

Emerging Economies and Challenges to Sustainability

Theories, strategies, local realities

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Ulrikke Wethal**

- 5 The data is from SIPRI, Swedish International Peace Research Institute.
 6 Under DL 600, investors enter into a legally binding contract with the Chilean state, receiving a number of attractive guarantees and rights.

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13 Mining, development and environmental sustainability in Peru

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Peru's economic growth over the past 15 years is based on an export-led strategy where the exploitation of natural resources, particularly minerals, plays a key role. Mining has been a key feature of the Peruvian economy throughout the country's history, influencing not only economic policies but also social relations. Considering Peru as an emerging economy, this chapter focuses on the role that mining has played in the Peruvian development strategies since 2000. That year marked the end of a decade of authoritarian rule, a period during which a number of neo-liberal institutional changes took place in Peru, setting the ground for the development policies of three subsequent democratically elected governments. These political changes have not altered the basic elements of the Peruvian economic model, in spite of increasing challenges to its implementation and legitimacy with regards to social policy and environmental issues.

Our point of departure is the acknowledgement that the task of improving the wellbeing of societies (our working definition of *development*) involves sustained levels of economic activity and economic growth. At the very basic level, all forms of economic activity involve an engagement with the physical environment and the use and exploitation of natural resources. In that sense, all economic and productive activities that form part of development strategies leave an imprint on the environment. What is on debate is how much of an imprint is acceptable, and under which criteria. In other words, how much natural resources is it sustainable to use and how, given environmental and social concerns. It is from this point of view that we engage in a discussion of the role of mining as an explanatory factor in Peru's current contemporary development strategy.

The chapter is structured as follows: We first provide a brief introduction to Peru's economic history, an export-led history where the exploitation of natural resources has given great impetus to economy growth for relative short periods of time, without contributing to sustained socio-economic development. The following section discusses the institutional changes and economic policies implemented in Peru since the 1990s, originally in the framework of structural adjustment. The 1990s mark a fundamental change in the country's economic

economic model. The model continued also after 2000. We then move on to discuss in greater detail the Peruvian mining sector, the 'engine of growth' in Peru's development strategy. We will show how behind the increased presence of socio-environmental conflicts in the political and social landscape of contemporary Peru lays a complex situation where local and regional grievances intersect, with some social actors getting more voice than others. The chapter concludes that mining in Peru is an area in need of state intervention of many kinds, if the engine of growth is to secure both social and environmental sustainability.

Peru's economic history: an emerging economy time and again

Export-led booms are a constant variable in Peru's economic history. Since becoming a republic in 1821, the exploitation of natural resources has raised great expectations among the Peruvian economic elites and political leaders of the time, seeking to obtain fresh revenues to strengthen otherwise weak state budgets. Such was the fate of guano in the second half of the 1800s, rubber in the early 1900s and fisheries in the 1960s, the latter leading to the depletion of the resource itself. Economic booms have come and gone, leaving much social and political debris behind (Contreras & Cueto 2013; Hunt 2011). In most instances, the central state has played a pivotal role in economic policy and development, although with various degrees of involvement in production itself, including mining.

To understand Peru's current development policy, it is necessary to glance through the country's economic history over the past 50 years. The military government of General Juan Velasco Alvarado, in power since 1968, introduced a number of political and economic reforms that have been described as a 'revolution by decree' (Krujitt 1991), which aimed to take national control over the economic development of the country. While many of the reforms can be considered progressive in retrospect, the motivation was less so, as the army leadership undertook the reforms as preventive measures to avoid a slippage into communist rebellions as seen in other parts of the region (Booth & Sori 1983; McClintock & Lowenthal 1983). The Peruvian agrarian reform of the early 1970s put an end to the power of the landed oligarchy, distributing large landholdings among peasants and tenants across the country (Kay 1982; Mayer 2009). Oil and mining production plants operated by foreign companies were expropriated and nationalized (with only one exception)¹ and direct national investment and a more stable labour force in the mining sector became the rule. Although volatile, high mineral prices in the 1970s created a favourable environment for higher investments in medium and small mining enterprises (Glave & Kuramoto 2007, p. 137). While the reforms underwent serious setbacks in the late 1970s under a new military leadership and there was much economic and political unrest, few were prepared for what was to come in the 1980s.

The lost decade of Latin America was possibly even more so in Peru than in other countries of the region. The return to democratic rule in the 1980s was

also the year chosen by the communist Maoist party Shining Path to launch a guerrilla war against the Peruvian state. Battling between high inflation, economic stagnation, an international debt crisis, an internal armed conflict and the falling price of minerals, the governments of Fernando Belaúnde and Alan García tried and failed to keep the country's economy afloat (Sheahan 2001). Several measures were applied, such as controlling prices, sustaining subsidies, even declaring default to the foreign debt. The mining sector was strongly affected by García's fixed exchange rate policy, which worked against Peruvian exports. Guerrilla attacks targeting all sorts of production plants as well as labour union leaders made the situation even more precarious. The decade ended with hyperinflation on the thousands (Sheahan 2001, p. 192). For Peruvians today, the 1980s is considered the time of chaos.

Peruvian economic policies since the 1990s

By the 1990 presidential elections, there was broad agreement among political forces that something had to be done to overcome the economic crisis. 'Something' meant a radical change of policy compared to that of the 1980s. The scene was set for structural adjustment, that is, economic liberalization and stringent macroeconomic stabilization. In this context, the electoral debate was not about policy options, but rather about how fast the change ought to be. A political outsider, Alberto Fujimori campaigned for a gradual change; his main contender, Mario Vargas Llosa, openly opted for a quick change, a shock. Fujimori won the elections, but implemented the shock. The 'Fujishock' of August 1990 changed the rules of the game for the Peruvian economy overnight. All price control measures were lifted, as were subsidies to national products and protection measures against imports. Salaries for the public sector were either cut down or frozen. The price of petrol went up 30 times overnight, with all other prices adjusting to the new conditions. Prices for public services were adjusted to cover deficits first, while the privatization of state enterprises started a few years later. Incentives for foreign companies were established. The shock was so brutal and its impact so uncomprehensive when it happened that, contrary to what could be expected, it happened in the absence of public uproar.

In retrospect, the structural adjustment implemented in Peru was successful in controlling inflation, regaining access to international financial markets and reactivating investment and production; it was less so concerning employment, social inequality and dependency on foreign capital (Sheahan 2001, p. 210). Programmes to address the social impact of structural adjustment were put in place a few years after the shock, and an increased focus on poverty alleviation marked the social agenda for the rest of the decade – albeit on the basis of new forms of centralization (Gonzales de Olarte 2000) and neoclientelism (Tanaka 1999).

Changes in economic policy during the 1990s also involved new institutional and normative frameworks for investment (national and international), taxation, property rights (material and intellectual), and for the exploration and

Mining in Peru: the tricky entanglement of production, employment and environmental considerations

Mining can be considered the engine of economic growth in the Peruvian success story of the last decade. As China entered the world economy, rising prices on all sorts of natural resources led to a considerable increase in Peruvian mining activity, now constituting the major value creation sector of the economy. In 2007, mining's share of GDP was 13.2 per cent (IPE 2012, p. 23). However, the real importance of the sector becomes visible in the national export statistics, where mining constitutes 57 per cent, compared to only 9 per cent for agriculture and 7 per cent for fisheries (IPE 2012).⁴ Copper and gold constituted 40.4 and 36.9 per cent of Peru's mining exports in 2012, destined mainly to China (25.3 per cent), Switzerland (19.7 per cent) and Canada (12.3 per cent).

Export tends to fuel growth by facilitating imports of production techniques and machinery. Increasing state natural resource tax revenues leads to rising public investments in infrastructure, which improve productivity in other sectors. In 2011, investment, in the mining sector itself reached US\$7 billion, 77 per cent above the previous year and a historical record by all standards (IPE 2012, p. 10), having considerable demand effects towards other sectors in the economy. The current status of planned and probable future investments reaches US\$59 billion (MINEM 2014). In sum, the total effect of increased investment in the Peruvian mining sector has been prolonged economic growth rates since 2002 (World Bank 2014).

In spite of the overwhelming impact of mining for economic growth, it is not easy for most people to observe direct benefits from this activity. The sector is highly capital intensive and creates relatively few jobs within the industry itself, in spite of its high share of value creation. This is also the case in operation sites, where the need for skilled and unskilled labour might not meet the expectations and capacities of local populations. In 2007, for instance, the sector only employed 1.3 per cent of the labour force (IPE 2012, p. 25), while official figures show an increase in the absolute number of employees from 79,000 in 2003 to 211,000 in 2012 (SNMPE 2013, p. 20).⁵ Estimates on a macroeconomic equilibrium model based on the input-output matrix⁶ from the Peruvian Bureau of Statistics indicate, however, that an increase in mining exports would have a major impact in employment creation. Briefly stated, for every US\$1,000 million increase in mining exports (at 2007 prices), 78,156 new jobs can be created, including direct, indirect and induced employment (IPE 2012, p. 27). Furthermore, only 10 per cent of these jobs would be in the mining sector itself, the rest being created in other economic sectors. Considering that the current portfolio of projects with high probability to be completed (i.e. those expanding ongoing operations and those with Environmental Impact Assessments approved) would result in US\$14,877 million per year (average) for the entire period of operation, the impact of mining upon the entire Peruvian economy and employment is vast. In the remainder of this section, we examine in more detail the role that

exploitation of natural resources. Monitoring institutions such as the Ombudsman Office and various oversight bodies were created to supervise the free market competition in all productive sectors. The effect of structural adjustment was mixed in the mining sector. The reduction of public expenses led to massive dismissals of labour force in state-owned mining companies, wiping out labour unions in the sector. At the same time, the mining sector experienced a period of modernization in the 1990s, as the state assumed the deficits of state-owned companies, 'putting them in good shape' again before selling them as part of the privatization programme. In 1992, Peru's General Mining Law was approved, providing a reliable legal framework to promote investment. According to Glave and Kuramoto (2007, p. 107), it is in this new context that major gold mining projects were initiated.

Since the mid-1990s, the Peruvian economy has continued to grow at unprecedented rates. According to official figures, GDP growth increased from 4.04 per cent in 2003 up to 9.80 per cent in 2008. While 2009 registered the lowest growth of the past decade, the economy showed a fairly quick recovery, reaching 8.79 per cent in 2010. For 2011 and 2012, the figures are 6.91 per cent and 6.29 per cent, still high by international standards. As will be shown below, much of this growth is due to incomes generated by an export-led mining sector, which has enjoyed favourable international prices over the past two decades, in spite of some fluctuations. The macroeconomic stability achieved in the 1990s has become a much valued asset by subsequent Peruvian governments in the 2000s, and few dare to challenge the model. Current President Ollanta Humala, originally a centre-left candidate, changed his policy options during the 2011 presidential election to assure national and international investors and financial actors that Peru would continue along a path of economic stability and liberalization.

What about environmental concerns amid economic liberalization? Institutionalization has also taken place in this area, although in slow motion, so to say. A National Environmental Code was established in 1990, setting some restrictions to mining operations. According to Glave and Kuramoto (2007, p. 154), it is in response to this instrumental and upon initiative of the mining sector itself that social and environmental obligations were incorporated for the first time in mining operations through Legislative Decree 708 of 1991, a decree aimed at promoting private investment in mining. Although several initiatives regarding environmental monitoring followed, it would be first in 2005 that a General Environmental Law would be approved by Congress, creating an oversight body to monitor environmental impact in Peru, CONAM (Consejo Nacional del Ambiente; National Council for Environment). A few years later, this body would be incorporated into the new Ministry of Environment established in 2008 (Legislative Decree No. 1013 of 2008). On the background of increased social conflict related to extractive industries over the past decade, it is significant that the Law of Prior Consultation was the first law approved by the Humala administration in 2011.² The following year, special legislation was established to address the issue of illegal mining.³

mining plays in the current development model, bringing together several considerations necessary to address the issue of environmental sustainability of mining as an engine of growth.

Mining processes and concessions

The lifeline of a mining project has five steps, often extending over several decades: (i) prospection, (ii) exploration, (iii) development, (iv) exploitation, and (v) closure. Time is an important dimension to bear in mind when assessing the return of investments made and their impact at the national, regional and local levels. In Peru, any company or individual might use available cartographic information to assess the amount of mineral present in an area, and then make a concession request to explore further on the ground. Concessions must be registered at the Geological Mining and Metal Institute in Peru (INGEMMET). Once a deposit is identified and mapped, companies must produce a feasibility study to show that the project is economically viable and, furthermore, an Environmental Impact Assessment (EIA) as part of the application for the right to exploit the resource. Consultations with local residents and other users of the area is a requirement in the latter (Madalengoitia 2012). The detailed plan on both development and exploitation of a natural resource – for example, if the company plans an open pit or a closed mine – must furthermore include plans on how to close the operation and restore the area in an environmentally friendly manner after the deposit is no longer commercially viable.

According to the Peruvian Constitution of 1993, all natural resources (including sub-terrain resources) belong to the nation, with the Peruvian state enjoying the sovereign right to use them for the promotion of economic development, including granting concessions for their use to private actors.⁷ According to the Constitution, each level of government in Peru (central, regional and local) has political, economic and administrative autonomy in matters within their competences.⁸ However, these competences have to be performed in 'harmony' with the other levels of government, including national plans.⁹ It implies, for example, that regional development plans cannot be considered in isolation from national and local plans of development. According to these legal norms, development should be harmonized between the three levels of government.

In Peru, concessions can last for a maximum of 60 years. Contracting parties are authorized by the respective concession contract to undertake the collection of fees, rates, tolls or other forms of investment recovery. The central government may also enter into legal stability agreements with concession holders and investors. In such cases, investment requirements and deadlines established in the contract are applicable for specific periods. It is important to note that also regional and local governments can grant concessions for small-scale and artisan mining through the Regional Directorates for Energy and Mining.¹⁰

The Fujimori government paved the way for entry of international mining companies to Peru through Law 26505 on Investment Promotion of 1995. The

law guarantees a period of 15 years without changes in the general legislation affecting contracts, four years of depreciation of losses, repayment of value added taxes and the creation of various channels by which companies can strike a deal by compensating the affected communities directly. The transparency of this system made Peru attractive for foreign investors when mineral prices at the world market started to increase in the early 2000s.

Distribution of income originated in the mining sector

The presence of central and sub-national governments discussed earlier is of relevance for the distribution of incomes generated by mining in Peru. Indeed, the structure of the public sector budget to be approved by congress differentiates between the central government and decentralized levels. According to the Constitution, the budget has to allocate public resources equitably, meeting criteria of efficiency and decentralization.¹¹

The mining sector contributes 36 per cent of the total government revenues (IPE 2012). Mining companies contribute to the Peruvian public economy through a combination of two forms of taxation: one based on net income (known as *canon minero*), the other based on gross production (known as *regalías*). According to the EITI Report for 2011–2012, Peru collected more than US\$6 million annually in natural resource taxation, of which 55 per cent comes from the mineral industry (EITI 2014). The central government keeps half of the *canon minero* while distributing the other half among the sub-national geographic units where the resource originates.¹² Accordingly, the district(s) where extraction takes place receives 10 per cent, the provincial level 25 per cent, the departmental level 40 per cent, while the regional government gets the remaining 25 per cent (Glave & Kuramoto 2007, p. 170). Concerning *regalías*, this tax increases from the initial 1 per cent of annual sales income up to 3 per cent when total sales are above US\$120 million. This royalty is designated to productive investments aimed to increase employment in the areas affected by mining as the activity itself, as mentioned above, offers limited labour opportunities for the local population.

Social conflicts

If mining is such an important source of income in Peru, why does it raise such levels of social conflict? By February 2014, 136 socio-environmental conflicts (active and latent) have been registered by the Social Conflict Monitoring System at the Peruvian Ombudsman Office. This figure includes both active (approximately three-quarters) and latent conflicts. Out of the 136 conflicts, 103 (75 per cent) are related to the mining sector.¹³ Socio-environmental conflicts related to mining usually refer to those cases when local populations protest against natural resource extraction, for many reasons. Local populations in Peru have actively protested against mining companies using various strategies, the most common being road blockages – with bricks, stones, trees and

flaming tyres – often to prevent company transport, but also affecting third parties by impeding normal traffic. In some cases, local protests have ended in violent events. The active use of violence by local protesters can have two opposing aims: (i) to prevent mining activity altogether, or (ii) to improve their negotiating capacities vis-à-vis mining companies. Local protests can also be related to regional and local politics, based on local grievances or distribution of resources and incomes (Barrantes *et al.* 2012). Either way, high levels of conflict in the mining sector may have a deterring effect on new and continued investment.

To understand the dynamic of social conflict between local populations and mining companies in Peru, it is necessary to understand the way these two meet in the context of mineral exploration and exploitation. To exploit natural resources, a state might choose between three main approaches: create state companies, sell the natural resource site to the highest bidder or invite private companies to extract the resources based on different forms of taxation. Which approach benefits the national and local population most will depend on the institutional setting, the state's ability to control the activity and the political risk perceived by private companies and investors (Wiig 2013). In Peru, the Fujimori administration and the succeeding governments mixed the last alternative with a 'laissez-faire' approach to the market economy. This implied a marginal participation of the central state in mining activities other than overall regulatory frameworks. If contested by local populations, an agreement with central government as owner of the resource would not be enough for a private company, given the fact that the central state is politically reluctant to use power to protect granted concession rights. In practice, this means that companies are left to negotiate with local interests on their own, to prevent incidents that might uphold both investment and later exploration. And popular pressure works. Due to heavy opposition by the local population and with support of the regional government, the Conga goldmine with a US\$5 billion investment has stopped operations in the northern department of Cajamarca, while the companies in the southern department of Arequipa reached an agreement with local communities through a valuable quid-pro-quo offer of economic support to local development in exchange for putting an end to protests.¹⁴ Whether local protesters actually aim to stop mining or simply demonstrate their power to improve their bargaining strength vis-à-vis companies is difficult to assess once a conflict has escalated. At the same time, it is important to be aware that a number of potential or underlying conflicts are probably never recorded in the socio-environmental conflict statistics when companies and local communities are successful in reaching agreements based on dialogue and mutual interests (Ormachea *et al.* 2014).

Variation in mining operations and environmental considerations

Until now, we have addressed mining in this chapter as a homogenous category of production with the basic feature of producing great incomes. In reality,

mining in Peru consists of sectors that are both socially and technologically worlds apart. Briefly stated, large-scale mining is dominated by multinational companies using large-scale machinery and the latest technology, while small-scale mining is driven by small units and individuals often using rustic technology and muscle power to extract the minerals from the ground. The Peruvian Ministry of Mining operates with four categories based on the size of operations: *large*, *medium*, *small* and *artisanal* mining, depending on the size of the concessionary area and its production capacity. The activity can furthermore be categorized as either *formal* with a concession, or *informal* without any concession, neither for exploration or exploitation. There is an obvious relationship between size and formality as large-scale mines are difficult to hide, while the high world market price has made gold-digging an alternative source of income for ordinary individuals. However, intermediate combinations do also exist. Informal mines can be rather large, applying huge dumpers and excavators operated by several hundred employees working for an entrepreneur. Alternatively, the activity can be split into separate independent labour teams which together form a large operation within a limited geographic area. There are two major reasons behind large operations opting to remain informal. One is to avoid paying taxes to the central government; the other is to explore areas where mining concessions are not allowed – for example, *de facto illegal* mining in natural parks, protected areas and vulnerable ecosystems.

The environmental impact is essentially different between large-scale formal and small-scale informal mining. Large-scale operations are normally open pit sites where heavy machines mould the rock to extract minerals, with controlled use of mercury and cyanide, in the process. The large amount of unused rock is deposited in a way that prevents drainage into the natural environment. The large amounts of water used in the process are afterwards kept in reservoirs as part of a cleaning process before being released into nature again. If these security measures are followed, the effective negative impact on the environment is highly reduced. Due to increased international attention to extractive industries, large mining companies tend to adhere and apply international social and environmental standards in their operations. However, accidents do occur and there have been several incidences where large amounts of untreated process water have been released directly into nature. There are also localized negative effects of dust and stone powder for the employees working in the mines, but more importantly there is potential conflict over the use of water resources with local farmers and other users (Urteaga 2011). Situations where the water source is completely drained cause legitimate fears of potential consequences among local communities. When the public learned that the Conga mine project had planned to drain four highland lakes by bringing the water to the processing plant in a tunnel, a public uproar arose,¹⁵ causing President Humala's first ministerial crisis in December 2011 and a standstill of the entire project. Thus an integrated approach to the management of water resources is necessary to combine the social, economic and environmental concerns (Preciado 2011).

As noted earlier, gold is one of the most important metals in the Peruvian mining sector and it is mainly exploited by large mining companies through open pits. However, small concentrations of gold in the soil and riverbed sand have become profitable for exploitation by small-scale miners due to increased international prices. Today such small-scale activity is concentrated in five regions in Peru. The most documented case is the alluvial gold washing in the department of Madre de Dios where between 50,000 and 80,000 individuals are constantly washing the soil and sand, destroying up to 50,000 hectares of virgin rainforest.¹⁶ The miners first use river water to separate major particles that contain gold, and then mercury and cyanide to concentrate the metal. The environmental effects vary according to the artisanal method being applied, but include deforestation, excavation of soils forming basins and piles, soil particles released directly into the river and gasoline spillage from the machinery and metals into the ecosystem. The use of cyanide enters the miners' respiration system when applied during the gold separation process indoors, while the mercury is released into the river and is later absorbed through the food chain. A Carnegie study from Madre de Dios finds that 60 per cent of the fish sold at the market in Puerto Maldonado has mercury levels above the permitted limit in foods and that the mercury concentration in hair samples has more than three times the accepted level for 78 per cent of the adult population (Fernández & González 2009).

It has become increasingly difficult to stop informal and illegal mining activities in spite of being localized. This is due to the combined result of the remoteness of operation sites, the presence of local resistance and the political cost of cracking down on the activity. Miners organize protests and road blockages in retaliation to attempts by the central government to formalize or control illegal mining. They have also been able to organize and lobby politicians and decision-makers to continue their activities, including regional governments. The central government has launched a programme leading to the formalization of illegal miners in areas open for concession, in an attempt to regulate the activity and its environmental and social effects.¹⁷ So far 69,055 miners have applied for formalization by declaring their willingness to adhere to the responsible mining methods.¹⁸ However, this initiative must be seen as an initial step to improve the standard as it will remain difficult to actually monitor and enforce legal and environmentally sound operations among small-scale and artisanal mining. In artisan technology, for example, there are few economically viable alternatives to mercury to amalgam small gold particles. A recent report from the Peruvian Ombudsman Office on public intervention regarding informal and illegal mining identifies the implementation of the formalization programme, the effective criminal investigation and prosecution of those who persist with illegal mining and the environmental restoration of sites affected by illegal mining as the main tasks in Peru's environmental agenda (Defensoría del Pueblo 2013, p. 161).

There is hence an inverse relationship between socio-environmental conflicts and the actual pollution problem. The less polluting large-scale mining

meets the strongest social protests, while the rather environmentally disastrous small-scale and informal mining activities are met with an implicit approval by local populations. Job creation and employment opportunities for the local population might be a plausible explanation. It is much harder to see the local and regional benefits that large-scale mining operations might bring to local communities. Employment opportunities are more scarce, requiring often more skilled than non-skilled labour. On the other side, households that become economically dependent on informal mining incomes for their daily survival seem to be willing – or have no option – but to live with the harsh consequences for the environment and their own health. At the same time, the public in general does not necessarily perceive any benefits coming from higher government incomes. As localized 'not-in-my-backyard' resistance obstructing large development and investment projects are met with indifference by the general public, central government lacks popular pressure to push national agendas forward.

Employment is thus a central aspect to consider when assessing the inverse relationship between conflict levels and environmental degradation. Based on official figures, we calculate that the economically less significant informal mining actually creates more jobs than the formal sector does – for example, 196,000 people are employed in large/medium-scale mining, 33,000 in small-scale, 6,000 in artisanal and as many as 630,000 people in the informal sector.¹⁹ While there are relatively strict monitoring mechanisms for environmental effects in place among the larger units (particularly large and medium units), monitoring is completely absent among informal units. And while the central state has taken action to address this challenge, regional governments in Peru are still hesitant with respect to the devastating effects of informal and illegal mining based to a large extent on short-term political interests (Defensoría del Pueblo 2013, p. 15).

Conclusions

The impact of mining in the Peruvian economy is indisputable. The economic growth experienced over the past decade is mostly due to increased mining exports and investments, thus activating other sectors of the economy. In this chapter, we have seen how the incomes produced by mining activities are not only a source of economic growth, but can also be the source of social conflict and environmental degradation. The expectation created by potential mining incomes can be a source of rivalries and conflict among local and regional actors. The position taken by the Peruvian state to leave mining enterprises and local actors to clear their differences on their own has led to more not less social conflict. Both types of actors call for more state presence and intervention as a guarantee to enforce agreements and to protect public interest. The problem is, however, that what local actors perceive as 'public interest' might not necessarily be the same thing central government has in mind. The export-led development strategy implemented by several Peruvian governments over the last 20 years is based on mining incomes, and there is no indication that the

development model will change in the future; rather the contrary. The Peruvian mining-based export-led model is in need of more, not less, effective state intervention if it is to secure both social and environmental sustainability, thus moving beyond regionalisms and short-term gains.

Notes

- 1 Southern Peru was the only mining enterprise that produced a new investment project as required by the military government, thus avoiding nationalization in the early 1970s (Glave & Kuramoto 2007).
- 2 Law No. 29785 of 2011, Law on the right to prior consultation by indigenous peoples as recognized by ILO Convention 169, Congress of the Republic of Peru.
- 3 Legislative Decrees No. 1099, 1100, 1101, 1102, 1103, 1104, 1105, 1106 and 1107 of 2012.
- 4 Available at: www.snmpc.org.pe/informes-y-publicaciones-snmpe/reporte-estadistico-mineroenergetico/jano-2012-fecha-de-publicacion-junio-2013.html#pag_6. Last accessed 11 March 2014.
- 5 Peru's total employed labour force for 2007 was estimated to be 13 million people.
- 6 Glave and Kuramoto argued in 2007 for the urgent need to update the input-output matrix for the Peruvian economy, in order to be able to measure the direct and indirect benefits of the mining sector upon the rest of the economy. The Peruvian Bureau of Statistics initiated the construction of a new input-output matrix in 2008, and the study undertaken by IPE (2012) is based on that tool.
- 7 Constitution, Article 66.
- 8 Constitution, Article 189.
- 9 Constitution, Article 191, 192 and 194; the Organic Law of Municipalities No. 27972, Article 86; and the Organic Law of Regional Governments No. 27867, Article 45.
- 10 Article 34 of Organic Law of Regional Governments No. 27867 establishes that 'Regional governments give concessions and any other type of contract ...', while Article 59 mandates regional governments with the specific task of granting concessions for small-scale and artisanal mining in their respective jurisdictions. In addition, Article 33 of the Organic Law of Municipalities No. 27972 establishes that 'Local governments can grant concessions to domestic or foreign corporations for the implementation and operation of infrastructure or public services, according to law.'
- 11 Constitution, Article 188.
- 12 Constitution, Article 77; Ley de Canon 27506 of 2001.
- 13 www.defensoria.gob.pe/conflictos-sociales/conflictosportipo.php. Last accessed 11 April 2014.
- 14 www.defensoria.gob.pe/conflictos-sociales/conflictosactivos.php?it=6. Last accessed 21 June 2014.
- 15 'Cajamarca en resonancia', Caretas, Edición 2206, 10 November 2011, available at www.caretas.com.pe.
- 16 Ministry of Environment (MINAM) website, 'Los efectos de la minería ilegal', available at www.minam.gob.pe/mineria/legala/los-efectos-de-la-mineria-ilegal/. Last accessed 29 April 2014.
- 17 Attempts to formalize informal small-scale miners have been made since the mid-1990s, without success (Glave & Kuramoto 2007). The legislative decrees of 2011 are the latest attempt, showing a significant advance in the relative short period of implementation. See Informe Defensorial No. 160 Gestión del Estado frente a la Minería Informal e Ilegal en el Perú, Defensoría del Pueblo, 2013.
- 18 Ministry of Environment (MINAM) website, 'El proceso de formalización minera', available at www.minam.gob.pe/mineria/legala/el-proceso-de-formalizacion-minera/. Last accessed 29 April 2014.

19 The numbers are calculated in the following manner. Large/medium scale is taken from MINEM annual report 2013; both small-scale and artisan mining by multiplying the number of employees per firm by the average number of employees, and finally informal mining by assuming nine persons on average for each of the 70,000 informal units as estimated by Macroconsul in 'Minería Peruana, Contribución al Desarrollo', Institute of Mining Engineers, Lima, January 2010. The figures for the latter three categories are taken from the same report. The figures for the informal sector are difficult to estimate. The lowest estimate we have found of people employed in informal mining is 300,000 (<http://gestion.pe/economia/lucha-contra-mineria-ilegal-peru-comienza-rendir- algunos- frutos- segun- wsj-2095121>).

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Part IV

Sub-Saharan Africa