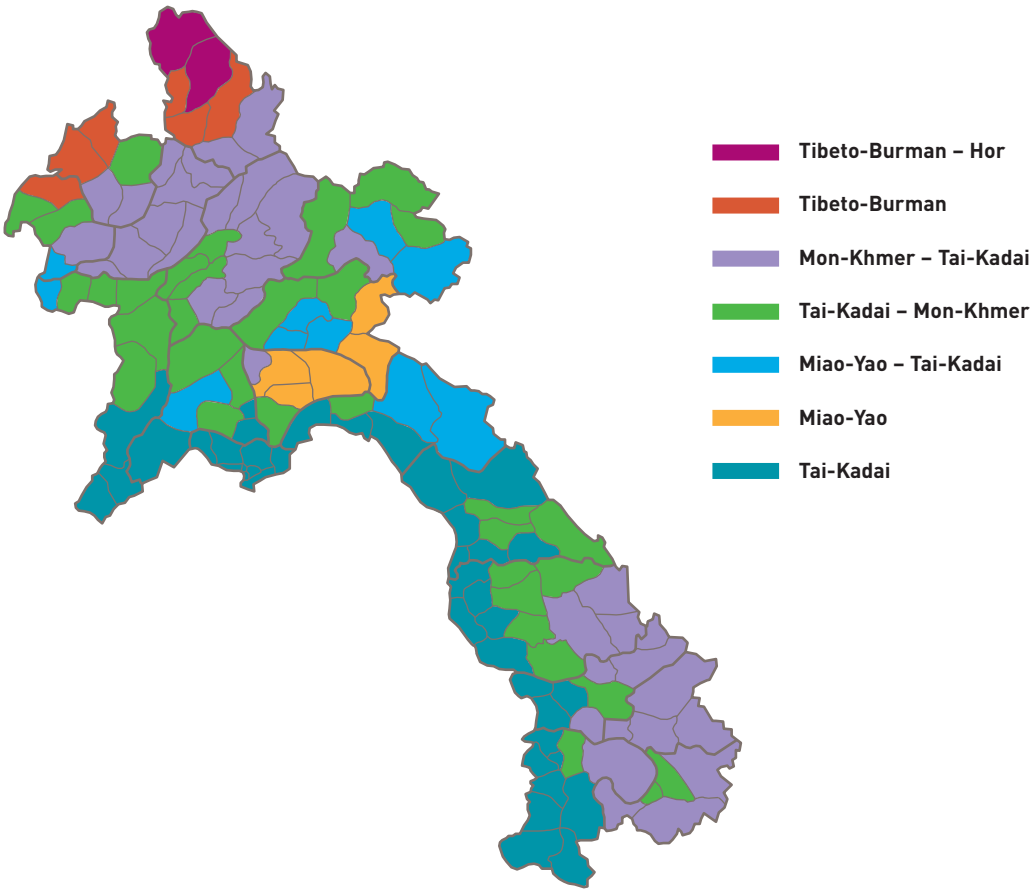
5.9 Social cohesion

The population of the Lao PDR consists of a large number of ethnic groups and many minorities. Historically, a three-category system was used to divide ethnic groups according to whether they usually populated lowland, midland or upland areas (Lao Loum, Lao Theung and Lao Soung). These classifications are less frequently used nowadays, in favour of individual ethnic group names. There are officially 49 ethnic groups in the Lao PDR, according to the Lao Front for National Construction (see Figure 5.5).

Culturally, a strong emphasis is placed on social cohesion within the country due to the diversity of the ethnic mix and the potential for social conflict between people with such diverse backgrounds. Beyond the geographic divisions between where villages are located, there is an economic divide between the groups, with the majority of the benefits of the Lao PDR's rapid economic growth being enjoyed by those in the lowland areas (Lao Loum – also the largest ethnic group). Economic opportunities in the more remote mountainous areas are limited to agriculture. Upland agriculture is less productive than lowland opportunities where irrigation is a possibility, particularly for rice farming.

The mining sector can have a positive impact on social cohesion in three ways. First, for geological reasons, mining revenues have been redistributed across the country, favouring the poorest districts where ethnic minority groups are most highly represented. Second, mining companies operate largely in rural and remote areas where infrastructure and alternative development opportunities are scarce. By bringing economic opportunities and some new infrastructure to these areas they can improve the economic well-being of areas where ethnic minorities are predominant. Finally, by pursuing equal opportunity policies, inequalities between groups can be reduced – as is the case at MMG Sepon (see Annex A).

Figure 5.5: Map of the ethno-linguistic families



Source: Center for Southeast Asian Studies, Northern Illinois University.

6

MAIN CONCLUSIONS AND IMPLICATIONS FOR POLICY REFORMS

6. Main conclusions and implications for policy reforms

This study began by using the analogy of the inverted pyramid which illustrates the findings from previous studies conducted as part of the ICMM REi. In some cases, the sheer weight of all the positive *national* benefits weigh down heavily on *local* communities, which experience many of the negative impacts of mining but few real benefits beyond employment. On this occasion however, the study has found that the broad positive benefits accruing at the national level (taxes, foreign exchange earnings) are complemented quite significantly by positive outcomes at the local level (considerable income growth and improved economic and social indicators).

At the local level, a positive picture also emerges of local communities interacting and working with the mines cohesively to ensure that they are economically integrated into their surroundings and that negative impacts are minimized (e.g. by controlling in-migration and robust environmental management). While not everyone has a job guaranteed in the mine, and with the expansion of the mine's footprint this could cause discontent in communities, many people do derive a considerable income and livelihood from the mine (directly or otherwise). This is most clearly seen in the massive increases in incomes at the local level. The initiatives of the mines in partnership with lower levels of government and communities to provide training and effective community development spending, as well as increasing local procurement, have all been critically important in widening the bottom of the pyramid.[51]

Indeed, it could be said that, rather than the weight of all the positive benefits pressing down on the local communities, in the Lao PDR case the downside to all these benefits could emerge at the national level. ***Because of the large macroeconomic contributions which the mines make, relative to the size of the national economy, if anything there is a risk that without closely managing the macroeconomic situation an appreciating exchange rate and overreliance on mineral revenues could over time result in a narrowing of the top of the inverted pyramid***. While the quality of macroeconomic management in the Lao PDR to date has been good, with both trade and budget deficits falling, concurrent with stable inflation and exchange rates, a growing minerals sector raises some unique macroeconomic management challenges for the future.

More generally, the challenge for the Lao PDR will be to first ***ensure that the quality of the institutions, governance and policies are maintained and even strengthened and that the manner in which mining investments (particularly those involving the less experienced miners) relate to these arrangements is more closely monitored to eliminate unacceptable practices***.

To accomplish this task, it could be useful to conduct an in-depth supplementary analysis of how policy decisions affecting the mining sector are taken and implemented. The aim of this analysis would be to (a) identify those factors that are today constraining the development of more efficient institutions and better governance and (b) define courses of action to abate those factors.

One of the main macroeconomic challenges will be to ensure public financial management is predictable and transparent, and insulated from the fortunes of the two mines and changing international commodity prices. In this regard, the IMF has pointed out that some pro-cyclical spending appears to be taking place. Assessing the extent to which this presents a risk is complicated by the government's off-budget expenditures.

A further high level issue is that the ***opportunities to grow the wider economy around the mining sector should be identified more completely and integrated more fully into national growth and poverty-reduction strategies***. This would most obviously include improvements in the wider investment environment to ensure that local firms can better respond to the business opportunities to supply the mines and build a competitive basis to supply the Lao PDR and the wider region more generally. The economic policies and improved governance that have already stimulated investment in mining and associated sub-sectors (construction and services) have led to extremely important developments in reducing poverty at a national and local level. By building on this strengthened economic growth through better governance of the sector and by seeing mining as a positive opportunity to broaden wider economic opportunities, the government can help to relieve some of the population growth pressures that the Lao PDR faces. Modern capital-intensive mining will never be a large direct employer but when combined with its associated supply industries it could be an extremely important driver of private-sector development.

51 So far, local inflationary pressures have not emerged as a problem but this should be monitored closely.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A

ANNEXES

Annex A
Gender – Impacts of the Sepon mine on women

While there remains considerable scope for research into the impact on women of the Sepon mine, particularly in the areas of health and household workloads, some effects are evident. However, it is important to bear in mind that while some changes have an impact on all women, others have varied effects influenced by a woman's ethnicity, by her marital status or, to a smaller degree, by her place of birth.

Impacts on all women in the mine area
The main impacts of the mine that affect all women (and many of which also affect men) in the area include:

- Since 2004, electricity for domestic use has spread into many villages, bringing with it the potential to change shopping and cooking habits (through the availability of refrigerators), different patterns of daily activity (later evening hours through availability of lighting) and greatly increased information about the world beyond Vilabouly (through television).
- The potential for greatly increased personal mobility (the spread of motorcycles) and communication (mobile phones).
- Reduced dependence on subsistence activities and greater reliance on cash in the household economy. This has affected males more than females since the reduction in gathering of non-timber forest products, largely a female role, has declined far less than the frequency of fishing and hunting (largely male roles). For example, despite the availability of electricity, almost all households still cook using collected firewood, whatever their cash income.
- Reduced domestic labour available as men and some women (especially unmarried young women) working for wages are no longer available for helping out in the home or garden. Similarly, the increase in the availability of education has reduced the economic value to the households of school-age children. However, since the amount of work in each household has declined only marginally, if at all, this adds to married women's workloads. This point is reinforced by the fact that family sizes in the villages closest to the mine have steadily declined since 2001 (in 2001 Lao households averaged 6.8 persons and Makong/Tri households averaged 5.9; by 2009 both figures were 5.5).
- The local availability of a greatly increased range of household consumer goods.

Many of these changes are, for many people, generally positive but all involve adjustment to new ways of life and in any society any change, let alone the major changes that have taken place so quickly in Vilabouly, creates problems as well as opportunities. Perhaps the most significant change has been the opportunity for employment. At the end of 2009, more than a quarter of all females of working age living in the communities nearest the mine worked for wages, almost all of them having jobs with MMG Sepon. Although this proportion has declined since 2005 (when it was 32%), the actual number of female employees has slowly risen since then.

Impacts on women are differentiated by ethnicity
Makong/Tri-speaking females and Lao Loum-speaking females start from rather different economic and social circumstances and the consequences of changes brought by the mine on their lives also necessarily differ. For example, prior to the arrival of MMG Sepon it was normal among Makong/Tri-speaking girls to marry in their mid-teens. Thus, some of the opportunities that the mine brought, such as improved access to education and employment, were often not available to them except where individuals chose to go against custom. In either case, this has caused tensions for the individuals and communities involved.

Further, the pre-existing nature of inter-language group relations prior to mining, whereby Lao Loum speakers assigned to themselves a greater degree of "civilization" than they attributed to Makong/Tri speakers, also helped mould the mine's impacts. One of the reasons why Makong/Tri people in general were indeed less well educated formally than their Lao Loum neighbours was the simple fact that in the Vilabouly District before 2000 few schools – and those only at an elementary level – used anything other than Lao as the language of instruction.

Table A.1 shows that there has been a significant change since the mine started operations. Lao Loum-speaking girls are now more likely to be enrolled in school than boys, while the proportion of Makong/Tri-speaking girls enrolled has more than quadrupled. However, first, there remains a significant gap between enrolments for both sexes between the two language groups and, second and more importantly, the figures in Table A.1 refer to enrolment at any level. The overwhelming majority of Makong/Tri speakers (boys and girls) are only enrolled in the first three

primary grades. Of course, it takes time for long-established culturally specific traditions to change and this fact – illustrated in Table A.2 – should not detract from the fact that change has occurred and is taking place.

Given the large gap in formal education, one might expect a similarly large difference in mine employment between language groups. This is not quite the case, even if higher proportions of Lao Loum speakers than Makong/Tri speakers from SPDA were employed at the end of 2009. Recruitment seems to have succeeded in being reasonably equal across local ethnic groups, irrespective of formal education.

It seems further evident that, as the mine has generated more cash for communities nearby, opposite tendencies in family development have occurred. Whereas the birth rate among Lao-speaking villages in the SPDA has fallen from around 3.5% per year in 2001–2004 to 2.5% in 2009/10, among Makong/Tri-speaking villages it has risen from around 3% in 2001–2004 to over 4% in 2010. Because survival rates also appear to have increased in recent years, Makong/Tri mothers are more likely to have more infant children than are Lao mothers. This is turn will affect family choices as regards labour allocation. It has been shown clearly in Household Survey Reports for the mine that available labour within the family is a primary determinant of household prosperity; a household with several late teenage children and a middle-aged mother and father are much more likely than a young couple (of any ethnicity) with infant children to be able to both grow their own rice and have an adequate cash income from MMG Sepon wages.

Impacts differentiated by age and status

An unusual feature of demand from households for MMG Sepon employment from the start of the project's construction has been the desire of families to obtain employment for their unmarried daughters. By contrast, it is uncommon for married, local women to work for MMG Sepon. In 2002 and early 2003, when it was realized that despite the difficulty of establishing job applicants' ages among a population where birth (and other forms of) certification was rare, significant numbers of female employees were younger than 18. When such applicants were rejected because of concerns by the company about claims of child exploitation, considerable annoyance was registered by families. Approximately one fifth of the mine's Vilabouly employees are female and well over 90% of these are single.

Table A.1: Enrolment in school of six to 17 year olds (%), SPDA villages*

Language group	Gender	2001	2004	2005/06	2009/10
Lao (Phou Tai)	Male	84	79	87	99
	Female	64	86	91	107**
Makong/Tri	Male	43	63	68	87
	Female	17	53	65	71

NOTES: * SPDA villages – villages immediately surrounding the original mine; ** percentages greater than 100 are possible since children younger than 6 and older than 17 may be enrolled.

Table A.2: Numbers enrolled in high school or beyond, SPDA

Language group	Gender	2005	2007	2009
Lao (Phou Tai)	Male	15	24	27
	Female	18	24	33
Makong/Tri	Male	8	11	11
	Female	3	1	6

NOTE: No figures available for 2001.

For young single individuals it seems the mine has had considerable benefits. Not only are they in a good position to take waged work and enjoy the greater availability of consumer goods, but their choice of potential marriage partners has been enormously increased by both their mobility (physical and telephonic) and the arrival around the mine of so many new people.

By comparison, women that were already married have probably experienced fewer benefits and had to adjust more radically to lifestyle changes. However, opportunities for small-scale trade have greatly multiplied and married women dominate this sector. Similarly, many small-scale business opportunities encouraged by MMG Sepon's programs have tended to focus on women, as has the project's micro-finance scheme and vegetable-growing program. The one major area of mine impact from which married women might benefit most is the improvement in health care, particularly in the area of maternal child health.

Older women, especially widows, have gained little from the mine's presence. They have had to adjust – at a time of life when adjustment is difficult – to all the changes generated by the mine's presence without being the direct recipients of many benefits, for they cannot hope to be employed and are often beyond the age where gardening or running a small business is attractive. MMG Sepon does operate a small support program for elderly people with no relatives in the area and almost all of the 20 or so individuals involved are women.

Impacts differentiated by origin

Before mining commenced, relatively few marriages took place between SPDA-born people and outsiders. About 19% of all pre-mine marriages involved one marriage partner from outside the village. This proportion is steadily rising and had reached 30% by 2009/10 (see Table A.3). Furthermore, while before 2001 there was a tendency for outside females to marry into SPDA villages (particularly into Makong/Tri SPDA villages), today rather more males marry in than females. The implication of this trend is that marrying into an SPDA village is now seen as attractive because it may facilitate the bridegroom gaining preferential employment at the mine.

It is frequently feared that mines attract many migrants from well beyond the mine impact area and that the majority of such migrants are male. This is feared because a significant imbalance in sex ratios, especially among outsiders with few social ties in the area to which they have migrated, may lead to a variety of social problems, including prostitution, violence and social breakdown. One of the more interesting features of the Sepon Mine has been that, other than the movement inward of close to 200 public servants and their families relocated by the government, the majority of migrants to the area (mainly to the rapidly growing township of Boungkham) has been from more distant villages *within* the district. Moreover, such inward migration has apparently been of families and not single males. The overall sex ratio of Boungkham, at 105 males per 100 females, shows no tendency towards male in-migration. While it is true that social problems involving prostitution have arisen in Boungkham, it appears that the origin and family nature of the great majority of in-migrants have dampened down the feared consequences.

Table A.3: Village endogamy and exogamy before and after 2001, SPDA 2009/10

Language group	Gender	Born in village of present residence (*n*)	Moved in to marry 2001 and earlier (%)	Moved in to marry post-2001 (%)
Lao (Phou Tai)	Male	117	43	53
	Female	117	57	47
Makong/Tri	Male	54	31	67
	Female	47	69	33

Annex B
Social and infrastructure provision for MMG Sepon

Table B.1: Social and infrastructure provision: MMG Sepon

	Budget allocated per year for SDTF only (US$)				
	2004[a]	2005	2006	2007[b]	2008[c]
A: Physical Infrastructure	29%		58%	30%	46%
Transport (road, rail, airstrip)			230,652	65,040	145,000
Building community centre					
Building market					
Utility services (water, electricity, telecom)	52,000		79,500		
Agriculture project			77,620	97,560	85,000
Livestock project					
Fishery project					
B: Education	24%		4%	29%	12%
Adult education in sewing, weaving and handicrafts	48,000		23,211		
Construction or rehabilitation of schools				157,180	60,000
Scholarships					
School supplies					
C: Health	12%		19%	13%	16%
Hospitals/clinics built and maintained	24,000		127,250	70,460	80,000
Immunization/education programs					
Medical supplies					
Aquatic research					
Build solid waste disposal					
D: Local enterprise development	30%		6%	19%	18%
Helping to expand customers' businesses through training or investment	60,000		37,360	102,980	90,000
Purchasing from disadvantaged communities					
Helping to expand suppliers' suppliers' businesses through training or investment					
E: Community Development	5%		13%	9%	8%
Donations					
Sponsorship of arts, cultural or sporting events	6,000		27,320		25,000
Capacity building through training, mentoring and work experience					
Micro finance project					
Multiple resource use – sharing resources e.g. grazing, waste wood collection, trails, harvesting unused natural resources					
Facilitating community access to decision makers					
Others	10,000		61,964		15000
Total known expenditures	200,000	382,500	664,877	542,000	500,000
Total budget available					

NOTES:
a The SDTF was established in 2003 with a budget of US$96,000. A committee comprising district officers, local community members, officers from the Savannakhet provincial government and senior Sepon personnel administers the trust fund.
b A Social Mitigation Fund was initiated in 2007 to plan for mine closure. Funds are allocated to scholarships, developing engineering skills, sewing trainees and loans to set up businesses, among other schemes. Annually, the sum of US$500,000 is allocated solely for this fund.
c The Social Mitigation Fund was used for the nutrition and education of mothers and children, small rice donations for elderly and disabled people, road safety awareness, festivals and cultural events and various technical training schemes.

Annex C
Social and infrastructure provision for Phu Bia

Table C.1: Social and infrastructure provision: PBM

	Budget allocated per year (US$)			
	2006	2007	2008	2009
A: Physical Infrastructure	62%	19%	26%	59%
Transport (road, rail, airstrip)		5,000		80,000
Utility services (water, electricity, telecom)	138,266		23,816	14,990
Building community centre				51,900
Building market	16,556			
Agriculture project				9,762
Animal husbandry			7,175	1,914
Fish farm project	29,456			6,403
B: Education	28%	70%	56%	19%
School facilities built and maintained	82,452	19,000		50,114
Education, training, scholarships/bursaries and awareness of people not employed by the operation			67,037	773
Contribution to teachers' salaries				
School supplies				2,546
C: Health	8%	0%	3%	5%
Hospitals/clinics built and maintained	20,152			
Immunization/education programs	3,356		2,567	
Medical supplies				
Aquatic research	1,020		1,650	
Build solid waste disposal				13,986
D: Local enterprise development	0%	0%	0%	0%
Helping to expand customers' businesses through training or investment				
Purchasing from disadvantaged communities				
Helping to expand suppliers' suppliers' businesses through training or investment				
E: Community Development	2%	11%	15%	16%
Donations				
Sponsorship of arts, cultural or sporting events		3,000		
Capacity building through training, mentoring and work experience			18,313*	37,087
Micro finance project				9,729
Multiple resource use – sharing resources e.g. grazing, waste wood collection, trails, harvesting unused natural resources				
Facilitating community access to decision makers				
Others	7,110			
Total known expenditures	298,368	27,000	102,245	279,204
Total budget available	300,000	300,000	300,000	300,000

NOTE: * The VDC, which manages the Community Development Fund, was established in 2007, the setting up and training of which began in 2008. This VDC consists of villagers and district and provincial administration officers. Financial allocations have to be signed off by the provincial governor and the PBM Manager.

Annex D
Calculating and reporting tax payments

The Extractive Industries Transparency Initiative (EITI) aims to strengthen governance by improving transparency and accountability in the extractives sector. EITI is a global standard that promotes revenue transparency by requiring companies to publish what they pay and governments to publish what they receive. It has a flexible methodology for monitoring and reconciling company payments and government revenues at the country level.

Table D.1: *EITI Source Book* listing of key benefits companies pay to host governments

Profits Taxes	**Taxes levied on the profits of a company's upstream activities.**
Royalties	**Royalty arrangements will differ between host government regimes. They can include a company's obligation to dispose of all production and pay over a proportion of the sales proceeds. On other occasions, the host government has a more direct interest in the underlying production and makes sales arrangements independently of the concession holder. These "royalties" are more akin to a host government's production entitlement.**
Host government's production entitlement	**This is the host government's share of the total production. This production entitlement can be transferred either directly to the host government or to the national state-owned company. In addition, this benefit stream can either be in kind and/or in cash.**
National state-owned company production entitlement	**This is the national state-owned company's share of the total production. This production entitlement is derived from the national state-owned company's equity interest. This benefit stream can either be in kind and/or in cash.**
Dividends	**Dividends paid to the host government as shareholder of the national state-owned company in respect of shares and any profit distributions in respect of any form of capital other than debt or loan capital.**
Bonuses (such as signature, discovery, production)	**Payments related to bonuses for and in consideration of:** **• awards, grants and transfers of the extraction rights** **• achievement of certain production levels or certain targets** **• discovery of additional mineral reserves/deposits.**
License fees, rental fees, entry fees and other considerations for licenses and/or concessions	**Payments to the host government and/or national state-owned company for:** **• receiving and/or commencing exploration and/or for the retention of a license or concession (license/concession fees)** **• performing exploration work and/or collecting data (entry fees). These are likely to be made in the pre-production phase** **• leasing or renting the concession or license area.**
Other significant benefits to host governments	**These benefit streams include tax that is levied on the income, production or profits of companies. These exclude tax that is levied on consumption, such as value-added taxes, personal income taxes or sales taxes.**

Source: *EITI Source Book*, March (2005: p. 27).

Table D.2: Benefit streams PBM paid to government, 2009

	Category	Volume	Value (US$)			
			Total	National	Regional	Local
	EITI covered payments		12,266,664			
1a)	Profit taxes		Nil			
1b)	Royalties					
	– in cash		8,008,826			
	– in kind					
1c)	License fees, rental fees, entry fees and other considerations for licenses/concessions		210,061 (customs excise) 58,916 (concession fees)			
1d)	Signature bonuses and production bonuses					
1e)	Dividends					
1f)	Other payments to host governments (including production entitlements and other royalty-type arrangements)		1,756,557 (business turnover tax)			
	Personal income tax		2,232,304			

Source: PanAust *Sustainability Report* (2009: p. 12).

Table D.3: Benefit streams MMG Sepon paid to government, 2009

	Category	Volume	Value (US$)			
			Total	National	Regional	Local
	EITI covered payments		80,872,676			
1a)	Profit taxes		57,519,000			
1b)	Royalties					
	– in cash		19,297,076			
	– in kind					
1c)	License fees, rental fees, entry fees and other considerations for licenses/concessions		56,600 (rental fee)			
1d)	Signature bonuses and production bonuses					
1e)	Dividends		2,000,000			
1f)	Other payments to host governments (including production entitlements and other royalty-type arrangements)		2,000,000 (fuel tax)			

Source: Company data.

Table D.3: **Benefit streams MMG Sepon paid to government, 2010**

	Category	Volume	Value (US$)			
			Total	National	Regional	Local
	EITI covered payments		154,046,285			
1a)	Profit taxes		92,052,197			
1b)	Royalties					
	– in cash		26,537,488			
	– in kind					
1c)	License fees, rental fees, entry fees and other considerations for licenses/concessions		56,600 (rental fee)			
1d)	Signature bonuses and production bonuses					
1e)	Dividends		32,900,000			
1f)	Other payments to host governments (including production entitlements and other royalty-type arrangements)		2,500,000 (fuel tax)			

Source: Company data.

Annex E
Economic and social indicators: local and national

	National level (HDI)	Local level Sepon[a]	Local level Phu Bia[b]	National versus Sepon	National versus Phu Bia
Adult literacy rate (% aged 15 and above)	**72.7**	**–**	**87.3**	**–**	**1.20**
Combined gross enrolment ratio primary, secondary and tertiary schools (%)	**59.6**	**69.9**	**–**	**1.17**	**–**
School test scores[c]	**–**	**1.96**	**–**	**–**	**–**
GDP per capita[d]	**2165**	**550**	**779**	**0.25**	**0.34**
Population with sustainable access to an improved water source	**75**	**30-58[e]**	**–**	**0.77**	**–**
People with sustainable access to improved sanitation	**60**	**0-9%**	**–**	**0.15**	**–**
Doctors per 100,000 of population	**40**	**–**	**30[f]**	**–**	**0.75**
Under-nourished children <5 year as a % of population	**31.6**	**49[g]**	**64.5**	**0.64**	**0.49**
Life expectancy at birth (years)/HIV prevalence (% aged 15–49)	**62 / 0.2%**	**–**	**48.5**	**–**	**0.78**

NOTES:

a Most of the data come from the ESL (2010) *Household Survey*, Sepon, 2009.

b All data, unless otherwise stated, comes from the ESL (2005) Phu Kham ESIA.

c A mean score is calculated as follows: no formal education – 0; one to two years of primary schooling – 1 point; three to four years of education – 2 points; primary school (P5) graduate – 3 points; one (S1) to three (S3) years of secondary education – 4 points; four (S4) or five (S5) years of secondary school (high school) – 5 points; high school graduate (S6) – 6 points; and further education – 7 points. The average score for each group is then obtained (ESL, 2009: 3–11).

d It should be noted that there is always an economic inequality between urban and rural areas; Jackson (2010) mentions in his report that this gap also occurs along ethnic lines in Sepon. In practical terms, this means that a large amount of the GDP is in the hands of a few, while a small amount of GDP is in the hands of many.

e These figures come from Jackson (2010) and ESL (2010) *Household Survey* 2009. In reality, the figure is probably higher since it does not include other improved water supply options, such as household connections, public standpipes, boreholes, protected springs and rainwater collection.

f According to the ESL (2005) *Health and Nutrition Survey*, there is one medical doctor at Phoun District Hospital, which most of the 3,304 affected people attend for medical care.

g Based on the indication that 51% of the affected communities had sufficient food sources for their family (ESL (2005) EISA), 49% did not. This has no scientific relation to levels of nourishment in children aged five years and under.

Annex F
Understanding the routes to enhanced outcomes

In the ICMM document *Synthesis of Four Country Case Studies: Findings and Recommendations* we identified six of the most problematic issues featured across the different countries. They comprise the following:

- The adequacy/fairness of the tax regime for mining in the host country.
- The revenue-allocation system. Does this constrain or support the efficient and effective use of public resources, including those generated by mining?
- Conflicts over land use and property rights.
- Environmental damage and concerns.
- Conflicts between large-scale and artisanal mining.
- Dealing with prospective mine closures.

	Ghana	Tanzania	Peru	Chile	Lao PDR
Adequacy of the tax regime	**Local NGOs maintain that mining is under taxed compared to tax regime applicable in earlier decades**	**Little local knowledge of actual tax regime leads to claims that foreign companies make large profits and pay little tax**	**Recent introduction of mining royalty for the benefit of regional government and discussion on re-negotiation of tax exemptions granted earlier**	**Recent debate in Chilean Congress whether foreign mining companies are under taxed**	**Both companies contribute a significant amount in taxes and dividends to the government. High expectations of large tax and dividend payments in the coming years**
Allocation of resources	**Some mining revenue re-allocated through Minerals Development Fund, but practical results are disappointing. Administrative and public financial management at the sub-national level is insufficient**	**Central government does not hypothecate any mining revenue to sub-national levels. Public financial management at sub-national level is not strong, but has been steadily improving since the introduction of a decentralization process in the late 1990s**	**Reallocation of substantial amounts of mining revenue through Canon Minero to sub-national mining areas. Politicization of redistribution principles without guarantee that better results will be achieved. Local administrative and financial management capacity is weak**	**N/A**	**Central government does not hypothecate mining revenues to the district governments because the companies adequately provide for communities through development funds and other spending** **A worrying finding may be that provincial budgets are actually cut as a result of a mine starting operations in a district. This defeats the purpose of the compensatory payments for noise and general disruption to lifestyles** **Public financial management is not transparent and a large amount of off-budget expenditure occurs**

continued

Annex F
Understanding the routes to enhanced outcomes

	Ghana	Tanzania	Peru	Chile	Lao PDR
Conflicts over land use/rights	Local complaints that areas covered by mining concessions are too large and threaten local communities' livelihoods. Conflicts with agricultural/ pastoral land use and resettlement	Conflicts with agriculture and pastoral land use. Questions of resettlements. Also, conflicts with artisanal miners over access to land not being actively used by mining companies	Mining legislation conflicts with traditional claims over land/mountains. Some conflict with agriculture/pastoral land use	Less likely that land conflicts arise due to location of mining in desert areas, although limited conflicts have occurred in other parts of the country	Main complaint from local communities is that land is taken for mining
Environmental damage and anxiety	Environmental abuse mainly in the past, thus environmental legacies. Improvements in legislation and practices in recent years	Not a major current priority except for occasional sensational accusations of poisoned mine water being released with bad effects	Environmental legacies and various past incidences of environmental abuse. Improved legislation, but problems with enforcement of regulation	Environmental legacies and various past incidences of environmental abuse. Improved legislation	Some anxiety amongst communities about chemical spills, although this has very rarely occurred at the large mines. Highlights their own economic vulnerability from being dependent on fishing
Artisanal mining	Conflicts with galamsey mining, both linked to contentious property rights and also the negative environmental impact of such mining	Conflicts with artisanal mining, to the extent of forceful removal of informal miners from concession areas	N/A	Insignificant, small-scale mining tends to be partly mechanized	Occasional problems with trespassers on mine sites and inexperienced mining operations setting up on MEPA
Mine closure	No plan for mine closure and economic and social sustainability thereafter	Not an issue at present, as the sector is very young	Some encouraging thinking on environmental and social sustainability after mine closure for new mines. Unclear government policies to support this	Not an issue at the moment	Some anxiety at community level about a time when the mine may close

Annex G
Government comments

Lao People's Democratic Republic
Peace Independence Democracy Unity Prosperity
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Ministry of Energy and Mines
Vientiane Capital

Ref No: 561 /
Vientiane, 04 May 2011

Dear Kathryn

Thank you for your efforts in preparing the ICMM Lao PDR Country Case Study. We have found the process useful in ensuring wider knowledge of the mining sector and the management of the sector. We broadly support the findings of the report. We respect your decision whether to publish and distribute or not. We support the direction and contribution of the report to the wider understanding of the sector.

Yours sincerely,

H.E. Somboune Rasasombath

Acknowledgements

Oxford Policy Management (OPM) prepared this report for ICMM in conjunction with three Lao PDR-based organizations – Earth Systems Lao (ESL), the National Economic Research Institute (NERI) and economic staff from the National University of Laos. In particular, thanks should go to Nanong Khotpathoum, Peter Oksen and Paul van Strijp of ESL, Sthabandith Insisienmay, Sirivanh Khonthapane and Chansamone Vongphaisit of NERI and Phouphet Kyophilavong of the University of Laos.

The analysis was primarily undertaken during the middle of 2010 and the draft report was circulated for comments at the end of 2010. This final draft was completed in May 2011 following a workshop (24 February 2011) where ICMM and the Lao PDR government presented the findings. Special thanks should go to the Vice Minister of Energy and Mines, who chaired the workshop held in Vientiane.

The workshop was called "Utilizing Mining and Mineral Resources to Foster the Sustainable Development of the Lao PDR". Around 150 participants came together to debate the evidence on mining's economic and social contribution to the Lao PDR and explore opportunities for partnership between companies, government, development agencies and civil society organizations to enhance mining's economic and social contribution. There were representatives at the workshop from the National Assembly, provincial and national government agencies, NGOs, ambassadors, development agencies and mining companies (including 12 Chinese companies). ICMM is extremely grateful to all of the contributions received before, during and after the workshop.

For the past five years, OPM has been the lead contractor to ICMM for the Resource Endowment initiative and now also for Mining: Partnerships for Development. The OPM team – led by Mark Essex and Olle Östensson – would like to extend its sincere thanks to the staff at MMG Sepon, the Australian-managed subsidiary of China Minmetals Corporation of China, and PBM, the Australian subsidiary of the Brisbane-based PanAust Ltd, for their generous help, support and encouragement during the assignment. Thanks are due in particular to Richard Taylor and Richard Jackson of MMG Sepon for their in-depth briefings, calm guidance about the information available and for helping us in the understanding of a formidable volume of relevant statistical information. Thanks also to staff from Rio Tinto (Lao Sanxai Minerals).

We emphasize that the results and conclusions from the analysis are OPM's responsibility alone. OPM as the consultant firm primarily responsible for this assessment has no financial interest in any mining company and has undertaken the present assignment on the basis of strict objectivity and independence.

Oxford Policy Management (OPM) is a leading consulting practice in the field of international development. Its consultants are professionally respected in their specialist fields, with a reputation for combining intellectual leadership and rigour with the practical know-how and ability to develop solutions that work. OPM provides high-quality analysis, advice and support in the design and implementation of economic and social development policies, primarily in poor and middle-income countries. It aims to strengthen the public institutions in charge of those policies and, through them, to contribute to improved economic and social outcomes.

Earth Systems Lao (ESL) has a long track record of carrying out social and economic research in the Lao PDR and in particular social and economic impact assessments for large mines. Because of this experience and knowledge of the local areas, ESL was tasked by OPM to conduct research on the various local-level impacts (both positive and negative) that these mining companies have on the communities living in the vicinity of the mines.

The National Economic Research Institute (NERI) was established in 1997 as a strategic research institute under the supervision of the Committee for Planning and Investment, itself under the Ministry of Planning and Investment (MPI). NERI operates as a think tank of the MPI and its main function is to formulate the long-term provincial, regional and national economic and social development strategies. In addition, it provides research and analysis of the economic and social situation at the micro and macro level, monitors and forecasts economic conditions, assesses and monitors the economic and social policy of the government and provides capacity building for staff in related agencies.

The National University of Laos is a public university and the first and biggest university in the country. It comprises 10 academic faculties and provides undergraduate and postgraduate educational courses to national and international students. Academic activities include teaching, research and providing analytical services to the public.

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