

**The economic contribution of
large-scale gold mining in Peru**
Second edition



About the World Gold Council

The World Gold Council is the market development organisation for the gold industry. Working in the investment, jewellery and technology sectors, as well as engaging with governments and central banks, our purpose is to provide industry leadership, while stimulating and sustaining demand for gold.

We develop gold-backed solutions, services and markets, based on true market insight. As a result, we create structural shifts in demand for gold across key market sectors.

We provide insights into the international gold markets, helping people to better understand the wealth preservation qualities of gold and its role in meeting the social and environmental needs of society. For example, in co-operation with our members, we are currently leading the development of a standard through which responsibly produced newly-mined gold can be identified as conflict-free.

Based in the UK, with operations in India, East Asia, Europe and the US, the World Gold Council is an association whose members include the world's leading and most forward-thinking gold mining companies.

The World Gold Council's 23 Members represent over 60% of global corporate production. Members' active support of the World Gold Council represents their shared vision of ensuring a sustainable gold mining industry.

The member companies are:

African Barrick Gold
Agnico-Eagle Mines Ltd
Alamos Gold Inc.
AngloGold Ashanti
Barrick Gold Corporation
Buenaventura
Centerra Gold
China Gold Corporation
Eldorado Gold Corporation
Franco-Nevada Corporation
Goldcorp Inc.
Golden Star Resources Ltd
Gold Fields Limited
Hutti Gold Mines
IAMGOLD Corporation
Kinross Gold Corporation
Mitsubishi Materials Corporation
New Gold Inc.
Newcrest Mining Ltd
Newmont Mining Corporation
Primer Mining Corporation
Royal Gold Inc.
Yamana Gold Inc.

Contents

Update to the first edition	01
Executive summary	02
Introduction	04
Part I: Peru – economy, history and mining industry	06
Part II: Impact of the sample mines	22
Conclusion	37
Appendix: Data collection template	38
References	40
Glossary	Inside back cover

Update to the first edition

This report is an update of the first edition published in March 2011 which was subsequently presented at the ‘Gold for Development’ event hosted in Washington by the World Bank and the World Gold Council in October 2011. This second edition features updated data for both Peruvian macroeconomic indicators and from the four World Gold Council member companies with operations in Peru. New figures have been incorporated for 2010 and, where available, 2011, and projections through 2018 have been revisited.

In addition, new topics have been added, including an analysis of the Mining Programme in Solidarity with the People, or Voluntary Contributions Programme (PMSP) which ended in 2011, both at a national level and within each of the four companies. A look at the Voluntary Contributions regime was considered a logical complement to the focus on local sourcing in the first edition. It is seen as an interesting model for public–private partnerships in environments where lack of governmental capacity is a constraint upon the scope for producing good development outcomes from the use of mining revenues.

Moreover, information drawn from an in-depth case study recently published on Gold Fields’ Cerro Corona mine has been incorporated into this edition.

Finally, information relating to the planned investment in the Minas Conga mining project, a joint venture between Newmont and Buenaventura, has been incorporated into forecast data for certain indicators, where available. Specifically, for capital expenditure and community contributions figures, the sample size has been broadened from four mines in the first edition to four mines plus the Minas Conga project because of its scale and significance for the future of the gold mining industry in Peru.

Executive summary

Large-scale mining often has significant impacts in emerging economies

At the macroeconomic level, these impacts are measured as increases in foreign direct investment (FDI) and currency reserves, boosts for government revenues, national income contribution, job creation and poverty alleviation, as well as creating potential for raising exchange rates (which may impact on the competitiveness of other sectors). These quantitative indicators translate in to a variety of local qualitative impacts and marked changes in patterns of life for local residents.

Such changes may include new opportunities for jobs and transfer of skills, improved infrastructure, clinics and schools, but can also trigger significant in-migration of people in search of economic opportunities, disruption of traditional social structures, increased competition for land and water, and local increases in the price of food.

For Peru, large-scale mining plays a key economic role – at both the national and local level. Nationally, the sector accounted for 61% or US\$21.7 billion of Peru's total export revenues in 2010. With regard to gold mining specifically, exports totalled US\$7.7 billion in 2010, of which 41% came from the four sample mines in this study.

In terms of employment, the dynamics around mining jobs are different from those in other sectors. Jobs in the formal, or large-scale mining sector, amounted to just 1.2% of total employment, compared with 40% for agriculture. It is worth noting that in 2010 mining employment jumped to 147,374 nationally, a 17% increase over the previous year. In fact, the mining industry now faces a shortage of skilled labour as new projects and mine expansions compete for workers, from operators to managers. According to the Ministry of Energy and Mines, however, some 2.5 mn Peruvians make their living from the mining industry, once direct and indirect employment, and those who depend on mining workers, are accounted for.

The average skill set and, therefore, income of a mining industry worker (in the formal mining sector) far exceeds that of, for example, an agricultural worker. Additionally, it is estimated that sub-employment (covering underpaid, underemployed or unemployed conditions) in mining is only 16%, compared with 65% in agriculture. Such differences mean that mining employment can underpin other economic activities.

By contrast, agricultural employment has a much lower multiplier effect.

Mining has consistently represented 40–60% of Peru's total export earnings over the last three decades. The sector has been one of the largest taxpayers in the country throughout the last decade, representing 25% of total government revenues at its peak in 2007 and an average of 14% between 2000 and 2010. While in recent years these revenues have grown in absolute terms, so have those from other sectors, decreasing the proportion from mining, a positive indication for economic sustainability.

Looking at the four World Gold Council member company mines used as the sample for this study, these mines alone represented over 12% of total mining exports and 6% of total exports from Peru in 2011. The fact that these percentages have dropped noticeably from those cited in the first edition (20% of total mining exports and 12% of total exports in 2009), is an indication that these major mines are not creating the export dependency that characterizes the Dutch Disease¹ phenomenon evidenced in some mineral-dependent economies. The sample mines' contribution to FDI² reached 6.6% of Peru's total; their total expenditure exceeded US\$1.4 billion in 2011, with the 2012 projection exceeding \$2.3 billion, making this group of mines a significant contributor to foreign exchange reserves in its own right.

1 Dutch disease is the negative impact on an economy of anything that gives rise to a sharp inflow of foreign currency, such as the discovery of large oil reserves. The currency inflows lead to currency appreciation, making the country's other products less price competitive on the export market. It also leads to higher levels of cheap imports and can lead to deindustrialisation as industries apart from resource exploitation are moved to cheaper locations. The origin of the phrase is the Dutch economic crisis of the 1960s following the discovery of North Sea natural gas (Financial Times Lexicon).

2 FDI, strictly calculated, would include neither the investment by Buenaventura (a Peruvian company) nor the portions of investments in other mines attributed to their minority Peruvian ownership stakes, but has been used here as a proxy for FDI given the overwhelming majority of foreign ownership within the sample.

The local impacts of the sample mines are equally significant. These include employment, procurement from local suppliers, community contributions, infrastructure improvements and taxes paid, together with projects funded through the voluntary contributions regime considered below. The sample mines' aggregate employment level is set to peak in 2013 at 5,227 workers, with 98% being Peruvian nationals. Of the US\$337 mn annual average in total salaries expected to be paid by the mines from 2012 through 2018, salaries paid to residents of the local communities account for more than US\$67 mn per year, a significant boost to local and regional economies.

Based on the multiplier used for this study, we estimate that the indirect job creation impact of the sample mines from 2005 to 2018 will average nearly 8,700 additional jobs annually, and will exceed 10,000 in both 2012 and 2014.

In terms of local procurement, the sample mines' expenditure with national suppliers is expected to average 88% of their total procurement or nearly US\$1.2 billion per year during the peak period 2007–13. In some years, this exceeds twice the quantum of taxes paid by these mines and, in turn, generates additional revenues for government. The local effects of this expenditure are just as noteworthy, with some US\$165 mn going to community-based firms in 2011, more than twice the expenditure with these firms in the previous year, suggesting that the local procurement programmes have increasing momentum. In the context of most extractive industries, these are high figures, and most likely reflect the increasing maturity of local suppliers in the mining regions of Peru.

As mentioned, these indicators, while noteworthy, do not capture the impacts of the sample mines on the individuals and families of the regions studied. Interviews yielded accounts of new jobs representing dreams come true: owners of local suppliers to the mines reported being able to send their children to university for the first time, while local companies were able to lift the standard of living of entire communities by way of employment and training. With at least several decades of planned large-scale mining activity in these regions in prospect, these mining-related jobs and businesses have the potential to result in sustainable development. In addition, the follow-on and supply chain effects of the mining and supplier operations, as well as consumption by employees in the local economies, should have similar if not more pronounced effects.

With Peru's recent achievement of being recognized as the fourteenth country to become compliant with the requirements of the Extractive Industries Transparency Initiative (EITI), the benefits of transparency around the economic contribution of mining should result in a greater focus on the ways in which mining revenues are used and the quality of that expenditure. It is noteworthy that EITI compliance was largely driven by welcome co-operation between mining companies and civil society in a context where traditionally such co-operation has been difficult to achieve.

Introduction

This is the second edition of a report originally published in 2011. It is the third in a series produced by the World Gold Council which investigates topics connected with the sustainability of large-scale gold mining. The first appeared in December 2008, *Safeguarding Workplace and Community Health: how gold mining companies are fighting HIV/AIDS, tuberculosis and malaria*. The second, *The Golden Building Block: gold mining and the transformation of developing economies*, was published in September 2009.

New findings

The new data incorporated into this second edition reveal a number of noteworthy changes over a period of one to two years. The current percentage of Peru's mining exports and total exports represented by the four mines dropped from 20% and 12% in 2009 to 12% and just over 6% in 2011, respectively, indicating both further diversification in Peru's export economy, and that these major mines are not creating the export dependency that characterizes, in part, the Dutch Disease phenomenon.

However, despite this smaller role in Peru's overall exports, the mines reported increased production plans and corresponding increases in employment and wages. Production (Chart 15) as well as contributions to exports (Chart 16) now appear set to level off. This is in stark contrast to the pronounced diminishing patterns of both of these shown in the first edition. The mines' contribution to FDI has also seen a significant boost, due to increased investment plans by the participating companies. While the initial data sample consisted of the largest mine operating by each participating company, the sample now also incorporates the current investment and future plans for the

Newmont/Buenaventura Minas Conga project in Cajamarca. While estimated figures for Conga's production volumes, revenues, tax and royalty payments were not yet available, figures for headcount and expenditures are reflected from 2011 until the end of the data period. The planned construction of Conga plays a role in the increased estimates of employment, and in moving the peak year for employment from 2011 in the first edition to 2013 in the current edition.

In fact, as every chart in Section 2 shows, the contributions of the sample mines have been significantly revised upward in every indicator, even those unaffected by Conga, due to increased investment and production plans. Perhaps most noteworthy is the contribution to government revenues which was projected to tail-off to 0.1% in 2018 in the first edition and now barely drops below 0.4%, a four fold increase excluding any revenues from Conga. Also importantly, the payroll figures now appear level at more than 4,000 workers through 2018, whereas in the previous forecast they dropped below 500 by 2018.

Background

Like *The Golden Building Block*, which employed a life-cycle assessment (LCA) to determine the effects of a representative sample of large gold mines on the national economy of Tanzania, this report applies the LCA methodology to the effects of gold mining on Peru's economy. However, it differs from the Tanzania report in several important aspects. First, less data were available for this study. This is due to the fact that changes in corporate accounting systems and other factors made the collection of comparable internal data impossible in certain periods. In addition, while large-scale gold mining is a recent activity in Tanzania, beginning in 1994, Peru's economy has been closely linked to mining for literally centuries. Last, in the Tanzania LCA, we focused solely on national economic indicators, while this study includes an additional emphasis on the local economic impacts in the host regions of the featured mines.

Methodology

The World Gold Council collaborated on the original edition of this study with Oxford Policy Management (OPM). The study rests on two streams of research and analysis: quantitative data capture and analysis on one hand, and on-the-ground interviews in Peru on the other. After the OPM team designed the data collection template (see appendix) to gather internal figures (in aggregate, to preserve the internal, confidential data disclosed by each company), World Gold Council Sustainability Advisor, Maureen Upton, conducted on-the-ground research in Peru including interviews with numerous gold mining company representatives and local suppliers. To author this study, she collected and aggregated the company data for analysis by OPM, and then drew extensively on OPM's findings, which included not only the data analysis but also Peru's historical and economic background. For the updated edition, the data and conclusions drawn were reviewed by Professor John Tilton of the Colorado School of Mines.

World Gold Council members Newmont Mining Corporation, Barrick Gold Corporation, Gold Fields Limited and Compañía de Minas Buenaventura participated in this study (Table 1).

Table 1: Participating companies and mines

Company (controlling interest/operator)	Mine	Region	2011 production (000 Au oz)
Newmont	Yanacocha	Cajamarca	1,300
Barrick	Lagunas Norte	La Libertad	750
Buenaventura	Orcopampa	Arequipa	285
Gold Fields	Cerro Corona	Cajamarca	161
Newmont	Conga	Cajamarca	N/A

Chart 1: Sample gold mines



The findings of our research are based on the data available from these mines in our sample only. Aside from the Newmont/Buenaventura Conga project, the data does not reflect future projects, nor does it include future expansions of existing mines other than those already incorporated into current operating plans. This explains why the findings show a noticeable decline in future gold mining activity – all mines eventually wind down and close, after all. One estimate of new mining investment – for all commodities – in the Cajamarca region alone (home to Yanacocha, the Conga project and Cerro Corona) is US\$26 billion over the next 8–10 years³. Given recent gold prices, one might assume that, subject to regulatory approvals, the mine plans could be extended and exploration near currently operating sites expanded. This could prolong the operating period of a given mine by years, if not decades. We are of course not in a position to make such predictions, but history suggests that such assumptions are reasonable.

³ Industry and community interviews, Cajamarca, December 2010.

Part I: Peru – economy, history and mining industry

Between the 19th century and the mid-20th century, most of the Peruvian population made a living through agriculture. These primary goods drove exports as well, although foreign investment played a key role in the extraction of gold and silver for export during this period.

Brief economic history of Peru

As shown in Chart 2, Peru enjoyed comparatively high rates of growth from the 1950s to the 1970s, enjoying generally high rates of growth. After this period and until the early 1990s, however, the nation had one of the most deeply troubled economies in the region.

The high rates of poverty and income disparity, which have characterized Peru throughout its modern history, worsened in the 1980s. This was due in part to the population's growth outpacing economic opportunities and the decreasing ratio of arable land to population. By the 1960s these conditions contributed to increasing public criticism of foreign ownership and the nationalisation of several of the largest companies, a highly restrictive legislative environment and a more active role for the government, under the Velasco administration, in the economy. The result was low levels of new foreign investment throughout the 1980s.

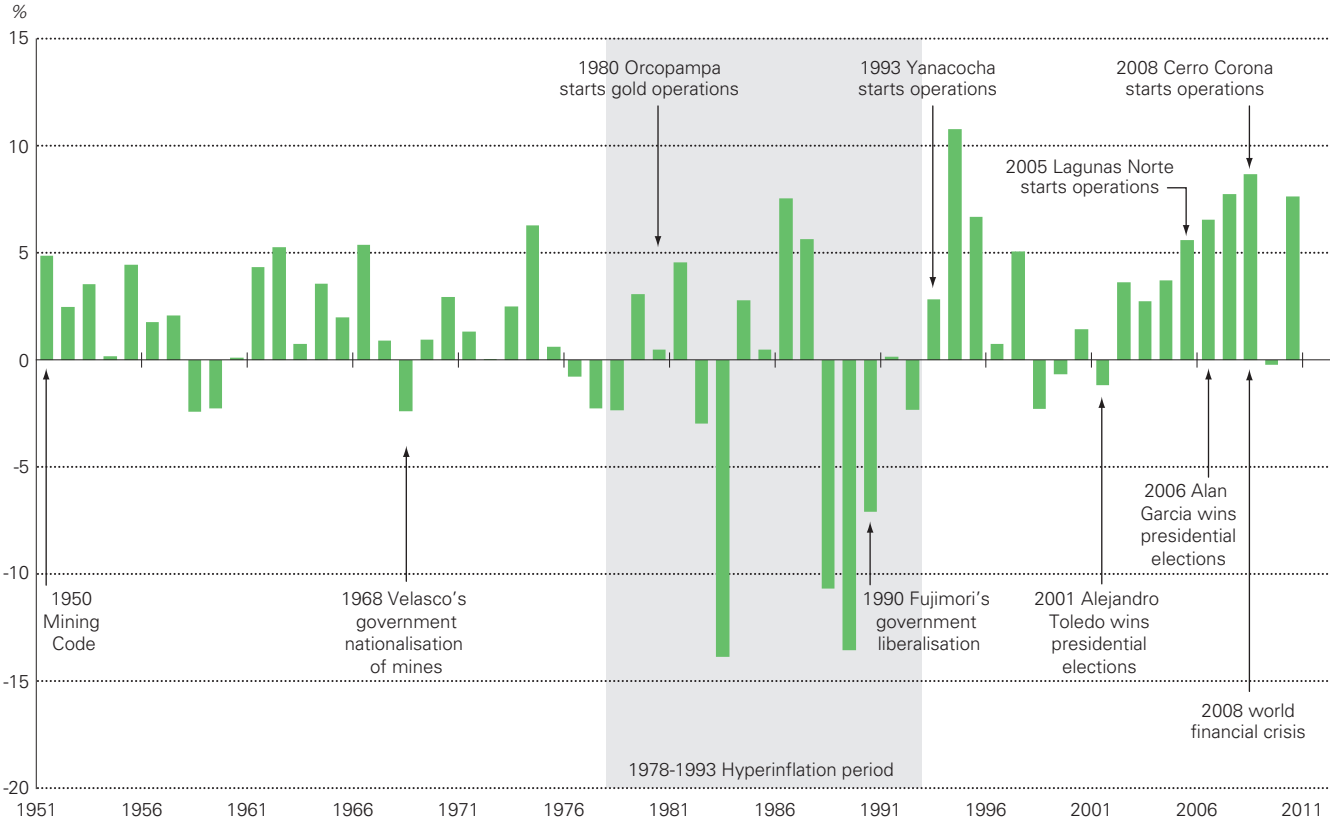
Following zero growth in output per head in the period 1965–88, performance actually dipped below 1965 levels in 1989 and 1990. At the same time, inflation went from moderate to high, a chronic deficit in the balance of payments developed, and Peru fell deeply into external debt.

Between 1980 and 1985, the Belaunde administration became unable to meet scheduled debt payments, with the result that the subsequent Garcia administration (1985–90) imposed a limit on debt payments to 10% of export earnings. From this point, foreign credit all but disappeared.

The Fujimori administration (1990-2000) sought to tackle a nexus of challenges including falling national output and income, high unemployment, worsening poverty and violence, accelerating inflation and deep external debt. In response, the government put in place a drastic stabilisation programme starting with a concerted attack on inflation. While inflation was brought under control (though not without a severe economic shock), the economy showed few signs of recovery. In parallel, the violence associated with the Shining Path insurgency were brought under control, aided by state programmes directed at improving infrastructure and aiding some of the poorest parts of the country.

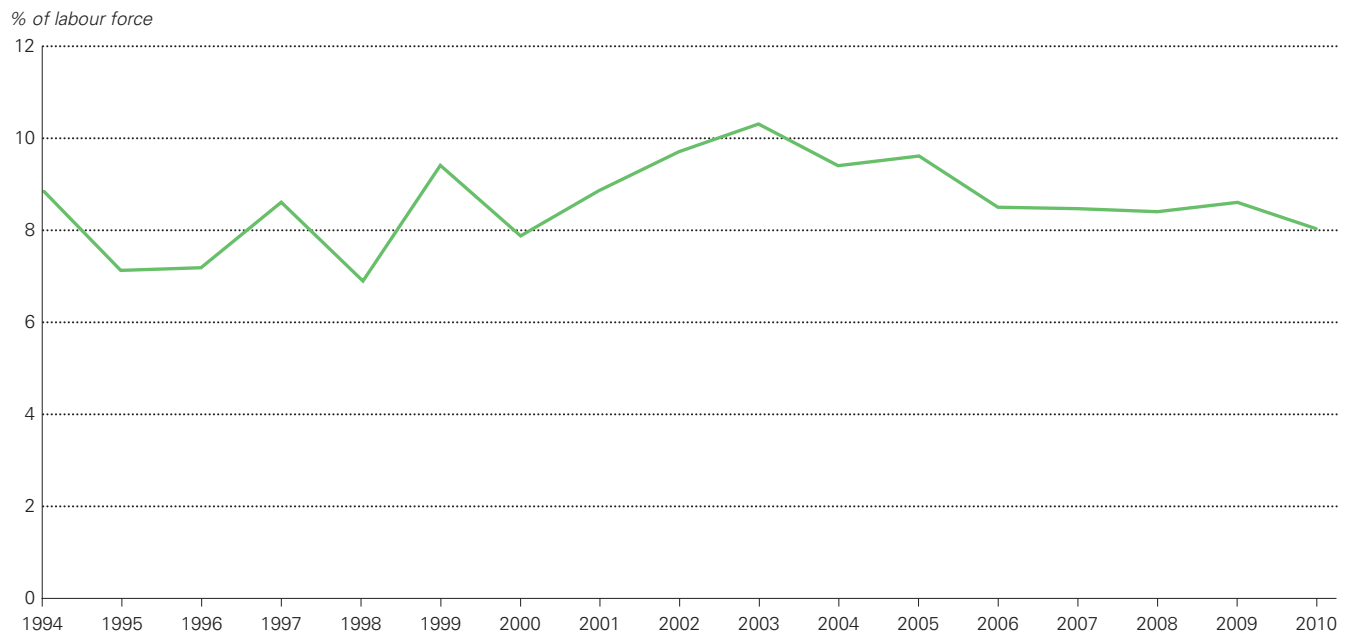
Under Fujimori, a new attitude was forged towards foreign investment and corresponding measures were introduced to open the economy. While some investors responded rapidly, the state of the economy combined with the incidence of violence constituted a discouraging investment environment.

Chart 2: Peru's GDP growth per capita, 1951 to 2010



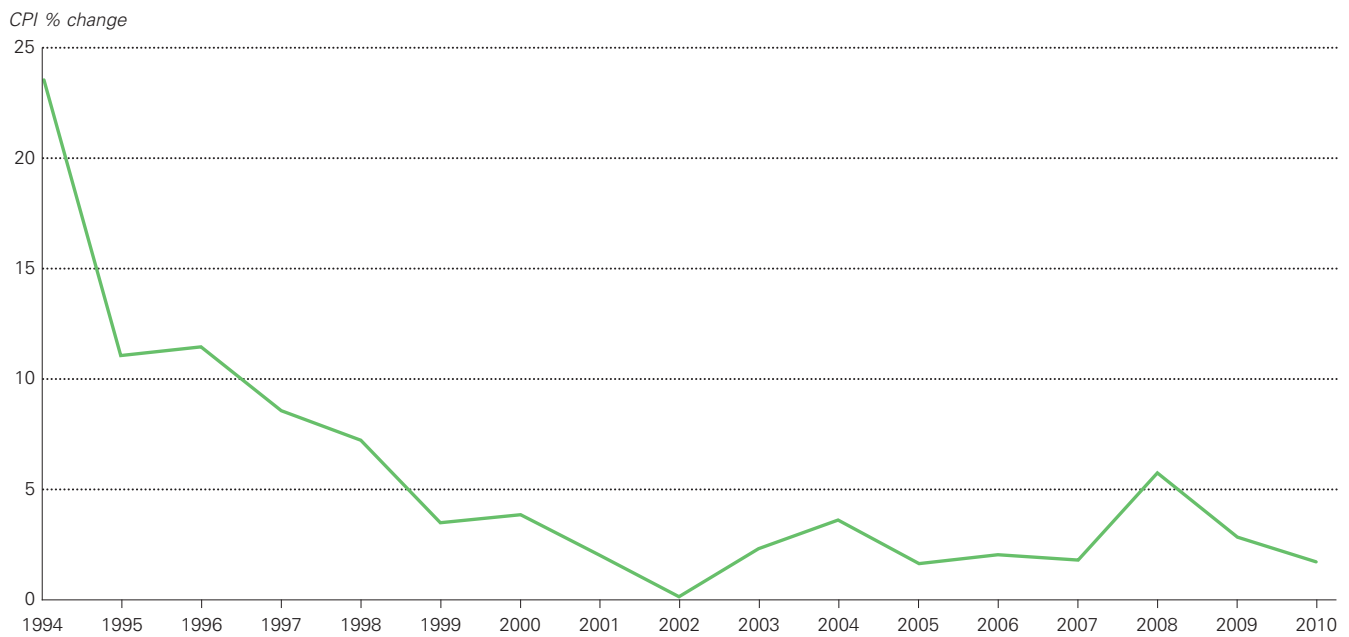
Source: Maddison (2010)

Chart 3: Persistent unemployment, 1994 to 2010 (% of labour force)



Source: International Monetary Fund, World Economic Outlook Database, September 2011

Chart 4: Falling and stabilising inflation, 1994 to 2010 (CPI % change)



Source: International Monetary Fund, World Economic Outlook Database, September 2011

Recent economic growth

With the exception of 2009, Peru's strong economic growth over the last decade has made it one of the best performers in Latin America. Inflation has been stable, and GDP has grown significantly amid a generally positive macroeconomic backdrop. Unemployment, however, has remained high with little improvement for the last 15 years (Chart 3), until a drop just below 8% in 2010, the lowest level since 2000. In this period, GDP per head posted gains of 65%, and the economic growth between 1991 and 1997 helped to drive down the poverty rate by several points. The recession of 1998–2001 set the economy back considerably, but growth has been sustained since 2001 and appears to be on track to continue over the next several years.

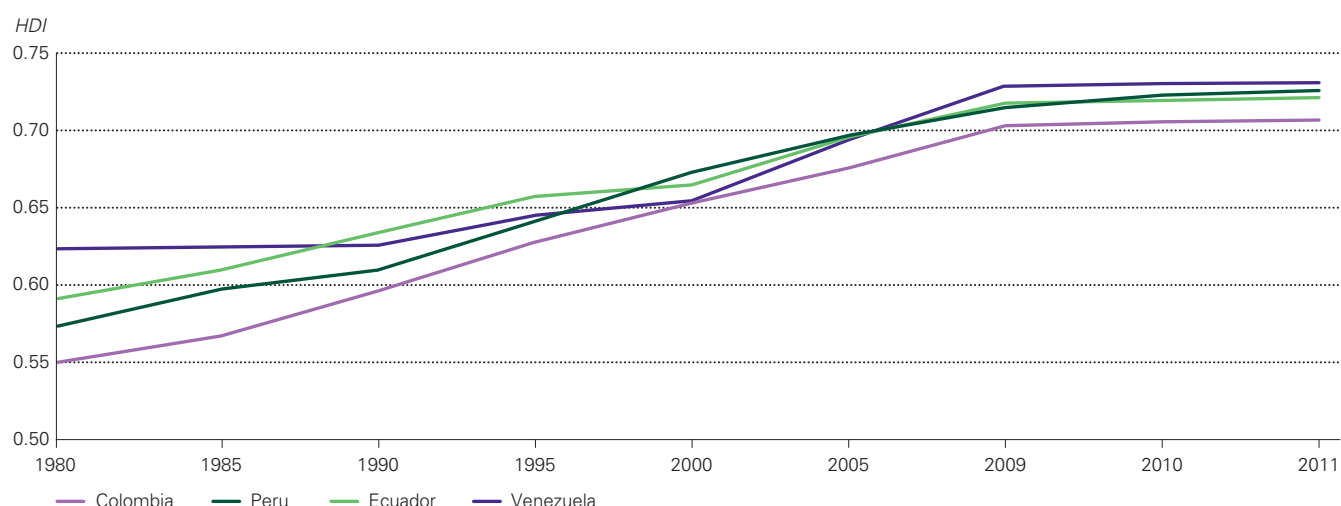
Inflation has remained in single digits since 1997 (Chart 4). This is in stark contrast to the period between 1978 and 1993 when it never dipped below 50%, peaking at 7,482% in 1990, when Fujimori's stabilisation programme was introduced.

Social development and poverty alleviation

In the past few years, Peru has kept pace with its neighbours in the fight against poverty (Chart 5) as measured by the UN's Human Development Index (HDI), but has slipped from 63rd to 80th place globally in HDI rank.

Regrettably, over half of Peru's population still lives below the poverty line, as measured by UNDP's Multidimensional Poverty Index. While, as has been seen, mining revenues to the government have made a significant contribution to the national economy, they do not appear to have translated into additional poverty reduction programmes at the national level (see Part II for local economic impacts). In terms of HDI ranking, Chile, Mexico and Venezuela had higher rankings in the region than Peru in 2010 (Table 2).

Chart 5: The fight against poverty – Peru and its neighbours (Human Development Index)



Source: Human Development Report, UNDESA (2011), Barro and Lee (2010), UNESCO Institute for Statistics (2011), World Bank (2011a) and IMF (2011)

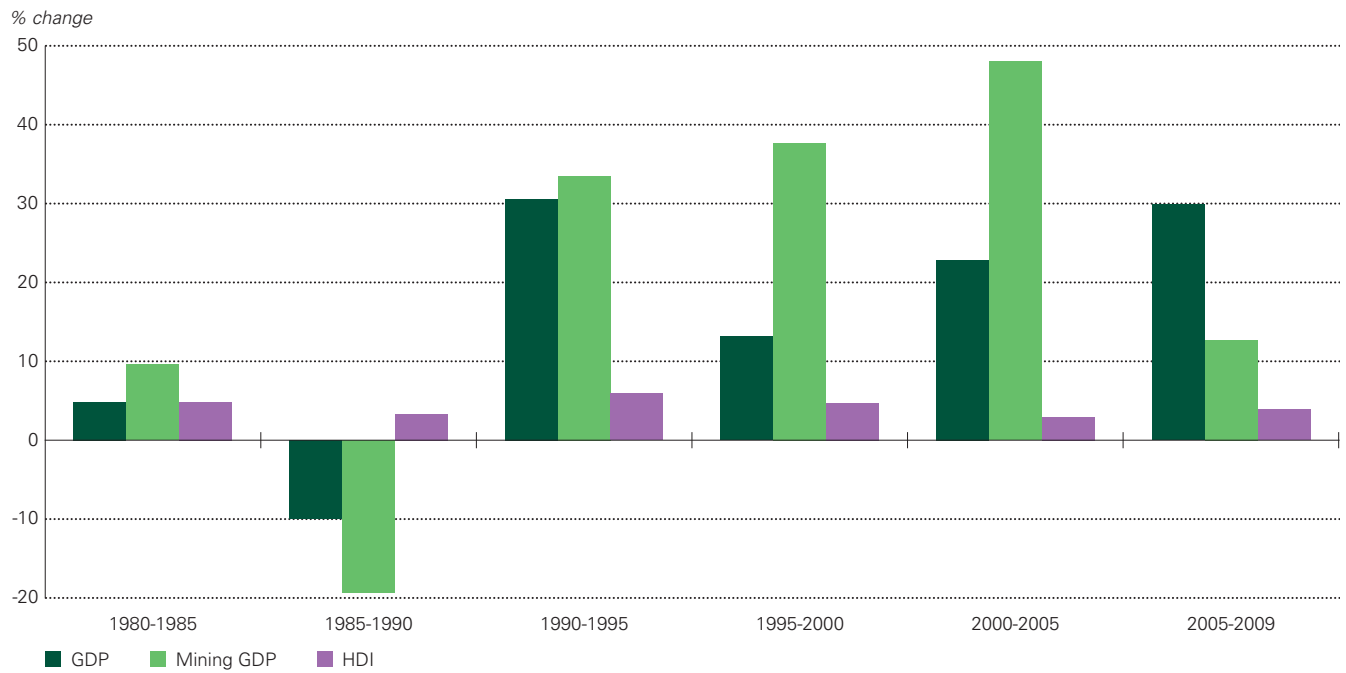
Table 2: International Human Development Indicators for 2011

	Human Development Index (HDI) value (low good)	Life expectancy at birth (years)	Mean years of schooling (of adults) (years)	Expected years of schooling (of children) (years)	GNI per capita in PPP* terms (constant 2005 international \$)
Chile	44	79.1	9.7	14.7	13,329
Mexico	57	77	8.5	13.9	13,245
Venezuela (Bolivarian Republic of)	73	74.4	7.6	14.2	10,656
Peru	80	74	8.7	12.9	8,389
Ecuador	83	75.6	7.6	14	7,589
Brazil	84	73.5	7.2	13.8	10,162
Colombia	87	73.7	7.3	13.6	8,315
Bolivia (Plurinational State of)	108	66.6	9.2	13.7	4,054

*Purchasing power parity

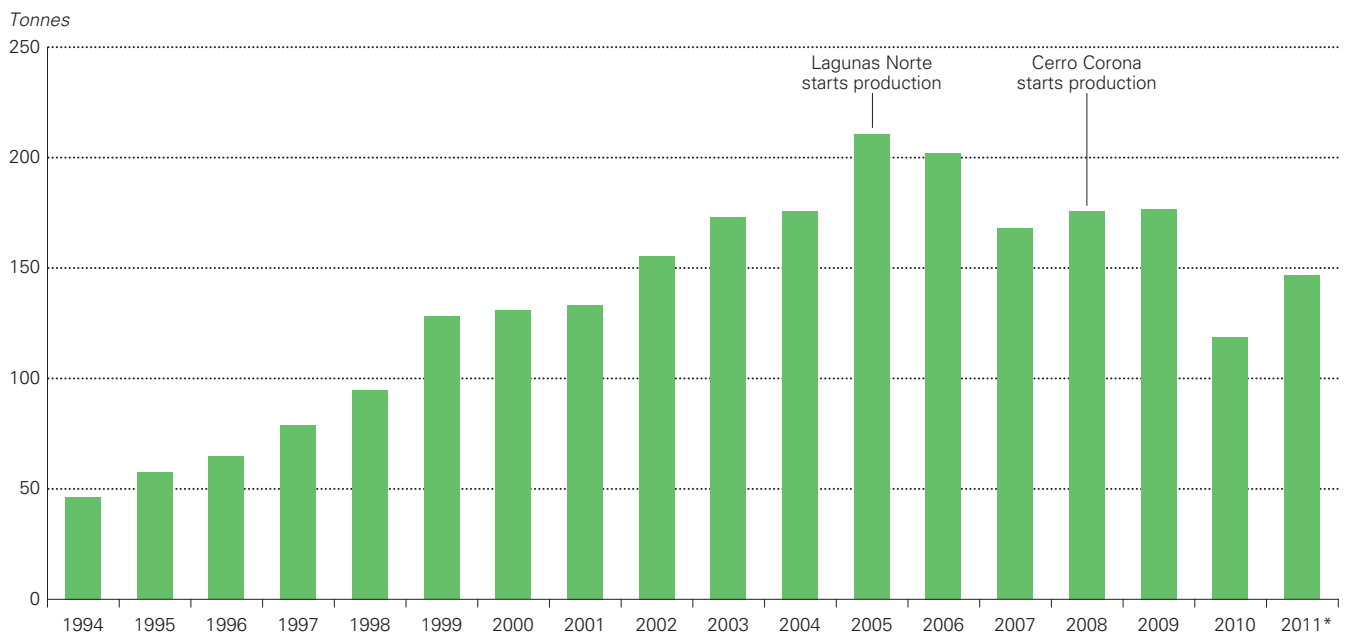
Source: UNDP, Multidimensional Poverty Index (2011), <http://hdr.undp.org/en/statistics/mpi/>

Chart 6: Inconclusive results – variations in GDP, mining GDP and HDI, 1985 to 2009



Source: HDI and BCRP

Chart 7: Gold production 1994 to 2011 (in tonnes)



*2011 figure includes only the first nine months

Source: Ministry of Energy & Mines

When comparing the variations in Peru's GDP, GDP from mining and changes in HDI, it is not possible to establish a correlation between them (Chart 6). Since 1980, HDI performance increased steadily, while both aggregate GDP and mining sector GDP varied widely. In 1990, for example, although aggregate and mining GDP decreased significantly, HDI increased from 0.588 to 0.608 (in the period 1985–90). Also, from 2000 to 2005, when the highest GDP growth rate was registered, HDI showed the smallest gains compared with other five-year periods.

Brief history of mining in Peru

Gold has played a pivotal role in Peru's economy for centuries. It has been an important source of wealth since the Inca civilization. As an important economic activity in Peru before, during and after colonisation, the overall mining industry developed as an export sector and has consistently been a leading provider of foreign exchange and tax revenues. Mainly owned by foreigners, and having little relation to the domestic economy for its supplies and markets, mining was at the centre of the debate over dependency, perceptions of exploitation and foreign investment. With the enactment of the Mining Code in 1950, rules for private investment were established which opened the door to increased foreign participation, and many mines started operations.

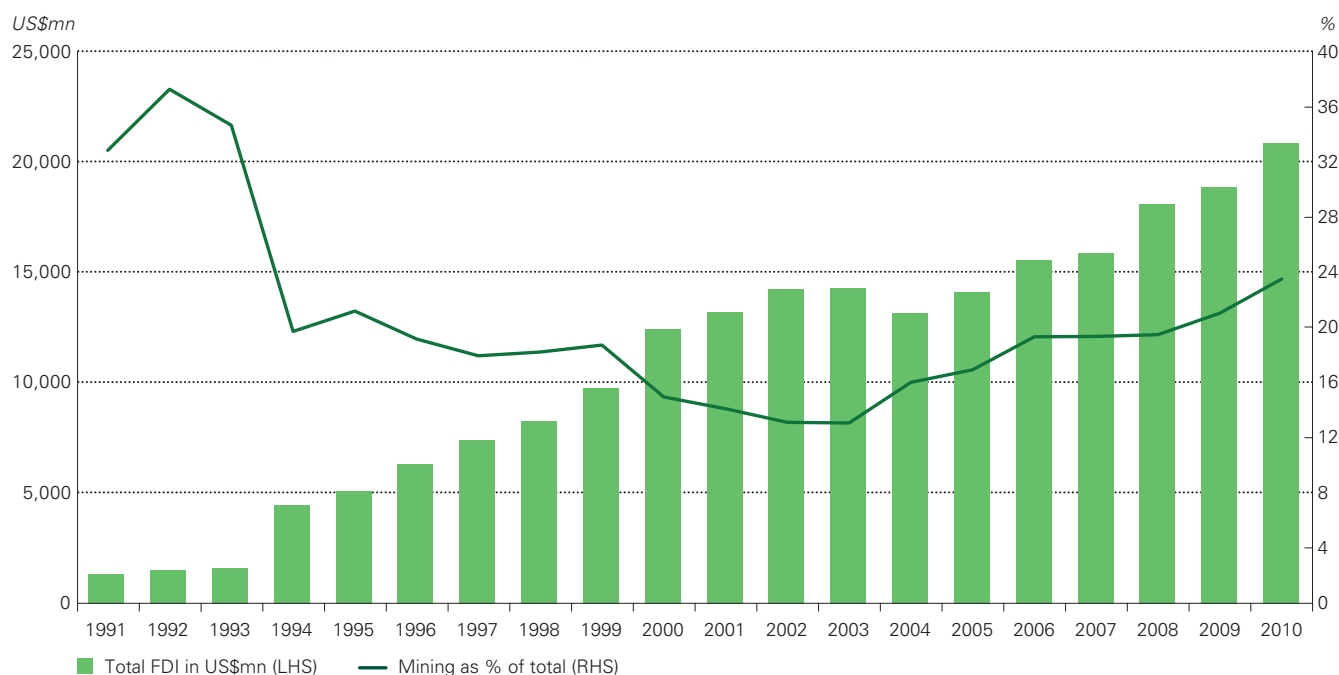
From 1950 to 1968, mining exports rose by a huge order of magnitude, from US\$45 mn to US\$454 mn. The 1970s brought nationalisation to Peru's extractive industries, and both the International Petroleum Company, which dominated the Peruvian oil industry, and the largest copper mining company, Cerro de Pasco, were brought under state control.

As the economic and political turmoil of the 1980s took its toll, guerrilla violence and strikes disrupted supply chains to the mines. Nationally, GDP in 1988 was 14% below 1980 levels. Throughout the 1980s, however, the state ownership structure of the mining sector remained in place. With the start of Fujimori's presidency in the early 1990s, nearly all the state's mining enterprises were privatized, with FDI and private-sector participation in general being actively encouraged. Total investment in the mining sector from 1992 to 2004 reached US\$9.8 billion; gold production quadrupled between 1994 and 2005.

Mining and FDI

The percentage of Peru's FDI represented by mining increased to 23% in 2010, the highest level since 1993. Mining FDI averaged 21% of the total from 2006 to 2010 (Chart 8), up from 14% in the period 2000–04.

Chart 8: Total and mining foreign direct investment 1991 to 2010



Source: Proinversión, Agencia de Promoción de la Inversión Privada, Perú

Opposition to mining in Peru today

In 2011, as in previous years, there were tensions and resistance around specific mines and mining developments. Construction activities at the Conga project near Cajamarca were suspended due to protests in late November 2011, and its Environmental Impact Assessment (EIA) is currently undergoing an additional government review, having already undergone extensive reviews by 12 agencies and being approved by the Ministry of Energy and Mines in 2010 after a three-year public EIA process. Although still in the EIA review phase, Conga's community investment programmes are well under way. They have already resulted in declines in malnutrition in the areas around the project, gains in livestock and crop production, numerous agricultural irrigation systems and the plans to provide year-round drinking water to the area's residents for the first time.

Supported by the national government under the administration of President Ollanta Humala, the Conga project is opposed by the regional government for the Department of Cajamarca. A number of other projects in Peru experienced local protests in 2011, including:

- Southern Copper Corporation's Tia Maria copper project suspended work due to violent protests, with news reports indicating fatal clashes between protesters and police in March and April 2011.
- Anglo American's Quellaveco copper project's board approval was delayed until 2012 on 29 July 2011 reportedly due to opposition.
- Bear Creek Mining Corporation's Santa Ana silver project had approval rescinded by the Garcia administration in June 2011 when multiple fatalities and injuries were reported during protests.
- The Antamina copper and zinc mine in the Ancash region experienced protests in November 2011 when protesters from nearby towns took over the facility's pipeline valves and blocked roads.

Mining and GDP

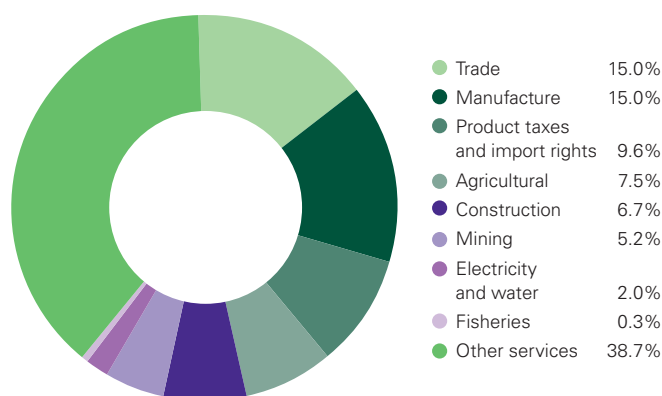
At the national level (see Part II for local impacts), mining has continued to deliver a solid performance. The sector accounted for approximately 5.2% of GDP in 2010 (Chart 9), and has grown 11% over the last five years.

The mining sector's contribution to total national income has translated into a significant rise in job creation. According to the most recent study by the Mining Institute of Engineers of Peru, published in 2010, over 2.5 mn people were the beneficiaries of jobs created by the mining sector in Peru in 2008. This included 127,228 workers directly employed in large-scale mining (an 80% increase in nine years) and 508,912 indirectly employed. Along with these figures, a further 1.9 mn dependants of these workers should also be taken into account (an estimated three people are sustained by each worker). The indirect jobs are in engineering and construction, accounting, legal, environmental, apparel, transportation, security and food services (see Part II for local vendor profiles).

In 2010, mining employment in the formal sector jumped to 147,374 nationally, a 17% increase over the previous year, based on the surge in investment and corresponding demand for labour mentioned in the Introduction. According to the Ministry of Energy and Mines, some 2.5 mn Peruvians make their living from the mining industry, including direct and indirect employments and those who depend on mining workers.

It is essential to note that the average skill set and income of a mining worker far outpace that of, for example, an agricultural worker. Also, estimates hold that informal or sub-employment (covering the underpaid, underemployed or unemployed) in mining is only 16%, compared with 65% in agriculture. These differences help mining employment to facilitate other economic activities, creating much greater leverage than, for example, agricultural employment.

Chart 9: GDP composition by sector, 2010



Note: Deviations of 0.1% from 100% total result from rounding errors.

Source: BCRP, Cuadros Anuales Históricos

Mining and exports

While following a similar trend to overall exports in Peru in recent decades, mining exports have consistently represented 40–60% of the total for the last three decades. It follows that mining exports appear to respond to open trade policies in much the same way as agricultural and other exports. The large increases in the value of mining exports since 2005 (Chart 10) are significantly influenced by rising gold prices (Chart 11), as gold production levels have remained broadly stable for the last five years.

Chart 10: Total and mining exports 1980 to 2010



Source: BCRP, <http://www.bcrp.gob.pe/estadisticas/cuadros-anuales-historicos.html>

Chart 11: World gold prices, 1994 to 2012

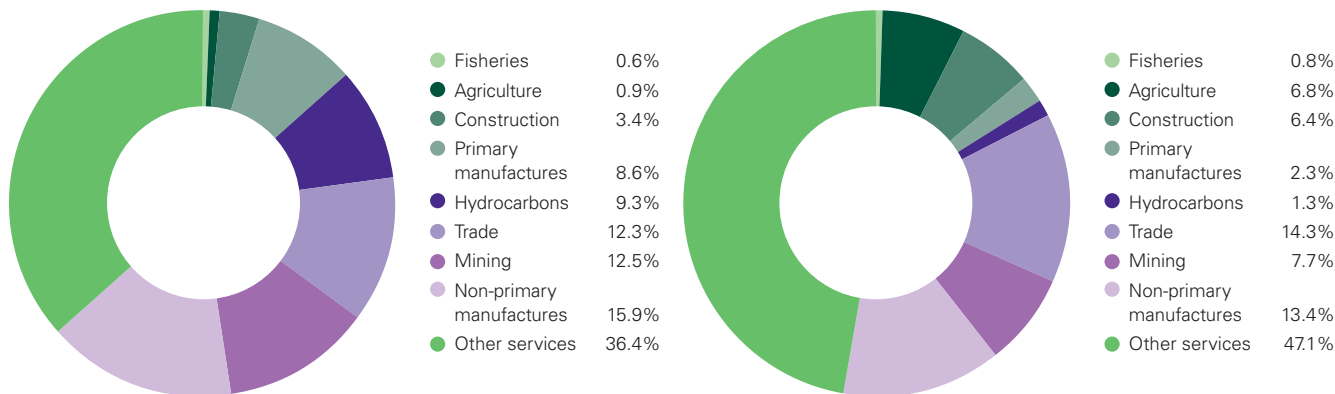


Source: World Gold Council

Chart 12: Government revenues per sector vs. GDP per sector (1999 to 2009)

Government revenues per sector

GDP per sector



Note: Deviations of 0.1% from 100% total result from rounding errors.

Source: Reproduced from SNMPE (2011), Figures 8 and 9. Original source cited: SUNAT.

Mining and government revenues

The mining sector has been one of the largest taxpayers in Peru throughout the last decade, representing 25% of total government revenues at its peak in 2007. While mining revenues have grown in absolute terms in recent years, so have those from other sectors, decreasing the proportion from mining.

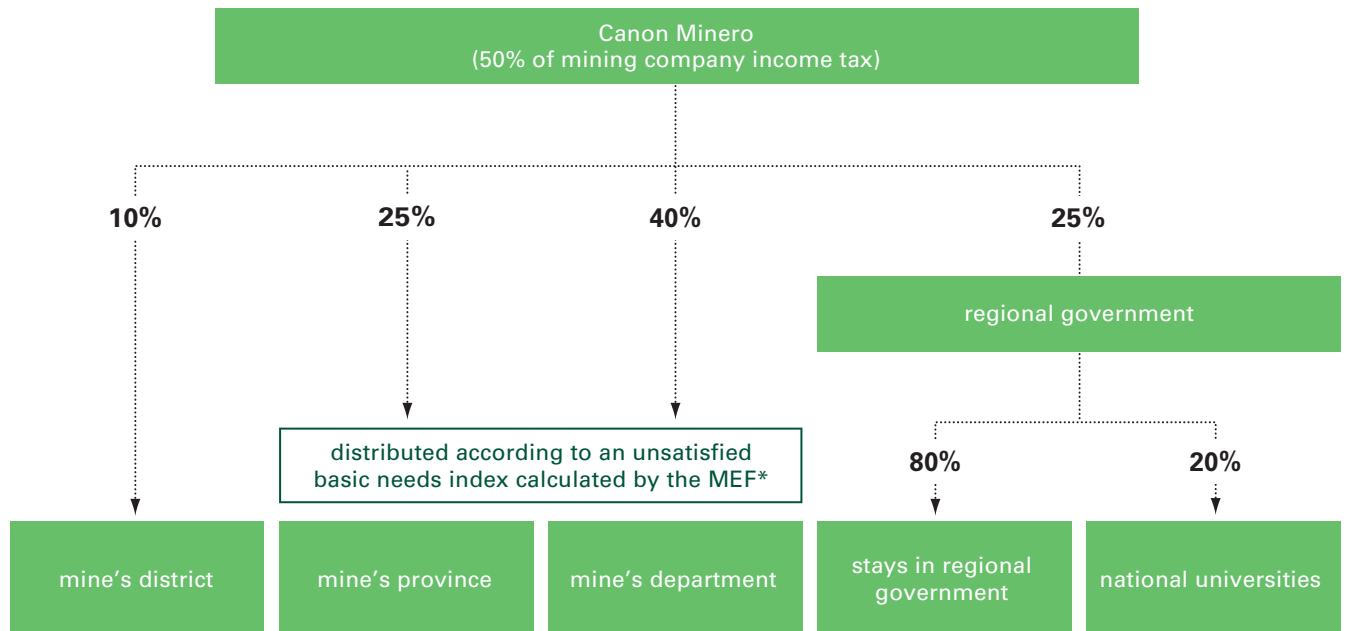
This is a positive indication in terms of Peru’s economic sustainability; the country’s natural resources base has been used to generate an increasingly diversified economy. In comparison with its contribution to GDP, the mining industry is a strong contributor to government revenues (Chart 12). For example, the sector contributed an average 14% to government revenues between 2000 and 2010 (whereas its GDP contribution was 6%). It is notable, however, that revenues from the mining sector have been transformational for the revenue base of provincial governments.

The Canon Minero

In response to claims that mining regions were losing out on benefits flowing from the industry’s overall economic impact, Peru established the Canon Minero. This is a mechanism for the direct distribution of mining revenue from central government to sub-national government entities through the earmarking or hypothecation of 50% of corporate income tax collected from mining companies. These distributions (Chart 13) are intended to be spent on projects contributing to sustainable development by districts, provinces and departments (the sub-national governments).

As OPM finds, while the Canon has transferred increasing revenues in recent years (Chart 14), its effectiveness is necessarily dependent upon sound governance and public fiscal management, as well as adequate administrative capacity at sub-national government levels in order to translate into lasting improvements to local living standards.

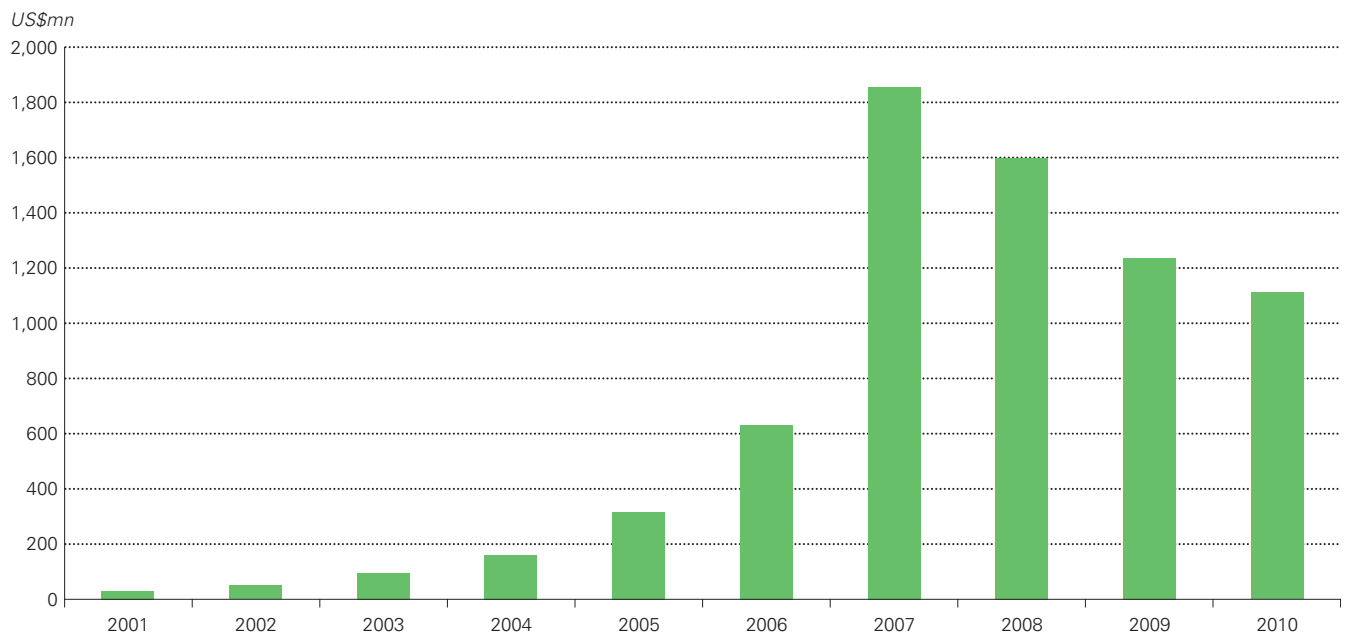
Chart 13: Distribution system of the Canon Minero



*Ministry of Economy and Finance

Source: Reproduced from Dammert, A. and F. Molinelli (2007). Original source cited: MINEM.

Chart 14: Total Canon Minero transferred 2001 to 2010 (in US\$ million)



Source: SNMPE. Exchange Rate 25/01/2011: USD 1 = PEN 2.77

The Mining Programme in Solidarity with the People (PMSP) or ‘Voluntary Contributions’ Programme

The government of Alan Garcia signed an agreement with the mining sector, the Mining Programme in Solidarity with the People (PMSP, its abbreviation in Spanish), known commonly as the Voluntary Contributions (VC) Programme, in December 2006, with the intent of promoting social development through public–private partnerships between mining companies and their surrounding communities. At that time, with the Peruvian public increasingly aware of the increased profitability of mining companies as a result of higher metals prices, the Garcia administration opted, rather than to renege on tax stability agreements or modify the existing mining tax regime (thereby damaging the investment environment), to put in place such a voluntary programme whereby mining companies would agree to contribute a percentage of their profits towards projects compatible with a set list of social development priorities. This was designed to serve as a complement to the Canon Minero, since Canon funds were earmarked for infrastructure projects. It was also a mechanism for mining companies to avoid the imposition of a windfall tax on profits. Not an industry-wide agreement, the PMSP was agreed between the government and individual mining companies.

Although many mining companies saw the programme as mandatory in order to maintain positive relationships with both the Peruvian government and the public, and to protect their reputations, it was technically voluntary in that individual companies had the right to refuse to sign the agreement and some declined to do so. However, none of these were major producers.

The government set out the general list of priorities for PMSP expenditures, so that they would be used to improve the living standards of mining communities:

- Nutrition for children and expectant mothers
- Education and technical training
- Health
- Capacity building in public-sector management
- Development of productive supply chains
- Basic infrastructure

The programme has met with considerable success. This is attributed by commentators to the fact that mining companies were given the ability to execute social projects with their own resources and in the most effective way. Others noted that the PMSP helped to overcome the political and institutional isolation which mining companies often face, and provided the opportunity to build crucial alliances not only with local and regional government, but also with civil society organizations.

Many hoped that the PMSP would be able to unlock regional and local government blockages and bureaucratic stumbling blocks. These were the result of a widespread lack of local governmental capacity whose root cause many saw as a lag between the sizeable increase in fiscal transfers to local and regional governments and the failure of local capacity to spend them effectively.

This bottleneck meant that in many areas only limited amounts of Canon transfers were being spent, and it was hoped that the PMSP would help overcome this through the capacity-building benefits of public–private partnerships which were part of the PMSP’s structure.

The promise of local capacity building and higher expenditures, while significantly better on average than the Canon, did not fully materialize. Some companies achieved promising results, spending nearly all the PMSP allocations each year, but many were challenged to reach consensus with local representatives, meaning that some projects could not be agreed and launched in a timely manner.

PMSP funds were made up of a 3% contribution of profits after taxes but before the distribution of profits to shareholders. They were directed towards local and regional projects and the funds were allocated after the close of each year.

Initially conceived as a five-year programme, the PMSP operated from 2007 to the end of 2011, although some monies remain to be spent. The PMSP structure will now be replaced under the Humala administration by new programmes to continue or replace the priorities under way through the PMSP, although it remains to be seen exactly what the mechanisms for this will be.

One of President Humala's first moves in office was to convene a dialogue with the mining industry in order to reach agreement on a new extraordinary tax on mining and a modified royalty system. These efforts are intended, in part, to replace the work in progress with PMSP funds, but some doubt that this can be effective and predict communities will come back to the mining companies when they need projects executed. However, there is a definite focus on the problem of local public-sector capacity and how to improve it, as well as to reverse the perceived over-funding of mining regions.

While not a panacea, there is evidence that the PMSP improved working relationships between mining companies and regional/local authorities, and helped the authorities to better prioritize projects according to their beneficial community impacts. The programme has been described as an important demonstration of how the mining industry can be a catalyst for sustainable development, more effective in many cases than government-led initiatives.

Indeed, the collaboration which resulted from the PMSP's technical committees, comprised of representatives from the region, municipality, church or community groups and mining companies, brought about more efficient working relationships. A key achievement of the programme was an alignment between mining activities and the fulfilment of basic needs in the communities most affected by such activities. Some suggest that, with the PMSP over, mining companies should build on this experience by assisting regional and local authorities with the prioritisation and planning of Canon-funded projects.

Reflecting on the learnings from the programme, Juan Luis Kruger, Executive Vice President of Gold Fields South America, observed that:

"The main achievement of the Voluntary Contribution Programme was that it allowed for an alignment between the mining activities and the fulfilment of the basic needs of the communities in the areas of direct influence of the mines. It has proven to be a very powerful tool to effectively deploy resources in areas of Peru where typically there is very little or no presence of the government. The programme has been a very strong illustration of how the mining industry can act as a catalyst of social and sustainable development. A study performed by Apoyo Consultoria showed that every dollar spent through the voluntary contribution program had an equivalent impact to five dollars spent by the government."

Gold Fields

Gold Fields La Cima (the entity which includes the Cerro Corona mine) established the private non-profit foundation Development Bridge Association to administer its projects under the PMSP. As La Cima commenced operations in 2009 and only realized profitability in 2010, its first contribution under the PMSP was in 2011, for a total of just over US\$2 mn. In line with the PMSP's stated priorities, the foundation is dedicated to fostering social welfare and sustainable development in the rural and native communities in its area of influence, through strategic alliances with government entities and private companies in the area.

In terms of local economic development, among the objectives of the foundation is to increase competitiveness and to facilitate access to better markets for small businesses. The desired result is that community members, particularly young workers, will gain improved business management skills, resulting in a higher income on a permanent basis, an increase in the quantity and quality of job opportunities and self-employment.

Also in line with the PMSP's central goal, Bridge programmes aim to strengthen both local and regional democratic governance, as well as to increase the foundation's participation in the political process, including grassroots organisations and individuals. An outcome is intended to be the creation of greater local government capabilities and to reduce the role of La Cima in what are more properly government processes.

Technical committees were formed comprised of government authorities, civil society and business representatives, which oversee the approved investment plans. These include two approved projects under the local fund and two under the regional fund.

Table 3: Local Fund (District and Province of Hualgayoc)

Project	Contribution	%
Improving the quality of life indicators for the population at risk in Hualgayoc District - Cajamarca	US\$377,008	94
Management and administration expenses	US\$23,902	6

Table 4: Regional Fund (Region of Cajamarca)

Project	Contribution	%
Municipal comprehensive initiative for the prevention and reduction of malnutrition and deaths in province of Hualgayoc - Bambamarca	US\$1,517,160	94.6
Management and administration expenses	US\$86,480	5.4

Barrick

Barrick manages its contributions to the PMSP through the Neoandean Civil Association (Asociación Civil Neoandina). The contributions go to the areas affected by its mines in Peru: the Áncash region surrounding the Pierina, and La Libertad surrounding its larger Lagunas Norte mine, which is the focus of this report.

Between the inception of the PMSP regime and the end of 2010, Barrick declared contributions totalling \$43 mn (see Table 5 below)

Table 5: Barrick: Declared PMSP Contributions

Year	Declared contribution
2007	US\$9,103,740
2008	US\$10,441,500
2009	US\$13,176,900
2010	US\$10,318,300
Total	US\$43,040,400



Barrick representative with residents near the Pierina mine at the unveiling of a new irrigation system.

(Photo courtesy of Neoandina)

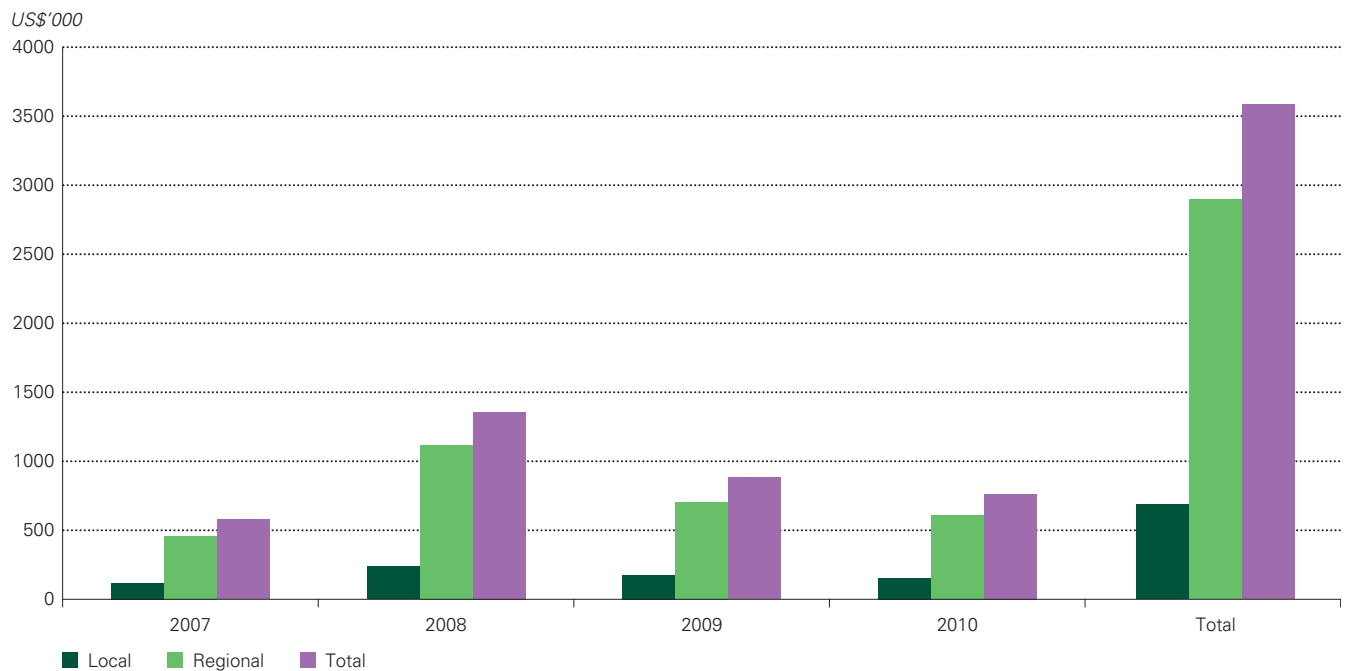
Buenaventura

Between 2007 and the end of 2010, Buenaventura contributed a total of US\$3.6 mn to its regional and local PMSP funds, distributed among some 149 projects. For 2010, US\$749,334 was declared to the PMSP. The only gold producer in this study in southern Peru, Buenaventura contributed funds under the PMSP to the region of Arequipa surrounding its Orcopampa mine, as well as to local municipalities.

The majority of Buenaventura’s contributions to the regional funds have been to the Arequipa fund, with US\$1,523,940 contributed to 85 projects since the inception of the PMSP. Within the local funds supported by Buenaventura, the Orcopampa fund is also the largest input, with US\$334,898 contributed since inception. Of the regional fund for Arequipa, education has been the main priority with US\$168,601 contributed to projects executed for the year 2010.

One of these in 2010 included the Training Programme for Young Entrepreneurs (PFJEC) in Orcopampa and Poracota, targeting the efficient management of public schools in rural and marginalised urban areas. The programme creates opportunities for students to gain the skills necessary to succeed in these adverse environments.

Chart 15: Buenaventura: Annual distribution of funds (in thousands of US\$)



Source: Buenaventura. Converted from Nuevo Soles 3-7-12

Newmont

The Asociación Los Andes de Cajamarca (ALAC) administers Newmont's contributions under the PMSP, overseeing the implementation of projects and convening the stakeholders involved. ALAC, which grew out of Newmont's social responsibility programme in 2004, serves additional purposes related to sustainable development in the Cajamarca area, outside the PMSP administration, but was the obvious and best equipped organization to take on the PMSP management when the programme was initiated.

For the five-year duration of the PMSP, Newmont declared contributions of US\$91.4 million, of which some \$62.8 million has already been executed in projects. For the years 2007 to 2011, ALAC's results have been significant and widespread. Some of these include the strengthening of institutions, which has had impacts throughout in both subnational governments and community groups, such as:

- Improved institutional performance and project management in 59 organizations
- Institutional reform and capacity building in the regional government of Cajamarca, including a long-range development plan through 2021 and improved management of public investment
- Training of 161 civil servants through a partnership with USAID to build institutional capacity within eight sub-national governments in the Cajamarca region

- Formation of 27 Community Development Committees (CODECOs), which have presented initiatives in their respective community development plans.

ALAC's results also include, under its education and health initiative:

- 4% reduction in the school dropout rate, through the Integrated Schools Project Network (PRIE)
- Strategic plans put in place at 87% of educational institutions
- 72% of students participating in the PFJEC, which includes basic economics, finance and business
- Nine professionals in Cajamarca receiving scholarships for skills training and 24 undergraduate students being granted university scholarships
- 7% reduction in chronic malnutrition among children under three years of age in the area of influence

In the area of business capacity building, ALAC has achieved a variety of results in Cajamarca (see Table 6 below)

Table 6: Newmont: Business capacity building results

Indicators	Year					Total
	2007	2008	2009	2010	2011	
Average monthly increase in income for the families involved in productive projects US\$	100.00	100.00	140.00	140.00	127.00	121.00
Increased sales by businesses US\$.	17,181,296	29,898,211	3,334,324	2,118,258	2,250,784	54,782,873
Jobs generated	12,062	4,637	3,035	3,278	2,787	25,799
Number of people trained	12,480	1,126	1,160	981	2,889	18,636
Number of businesses incorporating social responsibility practices	2	20	67	60	9	158



Luciano Tafur Chavez, treasurer of the Monte Sion Savings and Credit Union in Cajamarca, delivers a financial overview of ALAC's programmes and their results in terms of growth, number of families served, social capital and loans extended.
(Photo courtesy of ALAC)



Student Maria Blanca Maribel Tingal Flores, at the Granja Porcon school in Cajamarca.
(Photo courtesy of ALAC)



Jorge Huaman Torres and Alejandro Sangai Cabrera, graduates of the Koriwasi jewellery programme, use their new skills.
(Photo courtesy of ALAC)

Part II: Impact of the sample mines

The mines included in this study are the top-producing gold mines operated by World Gold Council member companies in Peru. They are Yanacocha (Newmont), Cerro Corona (Gold Fields), Lagunas Norte (Barrick) and Orcopampa (Buenaventura), which represent nearly 60% of current gold production in the country, together, for a minority of indicators, with the Minas Conga project (Newmont/Buenaventura), which is the largest planned mining investment project in Peru's history.

Table 7: Participating companies and mines

Company (controlling interest/operator)	Mine	Region	2011 production (000 Au oz)
Newmont	Yanacocha	Cajamarca	1,300
Barrick	Lagunas Norte	La Libertad	750
Buenaventura	Orcopampa	Arequipa	285
Gold Fields	Cerro Corona	Cajamarca	161
Newmont	Conga	Cajamarca	n/a

Chart 16: Sample gold mines



The Life-Cycle Assessment (LCA)

The LCA data collection template designed by OPM for this study (see Appendix) requested information in several main areas:

1. Basic data on the mine – when exploration started, when construction started and finished, and when the mine started operating.
2. Revenues: production volumes and sales.
3. Royalties.
4. Capital expenditure (CAPEX):
 - a. either (i) services and works, or (ii) equipment and materials.
 - b. Local content, split into two components: community content and national (i.e. total domestic) content.
5. Operational expenditure (OPEX) – either (i) services and works, or (ii) equipment and materials.
6. Community contributions.
7. Tax payments.
8. Mine closure costs.

Findings of the LCA

It is important to highlight a number of limitations on the time period of data collection for the LCA. First, some companies have changed to different accounting systems at some point during the mine’s productive life, making the collection of directly comparable data before that change impracticable for this study. Also, it is only possible to use data from those years when at least two mines in the sample reported data, in order to aggregate the figure and thus preserve the confidentiality of internal company information.

As a result, the data period used was from 2005 to 2018. Much of the productive lives of the sample mines are included in this time span, but not all, and in some cases the key phase of construction, when large numbers of jobs and procurement figures were registered, is not included.

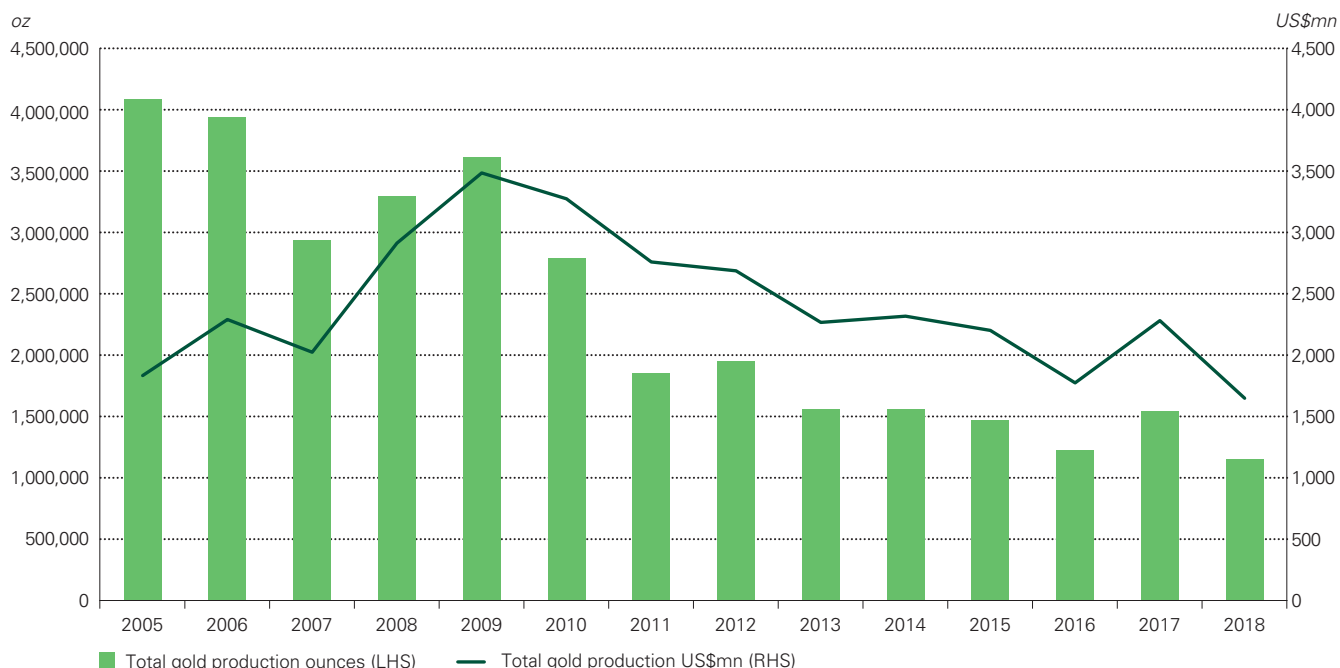
Even if the entire lifespan of each mine were included, however, it would still be the case that, given the finite life of mines, there would eventually appear to be a steep decline in production, employment and procurement as mines wind down and eventually close. This does not mean, of course, that new projects will not come online to replace these economic inputs to the extent possible.

For example, an estimate given for new mining investment coming into the Department of Cajamarca alone was US\$26 billion over the next 8–10 years (for mining of all commodities, although mostly gold and copper). Part of this investment includes the Newmont/Buenaventura Minas Conga project. This is expected to start construction soon (despite instances of local opposition) and to operate until 2031.

Contribution of sample mines at the national level

Gold production in Peru has increased rapidly since the early 1990s (Chart 7). Based on our sample mines and the data period (2005–2018) of the LCA, production volumes peaked in 2005 but production has broadly stabilized since 2009. However, because the macroeconomic effects of the post-2005 production decline (Chart 17) have been balanced by higher gold prices, the government has been spared the falling tax revenues and foreign exchange earnings that would have occurred with stable prices.

Chart 17: Gold production: Yanacocha, Cerro Corona, Lagunas Norte and Orcopampa, 2005 to 2018



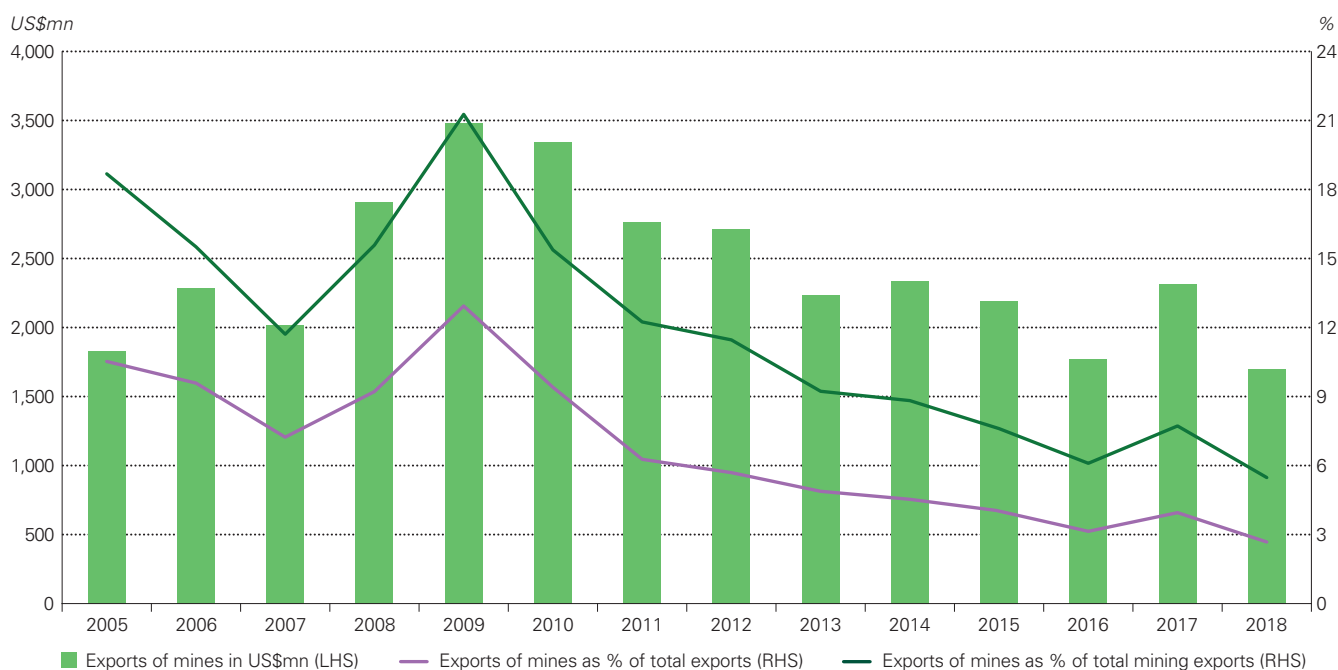
Source: Companies’ data and OPM calculations

Exports

Due to rising gold prices, exports (taken to be the total value of production in any given year) for the four mines peaked in 2009 (Chart 18), whereas production volume peaked in 2005. Exports from the four mines represented over 20% of total mining exports and 12% of total exports in Peru in this year, meaning that more than one in every 10 dollars exported came from these four mines in 2009.

Normally, a mine's construction phase is marked by very large imports due to infrastructure development and the purchase of specialist capital equipment requirements, resulting in negative trade flows. As the mine becomes operational, imports decrease significantly. Due to data limitations or construction periods which fell outside of the period under review, construction-phase data was not available for the four mines in the sample, meaning that the data period does not reflect any negative trade impacts but rather a large, positive contribution throughout (Chart 19).

Chart 18: Contribution of the four gold mines to exports, 2005 to 2018



Source: Companies' data and OPM calculations

Chart 19: Effect of the four gold mines on the trade balance, 2005 to 2018*



Source: Companies' data and OPM calculations

*This chart includes the estimated impact of capital expenditure for the Conga project but not gold production for the site

Case Study: Cerro Corona report

In 2011, Gold Fields published the report of a study conducted by international corporate responsibility consultants, Maplecroft, on the Cerro Corona mine's socio-economic impact since its approval in 2005, with a focus on the year 2010. The study reviewed the demographic of Cerro Corona's area of influence, its contributions to taxes, infrastructure development, employment, local business development and environmental stewardship, among other topics. The findings demonstrate substantial inputs to the region from Cerro Corona. While the Yanacocha/Conga, Lagunas Norte and Orcopampa mines report similar contributions, their data are shown in aggregate only in this report in order to preserve the confidentiality of each company's internal data. However, since Cerro Corona published a study which disclosed many of these figures on a stand-alone basis, it is appropriate to consider them separately in this report. Some of the key findings of the Cerro Corona report include:

- More than US\$100 mn awarded in contracts to community-based companies from inception through to the end of 2010
- 99.4% Cerro Corona employees are Peruvian nationals and approximately 34% are from local communities
- US\$24.4 mn paid in salaries for local communities from 2008 to 2010
- US\$1.4 mn invested in local health and education community projects from 2008 to 2010
- More than US\$1 mn invested to date on a rural electrification project
- US\$38.6 mn paid in Canon (tax) in 2010
- Water use only one-sixth of total licence allowance
- Tenfold increase in initial forest coverage as a result of reforestation

Prior to the development of Cerro Corona, its direct area of influence of Hualgayoc and the villages of El Tingo, Coymolache Alto and Bajo, and Pílancones had low levels of business development in services and equipment needed to supply the mine. Faced with this situation, Gold Fields instituted a supplier development programme which launched 100 community companies divided among the following offerings:

1. Heavy machinery
2. Light transport (e.g. buses, cars)
3. General services (e.g. general repairs, electricians, construction)

The supplier development programme involved not only organizing the new companies, but also training and providing support for, and close supervision of, the new entrepreneurs. Since the standards required by Gold Fields were higher than those previously met by most of the companies, Cerro Corona assembled a dedicated internal team to manage these community contracts, offering capacity building, accounting and administrative auditing, and training.

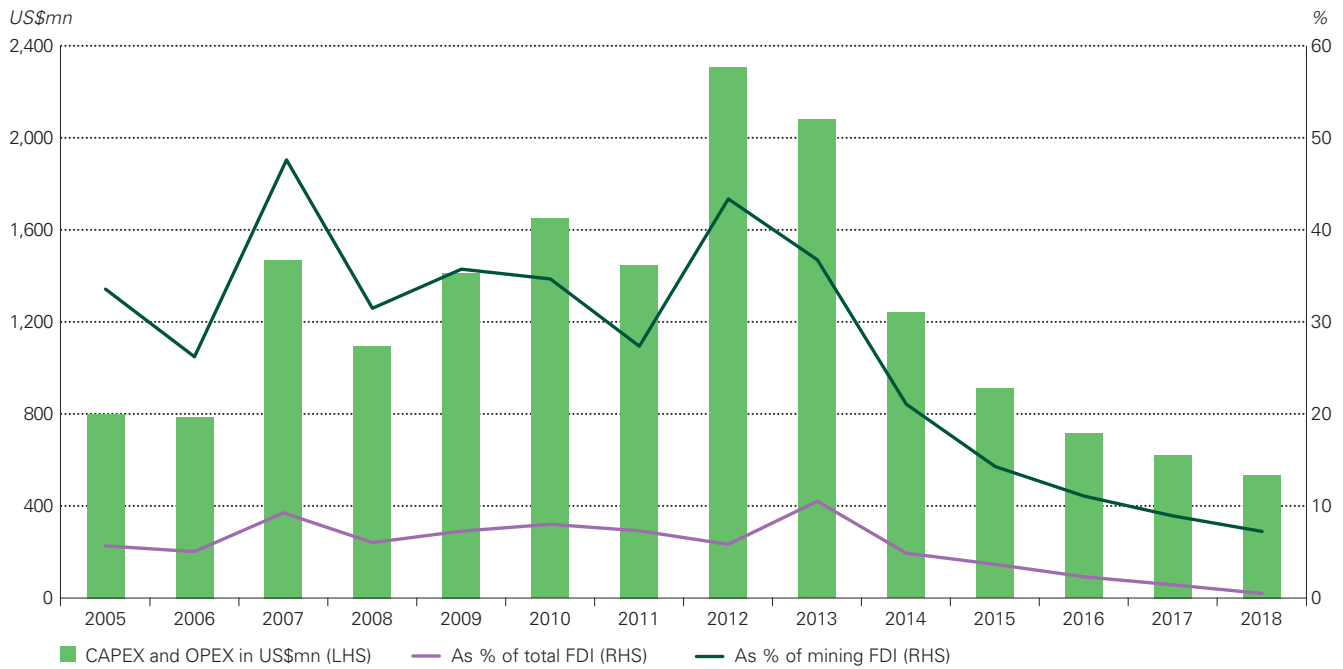
One example of the supplier development programme relates to lime. This is a key input for the mine, which buys some 3,000 tonnes per month. Lime for the mine comes from the city of Bambamarca in the indirect area of influence. Before the arrival of Cerro Corona, Bambamarca's lime providers were largely informal, artisanal producers with few owning actual lime concessions.

Through a process of formalization which involved six months of training and support for the producers, local suppliers were put in a position to compete for contracts with Cerro Corona. Since 2008, the percentage of lime rejected from Bambamarca dropped from 20% to just 3%, demonstrating the increased management capability and corresponding improved quality of lime from the city.

In addition to the development of its own suppliers, Cerro Corona has worked to improve the economy in its area of influence in non-mining-related industries. Such alternative economic activities, since they are not directly dependent upon the mine, serve the long-term economic viability and sustainable development of the area. This is much needed, as Cajamarca is marked by lower social development than the national average. One example of these non-mining economic activities is Cerro Corona's milk production project, which builds upon local knowledge of cattle breeding to improve capabilities and leverage local expertise.

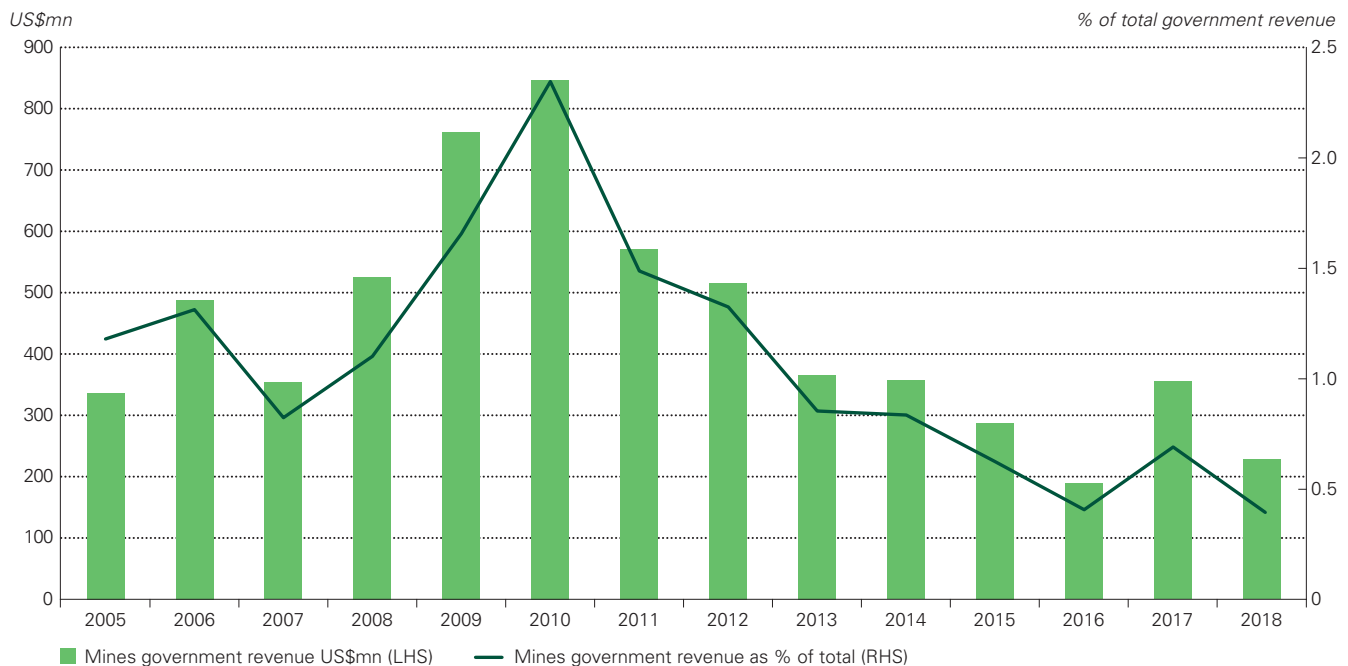
Since its development, Cerro Corona is estimated to have generated a total of US\$2.5 mn in indirect benefits, through wages and benefits paid by local companies to their employees. In 2010 alone, local employment at Cerro Corona generated some US\$2.6 mn in wages and benefits and in the same year Cerro Corona paid US\$38.6 mn in Canon Minerero taxes to the Cajamarca region.

Chart 20: Contribution of five sites (four mines and Conga project) to FDI, CAPEX and OPEX, 2005 to 2018



Source: Companies' data and OPM calculations

Chart 21: Contribution of the four gold mines to government revenues, 2005 to 2018



Source: Companies' data and OPM calculations

Investment

As a capital-intensive industry, large-scale mining necessarily requires significant ongoing investment. The contribution of the sample gold mines to Peru's FDI (Chart 20) is striking in that it represented over 30% for the overall mining sector and nearly 10% of all FDI for the country. In all its peak years (2007, 2009, 2010 and 2011), total capital and operational expenditure (CAPEX and OPEX) exceeded US\$1.2 billion for the sample mines. This level is expected to be sustained through 2014.

Government revenue

Peru's government revenues are primarily generated through corporate income tax, regional and local tax, withholding taxes and royalties. As seen in Chart 21, US\$ 847 mn in revenues was collected from the sample mines in 2010 (2.3% of total government revenues). As the mines approach closure, this government revenue will tail off, necessitating alternative sources of income, or new mines, to fill the gap.

Indirect government revenues

Indirect revenues to the government arise when households and domestic suppliers pay various indirect taxes linked to the work, goods or services they supply to the mines. In addition, these same households and domestic suppliers pay taxes directly on their gross incomes. Spending their incomes from the mines on other goods and services, and paying tax on these, households and suppliers further generate indirect government revenues from the mines. Although such indirect revenues were not modelled in this study, it is clear that additional revenues are generated over and above those measured in this section.

GDP

One primary impact of the four mines is their contribution to Peru's national income or gross domestic product (GDP), which measures the total value added of all sectors in the economy. Based on the findings of the LCA, OPM estimates that the sample mines have made a significant contribution of between US\$1.3 billion and US\$2.5 billion annually to Peru's GDP since 2005, over 1.4% of total GDP, with the exception of 2007. Peaking in 2009 at over US\$2.5 billion (as a result of high gold prices), the contribution to GDP from the mines was lower in 2007, in line with national mining production.

The overall contribution, which measures not just this direct impact but also the indirect (counting supplier effects) and induced (capturing spending by impacted households) contribution to national income by the sample mines, would be still greater. This would include an array of consequential effects of the mine, although usually only the measurable multiplier effects are taken into account. Particularly in Peru, where these mines have integrated their operations with their host economies to the extent possible, this multiplier effect is pronounced. OPM, using previous studies, suggests a multiplier of 1.9 which when applied to the 1.4% direct contribution to GDP in 2010 yields a 2.6% contribution when indirect impact is included (Chart 22).

Chart 22: GDP generated by the mines, 2005 to 2018



Source: Companies' data and OPM calculations

Contribution of sample mines at the local level

The effects of our sample mines, like those of most large-scale mining operations, include employment, capacity building, procurement from local suppliers, community contributions, infrastructure development and taxes paid. Although the direct employment from large-scale, capital-intensive mines is modest, the absolute numbers are very meaningful to local communities.

Moreover, the sample mines' expenditure with national suppliers is expected to average 88% of total procurement, or nearly US\$1.2 billion per year from 2007 to 2013. In some years, this is more than twice the total of all taxes paid by these mines. The local effects of this expenditure are just as noteworthy, with some \$165 mn going to community-based companies in 2011.

Local employment

Employment at large-scale mines varies throughout the mine's life, from exploration, construction and operation through to closure. As this overall mine life-cycle can last any time from a decade to a century, job creation even at a single mine can be a lasting factor in sustainable development. In our sample, the mines reported strikingly high levels of local employment, with nearly all employees being Peruvian nationals, most of them coming from the surrounding communities.

In 2011, the sample mines employed 4,528 workers, up by 873 from 2005. During the data collection period, this looks set to peak in 2013 at 5,227 workers (Chart 23) of which a full 98% are projected to be Peruvian nationals. Of course, given the approaching closure of several mines, the employment figures tail off near the end of the collection period.

According to Edwin Amoretti of Yanacocha's Social Responsibility team, the company's goal of having 60% of its employees originating from the department of Cajamarca has been met for the past five years. While this is a challenge, he notes, it has been achieved through local recruitment and training of young (aged 18-plus) workers, in collaboration with the municipal authorities which help to identify candidates. "The candidates chosen train for 280 hours on heavy machinery with us, but then they can use those skills in any company," said Amoretti. Out of the 80 graduates of the programme in 2010, Yanacocha hired half and is now looking to replicate the programme for other areas like environmental management and project development. Yanacocha also trains local workers outside the mine in farming, stonework, knitting and other skill sets.

Alberto Calle, who heads Human Resources for Yanacocha, highlights the company's 32-person training team. The training, in mine operations, maintenance and process plant, includes an evaluation of each new employee's training needs and then a personalized training plan to fill in identified gaps. Job openings are posted first internally and with contractors, then externally via both the company website and through the Social Responsibility team's regular community meetings. Calle relays the comment made by a female haul truck driver regarding her job at Yanacocha: "I wake up every day and still can't believe this new life isn't a dream." Yanacocha, he explains, strives to make such positive impacts on local workers, while at the same time hiring and training qualified employees. With the planned upcoming construction of Minas Conga, some 6,000 additional hires are expected.

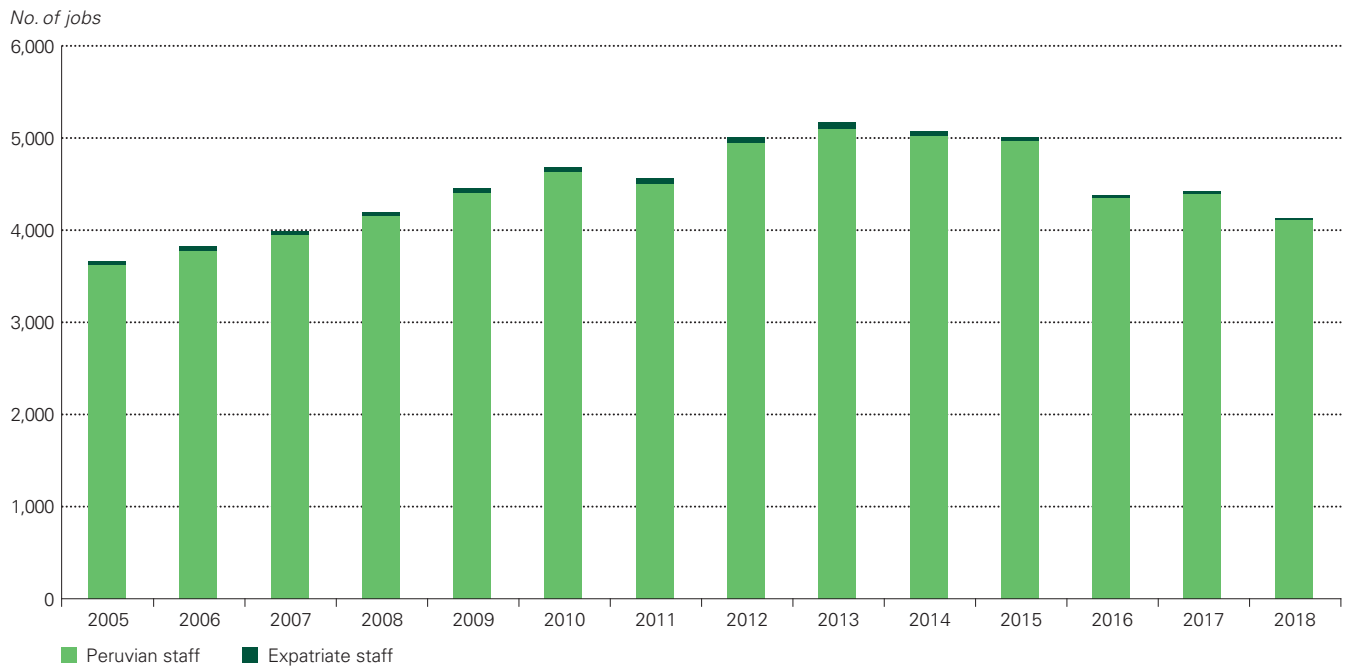
Rafael Tupayachi, Head of Cerro Corona Human Resources, describes the company's training process, involving the identification of each employee's training needs and a corresponding training plan. To fill new positions, Cerro Corona first looks to its already skilled employees, and then posts openings with its contractors, before offering the positions externally. In addition, the company has an alternative process, through an agreement with the community, to train 60 young entry-level workers each year. The trainees then apply at Cerro Corona and elsewhere (as the mine cannot absorb 60 new entry-level workers each year). "We've seen the public perception change," said Tupayachi, "from thinking that living near the mine meant a job for life to seeing that Cerro Corona provides quality training that should be used for a variety of jobs in the area."

At Buenaventura's Orcopampa, employee recruitment and training is outsourced to the global human resources provider, Manpower. While Orcopampa offers its own training programmes in safety and quality control, this is supplemented in various areas where the company does not have training resources. A recent round of recruitment brought in 100 local residents, who underwent several training courses. Manpower maintains a database of skills among local job candidates, so that when Buenaventura has job openings, the right candidates can be quickly identified. Of the Orcopampa workers, 100% are Peruvian.

Local salaries

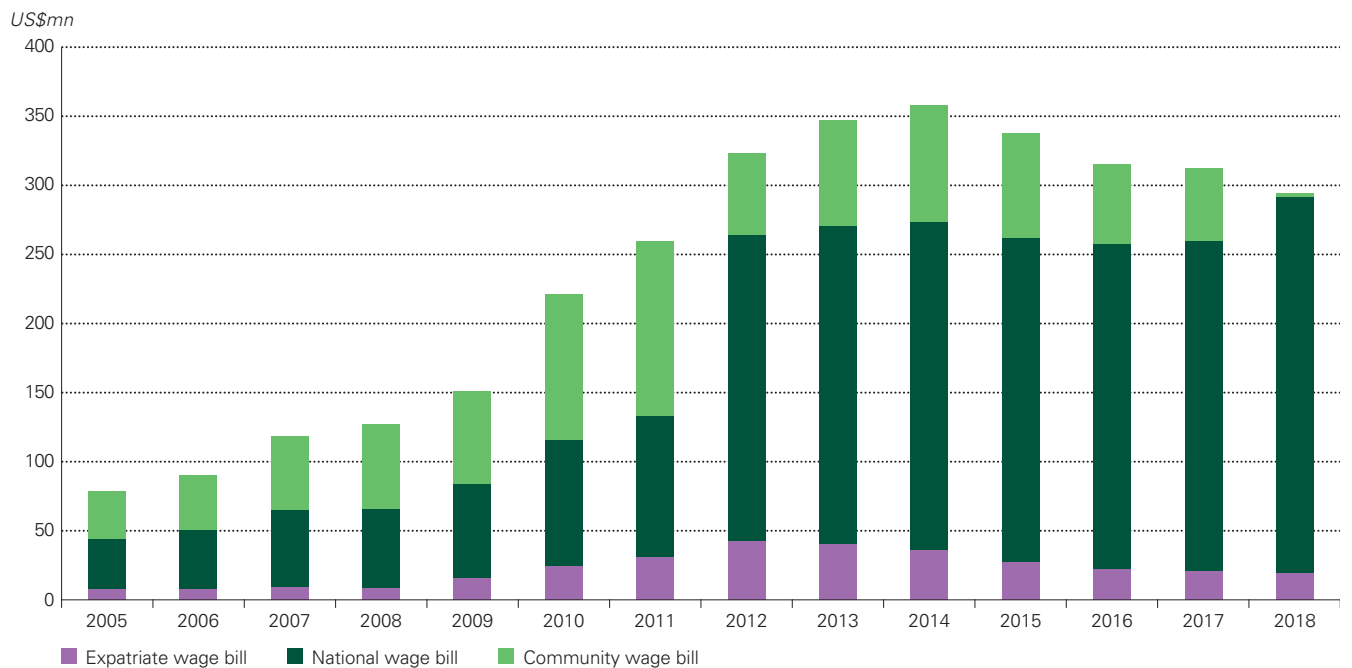
Local and national salaries tend to be lower on average than expatriate salaries, as expatriate employees are used only for highly skilled, high-value management or technical services, and there is an international market for such employees. Nevertheless, since expatriate workers represent 1–2% of the total headcount, their portion of the way bill is also low (Chart 24). However, as a general rule, a significant proportion of expatriate salaries remain in the local or national economy. Of the US\$337 mn annual average in total salaries expected to be paid by the mines from 2012 through to 2018, community salaries account for more than US\$67 mn year, a significant boost to the local and regional economies.

Chart 23: Direct employment (national and expatriate) 2005 to 2018



Source: Companies' data and OPM calculations

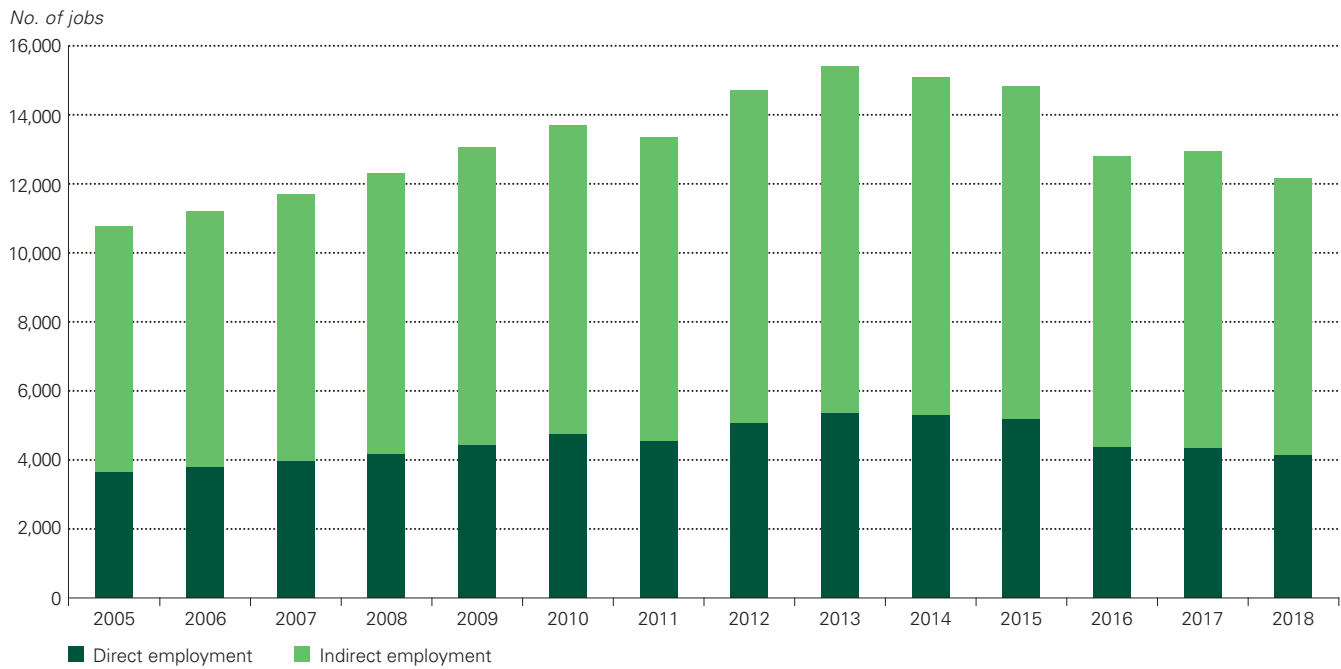
Chart 24: Estimated wage bill of the five sites (community, national, expatriate), 2005 to 2018*



Source: Companies' data and OPM calculations

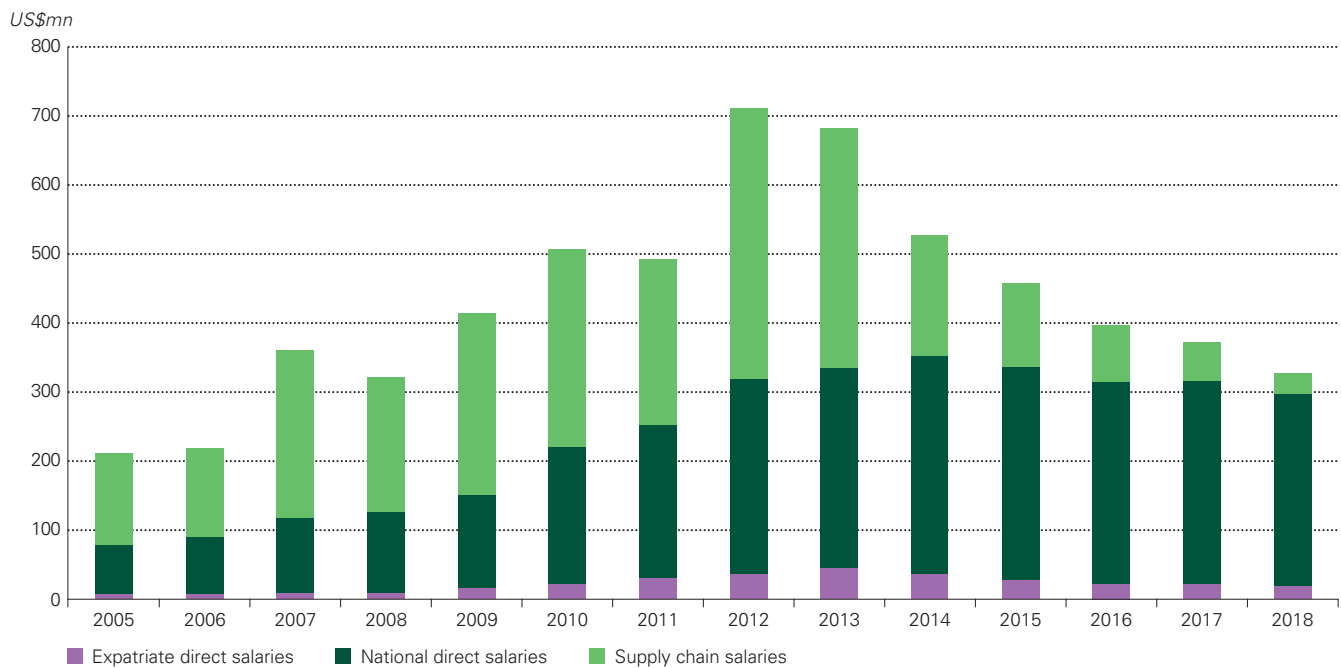
*Total estimated community salaries for 2018 not available

Chart 25: Number of full-time jobs generated by the five sites, 2005 to 2018



Source: Companies' data and OPM calculations

Chart 26: Expenditure on wages, 2005 to 2018



Source: Companies' data and OPM calculations

Employment multipliers

Despite the non-labour-intensive nature of the industry, the sample mines will provide 4,000 jobs on average per year from 2005 to 2014. Furthermore, indirect impact on job creation can be measured through economic multipliers, which, as mentioned previously, OPM estimates at 1.9 for this study, regarded as conservative by international standards. The multiplier effect is based on:

- Spending on goods and services which support employment
- Direct employees spending their salaries in the host economy
- Employees of national suppliers spending salaries in the economy
- National suppliers spending revenues from the mine on local inputs as well as paying taxes
- Profits of national suppliers and lower-tier suppliers spent on consumption rather than investment.

Based on the multiplier of 1.9, we can estimate that the indirect job creation impact of the sample mines from 2005 to 2014 was approximately 8,000 annually (Chart 25). However, other studies of similar mining regions have placed employment multipliers as high as 3.8, which at twice the multiplier used in this study would imply a significantly greater employment impact.

In terms of the indirect income generated for local and national Peruvian workers, it is estimated that of the sample mines' expenditures on suppliers, the portion going to salaries of workers in these supply chain companies averaged nearly US\$240 mn annually for these years (Chart 26).

Local opportunities: Cruz Verde

Cruz Verde began operation in 2004, providing bus transportation services to Lagunas Norte. Its owner, Rodolfo Ruiz, had the idea of forming the company after selling his 18 hectares of land and identifying opportunities around the mine.

Ruiz used his savings as well as credit to purchase the first two buses, and has since added a third. Barrick provides Cruz Verde drivers with general job training as well as driving instruction, and supports the company with community relations training through the local chamber of commerce.

"We've run into labour shortages during mine expansion periods," remarked Ruiz, explaining that he has had to recruit drivers from as far away as Cajamarca. Cruz Verde's drivers work 14 consecutive days, with seven days off, and serve a variety of routes connecting the small communities surrounding Lagunas Norte to the mine

"I wanted to be a business owner, not an employee," said Ruiz. "That's always been my plan, and now it's come to fruition."

Local opportunities: Ferreyros

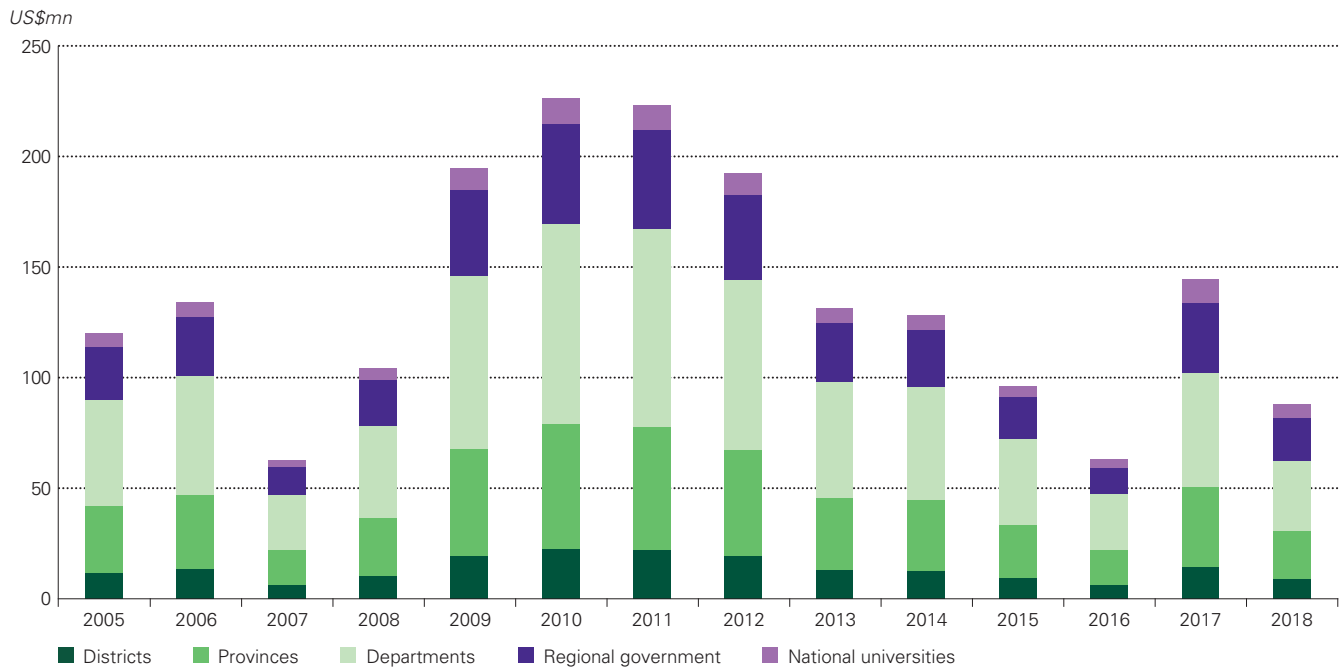


Luis Miñano of Ferreyros.
(Photo courtesy of Ferreyros)

Ferreyros of Peru has been in business for 87 years, serving as Peru's authorized dealer of Caterpillar equipment as well as that of Atlas Copco, Iveco and Kenworth. In 2007, Ferreyros began its contract with Lagunas Norte, after some 14 years working with Barrick's Pierina mine in Peru.

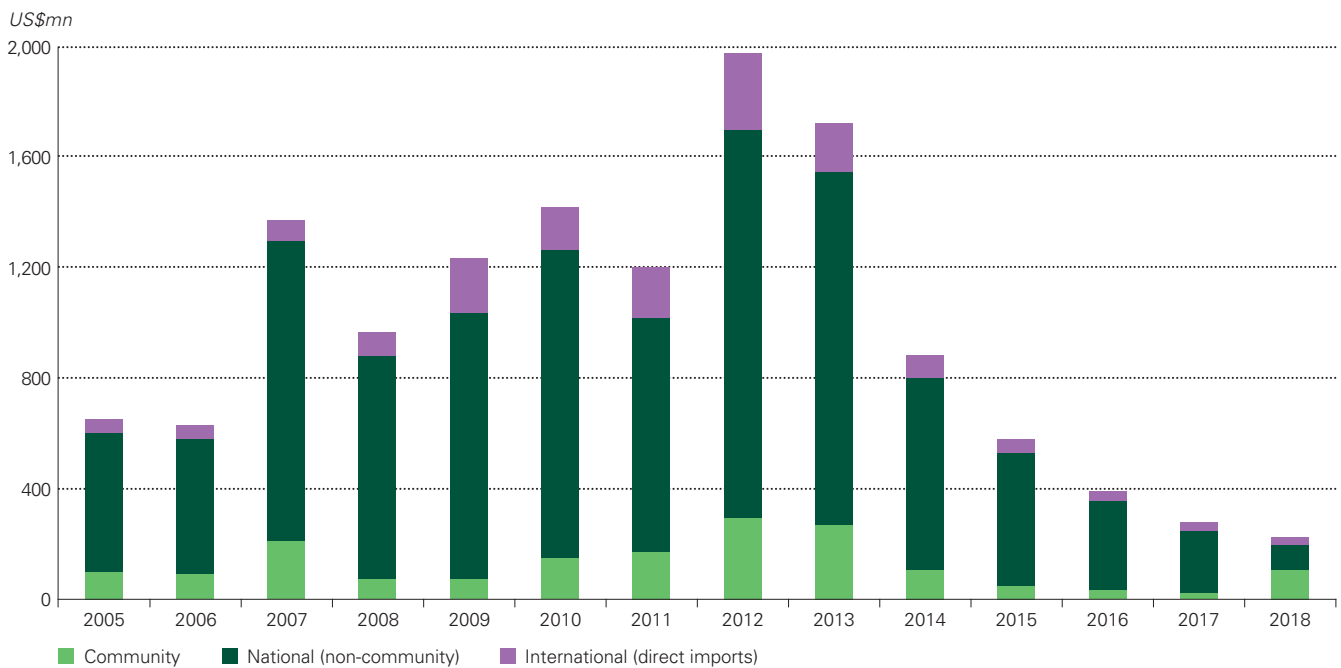
"All of our training, support and logistics come from Caterpillar," said Luis Miñano of Ferreyros, mentioning training programmes in safety and prevention, vehicle operation and environmental impacts, as well as career management. Unlike the many community suppliers in the study, Ferreyros is a major, national company supported by an international partner like Caterpillar. It is a publicly traded company on the Lima Stock Exchange and earns some US\$12 mn per year from Barrick alone in Peru. At Lagunas Norte, its workers come from Trujillo instead of the immediate surrounding communities. After the closure of Lagunas Norte, said Miñano, "we have a number of other clients and opportunities in the vicinity to continue to employ our workers."

Chart 27: Canon Minero distributions for the four mines, 2005 to 2018



Source: Companies' data and OPM calculations

Chart 28: Capital and operational expenditure by the five sites, 2005 to 2018



Source: Companies' data and OPM calculations

Local taxes: the Canon Minero

By means of the Canon Minero, some US\$180 mn was distributed in 2010 from the four mines, of which approximately US\$70 mn went to departments, US\$43 mn to provinces, US\$34 mn to regional governments, and US\$17 mn to districts (Chart 27).

According to the Ministry of Mines and Energy, the economic contribution of mining to Cajamarca in the form of Canon transfers, royalties and annual mining rights fees rose from US\$88 mn in 2009 to US\$175 mn in 2010. In 2010, the region ranked second in Peru in terms of the economic contribution of mining, surpassed only by Ancash.

Local procurement

As previously noted, the significance of the sample mines' combined supply chain expenditures is underlined by the fact that it was more than twice the total taxes paid by them in some years during the data collection period. This injection into the local economies surrounding the mine sites can be measured in a variety of ways, from indirect job creation to sustainable business development and overall capacity building at many levels.

The participating companies in our study indicated that they considered national suppliers to mean those with a Peruvian address on the purchase order. In at least some cases, however, it is not possible to ascertain how much of this expenditure actually stayed in Peru. For example, rather than having been manufactured in Peru, heavy equipment is likely to have been imported by the national supplier for resale, although much of the installation and ongoing maintenance work for this equipment will have been carried out by highly skilled Peruvians.

In the data collection period, the percentage of the sample mines' expenditures on national suppliers (including local agents of international companies) averaged 87%, and in 2010 totalled US\$1.15 billion (Chart 28) or 1.35 times the total taxes paid.

For 2011, some 41% of capital expenditure on national suppliers went to community-based companies. In the context of most extractive industries, these are high figures, and most likely reflect the maturity of local suppliers in the regions studied and the long-standing nature of mining skills in Peru.

Further, breaking down capital and operational expenditure into first, services and works; and second, equipment and materials, OPM expected to see a higher percentage spent on national suppliers for the former, since services and works do not typically include expenditure on imported equipment. However, most likely due to participating companies' definition of national suppliers as those with a Peruvian address on the purchase order, we see a reversal of this pattern.

In 2010, 94.9% of expenditure on equipment and materials and 90.1% for services and works went to national suppliers. Similar patterns emerged across the other years in the study period. Henry Paredes Linares, Head of Procurement for Yanacocha, explained that limits to the use of local content are based on several variables: "the business knowledge in community companies, the investment that Yanacocha is prepared to make in order to develop local suppliers, the level of economic development of the region, and the willingness of suppliers to work with us as a team, recognizing we are a for-profit company and not a training institute." He notes that it is harder for local firms to compete in the provision of goods, because Yanacocha's requirements are complex and usually best served by national or international providers. In services, however, they can and do compete – some 23% of these providers are from the department of Cajamarca. The company's partnership with ALAC, Paredes mentions, helps to develop and support these local companies.

Alfredo Barandiaran from the Community Relations team at Cerro Corona says that at times the mine has had up to 100 local suppliers, divided into three specialties: heavy machinery, light trucks/transportation and general services. "Many of the companies we've trained," says Barandiaran, "are now working in Buenaventura's new project, La Sanja, as well as Conga and Lumina Copper. They all started from scratch working for and receiving training from Cerro Corona. So, these are sustainable businesses." Some of these local firms have made up to US\$ 6.5 mn in revenues since Cerro Corona's first contracts with them.

Local opportunities: Santa Maria Hualgayoc



Santa Maria Hualgayoc workers at a construction project at Cerro Corona.
(Photo courtesy of Santa Maria Hualgayoc)

Oscar Galvez Gil and his partner Miguel Godoy Quiroz started their company, Santa Maria Hualgayoc, in 2006. Knowing the Cerro Corona team, they were familiar with the opportunities to serve the mine and began offering transportation and construction services. Gold Fields provided the company with training in management, safety, environmental management, and basic business start-up skills.

“Although Gold Fields has been our sole client so far,” said Galvez, “we’re looking to expand to work for both the city of Hualgayoc, as well as some of the new mining projects to be developed locally.”

The impacts of the business, according to Godoy, have been significant. “Not only can we provide a much higher standard of living for ourselves and our families, but we’re also helping to elevate the job prospects of our local workers through the training and job experience gained at Cerro Corona.”

Local opportunities: Empresa Comunal Turística de Aguas Termales



Local residents use the hot springs pool at Aguas Termales in Huancarama, near Orcopampa.
(Photo courtesy of Aguas Termales)

Cirilo Vera Sana serves as president of the Community of Huancarama, and describes with pride the community company Aguas Termales, opened in 2001. The general manager, Constantino Patiño Herencia, portrays the customer base as residents of the local districts, Orcopampa and Chilcaymarca, as well as the nearby districts of Andagua and Chachas. “On a daily basis we have between 50 and 100 customers,” said Patiño, “but on Sundays and holidays we see up to 250 people.”

The appeal of the hot springs is their reputed healing properties, as well as the scenic natural surroundings of the facility, “and just the chance to come for a soak and to feel clean,” claims Patiño. The company revenues come from admission fees to the facility, sales from the company store and transportation services from Orcopampa to Huancarama.

Local opportunities: El Aliso



El Aliso workers installing liner materials at Yanacocha.
(Photo courtesy of El Aliso)

Narciso Llanos Tafur and his six partners, all from Cajamarca, had the idea of starting a company when they saw the opportunities to work with mining operations around Cajamarca, especially Yanacocha. The company launched in July 2004 and within four months was working for Yanacocha, providing environmental services and products. For the first few years, the business focused on selling and installing environmental erosion control barriers and irrigation channel liners, and then moved into the installation of geosynthetic pipes and other water management projects. Aside from projects for the mine, El Aliso has also worked with Yanacocha's community development team on projects including the construction of a local high school and building a 9 km road.

"In 2010 the business began to expand further as we won two large contracts with Yanacocha," said Llanos, "one in the project development group and the other in operations." These projects required El Aliso to invest in installation machinery, a significant investment that will serve the business well into the future as the company pursues ongoing business with Yanacocha and expands to other mines in the vicinity.

According to Llanos, becoming a recognized vendor in the mining industry has been highly rewarding for the economic and educational opportunities of the partners, workers and their families. "We've worked hard," said Llanos, "and Yanacocha has also helped us with management training."

Local opportunities: Lyanfer



Lyanfer partners with their inventory of safety vests.
(Photo courtesy of Lyanfer)

Lucia Roja and her business partners, eight women between the ages of 30 and 59, started their company Lyanfer in 2006, based in Quiruvilca. With four sewing machines donated by Barrick, they began making safety vests and other apparel for Lagunas Norte. At times, Lyanfer received a large order of up to 200 pieces with few days to deliver. "With orders like this, we stay in the workshop day and night to deliver on time," says Roja. Their business goals involve growing beyond Lagunas Norte to other nearby projects.

"Starting the business wasn't hard," states Roja, "because Barrick provided training in starting and running a small business. We hadn't worked outside the home before – all of us have families – so the training in finance, accounting and technology was very helpful." Describing the impact of the business on her life, Roja said that it is immeasurable – to be able to earn her own pay and provide a university education for her children. Having a two-earner household, she claims, is a major, positive change

Supplier development

The companies in the study all have programmes to foster the development of local suppliers to the sample mines. Through these, which include supplier recruitment, development, training and support at various levels, the companies are able to boost the sustainable development effects of their operations.

OPM makes the assumption that the economic benefits of supplier training programmes are at least equivalent to their cost. Given this, we can estimate that from 2005 to 2010, training benefits per supplier employee for capital expenditure averaged more than US\$1,250 per year and US\$2,000 for operational expenditure.

Some of the greatest benefits in local supplier development come from the supervision and quality control exercised by the mines over their suppliers, and then by these suppliers over their supply chains. Procurement managers at the mines indicated that supplier-training costs were priced in to their contracts, on which basis they are still competitive with international suppliers. The local labour and logistical costs offset the costs of training, management and quality control, OPM assumes. Asked how high local procurement as a percentage could reasonably go, most mine representatives claimed that they were near this level already, which is not surprising given the unusually high proportions of both local employment and procurement in the study.

ALAC

The Asociación Los Andes de Cajamarca (ALAC) began as Yanacocha's community outreach effort, but has since become an independent organization with a seven-member board of directors. Yanacocha provides seed funding for ALAC, with the organization raising additional funds from sources such as the International Finance Corporation (IFC), the Clinton Foundation, the USAID and others. With sustainable development as its primary mission, the organization works to build the capacity of numerous small businesses, many, but not all of which are Yanacocha suppliers. ALAC provides technical assistance and quality control, and identifies other areas where local firms need assistance.

"Our goal is that sustainable development is a responsibility shared by all," said Violeta Vigo, ALAC's executive director, "including community residents, local companies, and government. It can't just be Yanacocha." The organization currently works with some 200 suppliers, helping to building their capabilities so that they can compete with large companies for contracts. As an example of ALAC's success, Vigo cites the fact that in 2003, 70% of Yanacocha's uniforms were made in Lima, while today that same proportion comes from Cajamarca, all from five local firms that ALAC helped to create. Aside from mining contracts, ALAC's companies run businesses in both dairy and trout farming, among other areas. With the upcoming launch of the Minas Conga mine, ALAC will expand to work with suppliers and other companies in the new mine's surrounding communities.

Table 8: Companies and suppliers interviewed for the study

Supplier	Location	Clients	Products/Services	Workforce	Revenues
El Aliso	Cajamarca	Yanacocha	Environmental and construction services	2005-2006: up to 100 2009: 20 2010: 70	Est. US\$1mn in 2011
PUNRE	Cajamarca	Yanacocha and its suppliers	Rental of heavy machinery	200, set to increase by 50% when construction of Minas Conga begins	Not reported
Peruvian Services	Cajamarca	Cerro Corona	Operation and maintenance of water plant	21	PEN* 1mn
Santa Maria Hualgayoc	Hualgayoc	Cerro Corona	Transportation and construction	6	PEN* 2mn
Aguas Termales	Huancarama	Community residents and tourists	Hot springs, baths, swimming pool	Not reported	US\$60k
Lyanfer	Quiruvilca	Lagunas Norte	Apparel (safety gear, polo and t-shirts, caps)	5	PEN* 70k
Ferreyros	Lima	Lagunas Norte	Authorised dealer in Peru of Caterpillar equipment	2,900	US\$12mn from Barrick
Servicios Multiples El Sauco	El Sauco	Lagunas Norte	Cleaning services for company offices	37	PEN* 113k
Cruz Verde	Quesquenda	Lagunas Norte	Bus transportation	12	Not reported
Transportes Jhordi	Trujillo	Lagunas Norte	Bus transportation	17	US\$70k from Barrick

*Peruvian Nuevo Sol

Conclusion

Mining has played a key role in the development of Peru's national and local economies. At a national level, the mining industry accounted for 61% (or US\$21.7 billion) of Peru's total export revenues in 2010. Gold mining's contribution continues to be significant, accounting for US\$7.7 billion in exports (for 2010), with 41% of this amount coming from the four currently operating sample mines in our study.

The benefits of the mining industry to Peru's economy are far-reaching, well beyond the number of actual jobs being created or sustained. Because employees in the formal, large-scale mining sector are marked out by comparatively high skill sets (and therefore incomes), the positive effects for the communities in which they live are substantial.

Looking exclusively at the World Gold Council member company mines represented in our study, the picture is impressive. These four mines represented over 12% of total mining exports and over 6% of total exports in Peru in 2011.

Diverse local impacts

But, as we have shown in this report, the local impacts of the sample mines are equally significant. We recognize that there are some communities where there are disputes and controversies around mining. These often reflect fears about water and ingrained distrust of both companies and governments. Nonetheless, for most communities, spanning employment, procurement from local suppliers, community contributions and taxes paid, the benefits to local communities continue to be both diverse and valuable.

The four mines in our sample are directly benefiting the local job market, with Peruvian nationals making up over 90% of their workforces in 2011. Of the US\$337 mn that is expected to be paid in salaries between 2012 and 2018, salaries paid to residents of local communities account for more than US\$67 mn per year. Based on the multiplier used for this study, we estimate that the indirect job creation impact of the sample mines from 2005 to 2018 will have been approximately 8,700 annually, exceeding 10,000 indirect jobs in both 2012 and 2014.

In terms of local procurement, the sample mines' expenditure with national suppliers averages 88% of their total procurement, or nearly US\$1.2 billion per year during the peak years of 2007–13. In some years, this exceeds twice the total of all taxes paid by these mines. The local effects of this expenditure are just as noteworthy, with some US\$165 mn going to community-based firms in 2011.

However noteworthy, these indicators do not capture the qualitative impacts of the sample mines on the individuals and families of the regions studied. The various interviews and case studies included in this report highlight some human impact stories about opportunities created by gold mining in Peru, with entire communities being given the opportunity to raise their standard of living through secure employment, training schemes and higher incomes.

Appendix

Data collection template

Data period	Notes and explanations	Units
Accounting period	Start date to expected closure date.	
Capital expenditure period	Years in which there has been, or is forecast to be, 'actual' capital expenditure (i.e. not 'commitments'). Capital expenditure includes ancillary facilities.	
Operational expenditure years	Years in which there has been, or is forecast to be, 'actual' operational expenditure (i.e. not 'commitments'). Operational expenditure includes processing, refining.	
Closure	Years in which there is anticipated to be expenditure on mine closure.	

Revenues		
Production volumes	Quantity of units sold for each material product (actual and forecast).	Gold (ounces) Copper (metric tonnes)
Sub-total sales by product	Sales volume multiplied by price per unit.	Gold (US\$ per ounce) Copper (US\$ per metric tonne)
Total revenues	Aggregate gross revenues across all material products.	US\$m

Royalties		
Total royalty payments	US\$ value of royalty payments per year (paid on gross revenues).	US\$m

Capital expenditure		
Direct labour (payroll)		
Head count	Physical number of staff on payroll in year, including FTE agency/contract staff.	#
National head count	Proportion of payroll staff who are national citizens.	%
Wage bill	Total annual wages bill for staff on payroll (base salary plus all social taxes, benefits/bonuses and including training).	US\$m
Training	Total annual training costs for direct employees and FTE agency/contract staff.	US\$m
National labour	% of wage bill paid to national citizens (professional estimate).	% US\$
Community labour	% of total annual wage bill paid to national citizens resident in project-affected area (a sub-set of National Local Content %) (professional estimate).	% US\$
Services and works		
Contracted services and works	Total annual actual expenditure on contracted/sub-contracted services and works, including EPC/EPCm contracts.	US\$m
National content	% of expenditure on contracted/sub-contracted services of domestic origin (use method most relevant to operation or % of CAPEX to nationally-registered service contractors) (professional estimate).	% US\$
Community content	% of expenditure on contracted/sub-contracted services located in, or sourcing labour from, project-affected area (a sub-set of National Local Content %) (professional estimate).	% US\$
Equipment and materials		
Equipment and materials	Total annual actual expenditure on suppliers of goods (equipment and materials), excluding EPC/EPCm contracts.	US\$m
National content	% of expenditure on goods of domestic origin (use method most relevant to operation or % of CAPEX to nationally-registered suppliers) (professional estimate).	% US\$
Total capital costs		

Operational expenditure (by labour and goods)	Notes and explanations	Units
Direct labour (payroll)		
Head count	Physical number of staff on payroll in year, including FTE agency/contract staff.	#
National head count	Proportion of payroll staff who are national citizens.	%
Wage bill	Total annual wages bill for staff on payroll (base salary plus all social taxes, benefits/bonuses and including training).	US\$m
Training	Total annual training costs for direct employees and FTE agency/contract staff.	US\$m
National labour	% of wage bill paid to national citizens (professional estimate).	%
Community labour	% of total annual wage bill paid to national citizens resident in project-affected area (a sub-set of National Local Content %) (professional estimate).	% US\$
Services		
Contracted services and works	Total annual actual expenditure on contracted/sub-contracted services and works, including procurement of goods where these form part of major management services or operations and maintenance contracts.	US\$m
National content	% of expenditure on contracted/sub-contracted services of domestic origin (use method most relevant to operation or % of CAPEX to nationally-registered service contractors) (professional estimate).	% US\$
Community content	% of expenditure on contracted/sub-contracted services located in, or sourcing labour from, project-affected area (a sub-set of National Local Content %) (professional estimate).	% US\$
Equipment and materials		
Equipment and materials	Total annual actual expenditure on suppliers of goods (equipment and materials), excluding procurement of goods where these form part of major management services or operations and maintenance contracts.	US\$m
National content	% of expenditure on goods of domestic origin (use method most relevant to operation or % of CAPEX to nationally-registered suppliers) (professional estimate).	%
Total operational costs		
Community contributions		
Total community contributions	Inclusive of compensation payments, social investment programmes, SME linkages programmes.	US\$
Data period		Units
Corporation tax		US\$m
Import duties		US\$m
Local/regional taxes		US\$m
Dividend tax		US\$m
VAT		US\$m
Withholding taxes	For example dividend, interest, technical assistance.	US\$m
Special taxes	For example special mineral taxes.	US\$m
Total taxes		
Mine closure		
Mine closure costs	Estimate of mine closure costs.	US\$m

References

- Barrick (2009) *Lagunas Norte Mine Responsibility Report*, Autumn
- Buenaventura (2009) *Memoria Anual 2009*, Compañía de Minas Buenaventura
- CAD (2006) *Aporte de los Sectores Económicos a la Recaudación*, Transparencia Fiscal, April
- Central Intelligence Agency (CIA) (2012) *World Factbook*, January
- Central Reserve Bank of Peru (2012) *Annual Historical Tables*, February
- Dammert, A. and F. Molinelli (2007) *Panorama de la Minería en el Perú*, Osinergmin, September
- Dell, M. (2009) *The Persistent Effects of Peru's Mining Mita*, Department of Economics, Massachusetts Institute of Technology, May
- Ernst and Young (2010) *Peru's mining and metals investment guide 2010/2011*
- De la Flor, Pablo (2012) Former Vice-President of Corporate Affairs, *Compania Minera Antamina SA*. Interview 24 February
- Glave (2007) *Mercado de tierras y desarrollo sostenible: Lecciones aprendidas y oportunidades para los Andes peruanos, Informe Final*, Grupo de Análisis para el Desarrollo (GRADE), Lima, August
- Gold Fields (2009) *Cerro Corona Mine Technical Short Form Report*
- Gurmendi, A. (2009) *2006 Minerals Yearbook: Peru*, US Department of the Interior and US Geological Survey (USGS), August
- Gurmendi, A. (2010) *2008 Minerals Yearbook: Peru, Advance Release*, US Department of the Interior and US Geological Survey (USGS), June
- Herrera, P. and P. Francke (2007) *Análisis de la eficiencia del gasto municipal y de sus determinantes*, Pontificia Universidad Católica del Perú, Lima, July
- Hudson, R.A., ed. *Peru: A Country Study*. Washington: GPO for the Library of Congress, 1992, at <http://countrystudies.us/peru/>
- International Council on Mining and Metals (ICMM) (2006) *The challenge of mineral wealth: using resources endowments to foster sustainable development, Synthesis of four Country Case Studies*, April
- ICMM (2007a) *The challenge of mineral wealth: using resources endowments to foster sustainable development, Peru Country Case Study*, July
- ICMM (2007b) *The challenge of mineral wealth: using resources endowments to foster sustainable development, Peru: From boom to broad-based development?*, September 2008
- ICMM (2010) *Mining: Partnerships for Development, Using resource endowments to foster sustainable development, A Toolkit to analyse the social and economic contribution of the mining sector*
- International Finance Corporation (IFC) and World Bank (2010) *Doing Business in 2011: Peru*, at <http://espanol.doingbusiness.org/~/media/fpdkm/doing%20business/documents/profiles/country/db11/per.pdf>, accessed 15 November, 2010
- Instituto de Ingenieros de Minas del Perú IIMP (2010) *Minería Peruana: Contribución al Desarrollo Económico y Social*, Ministry of Energy and Mines, Lima, January
- International Monetary Fund (IMF) (2010), *Peru: Staff Report for the 2010 Article IV Consultation*, March 2010
- IMF (2011) *World Economic Outlook Database*, September
- Instituto Nacional de Estadística e Informática (INEI) *Economic Indicators*, at <http://www.bcrp.gob.pe/estadisticas/cuadros-anuales-historicos.html> (accessed 25 February 2012)
- Iturrios Padilla, Jose (2012) Head of Poverty Alleviation Project, *Chemonics International*. Interview 12 March
- Larios, J., B. Alvarado and E. Conterno (2004) *Descentralización Fiscal*
- Maddison, A. (2011) *Statistics on World Population, GDP and Per Capita GDP, 1-2008 AD, 2010*, at <http://www.ggdc.net/MADDISON/oriindex.htm> (accessed 25 February 2012)
- Mineweb (2012) "Newmont CEO confident \$4.8bn Peruvian gold mine will go ahead", 28 February
- Ministry of Energy and Mines, Peru (2010) *Annual Mining Report*
- Ministry of Labour and Employment Promotion, Peru (2010) *Statistical Annual*
- Otto, J. (2002) *Position of the Peruvian Taxation System as Compared to Mining Taxation Systems in Other Countries*, Ministry of Economy and Finance, March
- Oxfam (2009) *Conflictos Mineros en el Perú: Condición Crítica*, Oxfam America, March
- Oxford Policy Management (OPM), *Earth Systems Lao, National Economic Research Institute and National University of Laos (2010) Lao PDR Country Case Study for the International Council on Mining and Metals (ICMM), Draft Report*, November
- OPM (2011) *Desk Study on the Economic and Social Impacts of the Mirador Copper Project in Ecuador, Final Report*, January
- OPM (2011) *Study on the Economic Contribution of Large Scale Gold Mining in Peru (unpublished)*, February
- Revenue Watch Institute (RWI) (2010) *Mejorando los Esquemas de Contenido Local en el Perú, Lecciones y recomendaciones, Draft Report for Discussion*, RWI, November
- Sociedad Nacional de Minería Petróleo y Energía (SNMPE) (2008) *Impacto Económico de la Actividad Minera en el Perú*, Macroconsult, SNMPE, July
- SNMPE (2011) *La tributación Minera en el Perú: Contribución, Carga tributaria y Fundamentos Conceptuales*, Instituto Peruano de Economía, SNMPE, January
- United Nations Development Programme (UNDP) (2010) *Multidimensional Poverty Index*
- Velasco, J. (2010) *The importance of mining in Peru*, IIMP, Ministry of Energy and Mines
- Waszkis, H. (1993) *Mining in the Americas: stories and history*

Glossary

CAPEX

Capital expenditure

EIA

Environmental Impact Assessment

EITI

Extractive Industries Transparency Initiative

FDI

Foreign direct investment

GDP

Gross domestic product

HDI

United Nations Human Development Index

LCA

Life-cycle assessment

OPEX

Operational expenditure

OPM

Oxford Policy Management

PMSP

Mining Programme in Solidarity with the People
(or Voluntary Contributions)

WGC

World Gold Council



The printer is accredited to
ISO14001 environmental standard.

