

INSTITUTO DE INGENIEROS DE MINAS DEL PERÚ



Suresh Vadnagra Minera Las Bambas

MINING: COMPETITIVENESS AND SUSTAINABILITY 18 - 22 SEPTEMBER 2017

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MINING: COMPETITIVENESS AND SUSTAINABILITY

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About MMG Limited

- Global base metals mining company with a focus on copper and zinc.
- Mining operations in Australia, Asia, Africa and the Americas.
- Headquartered in Melbourne, Australia.
- Australian management culture. Experienced international team.
- Listed on the Hong Kong Stock Exchange and the Australian Securities Exchange.
- Major shareholder: China Minmetals Corporation, a Fortune 500 company.
- Member of the ICMM; aligns its policies and standards with the ICMM's 10 Sustainable Development Principles.



MMG



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About the Joint Venture

- MMG led the joint venture that acquired Las Bambas on 31 July 2014.
- The joint venture's structure is: MMG (62.5%), GXIIC (22.5%) and CITIC Metal (15%).
- The joint venture operates Las Bambas, adhering to MMG's standards, processes and systems.
- Board of directors of the joint venture: There is a maximum of six board members. MMG is in charge of appointing the chairperson.





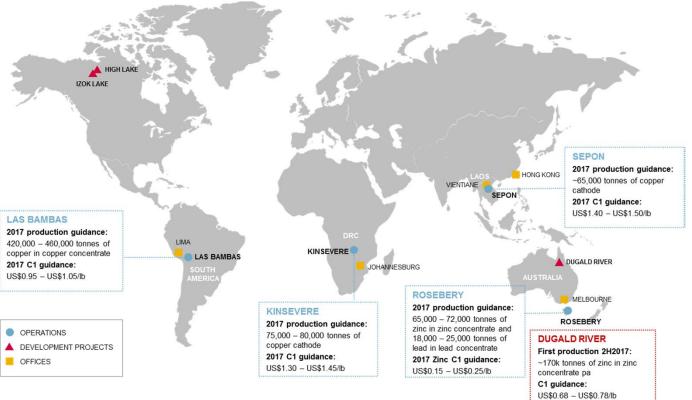
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We have a globally diversified portfolio of base metal operations and development projects.







MMG in Peru: Las Bambas



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Platform for MMG's growth

Our growth strategy is focused on:

- the identification of opportunities to gain potential from our existing assets;
- the pursuit of organic growth opportunities based on our projects and exploration;
- the pursuit of external growth through acquisitions with a value approach.
- Metals: Main objective: Copper and Zinc.
- Scale: a significant size.
- **Status:** production asset or project in an advance construction stage.
- **Geography:** a stable country that welcomes mining investment, safe for our employees.





Peru: Platform for MMG's growth

What MMG saw in Peru and Las Bambas:

- High geological potential
- Qualified personnel
- Stable rules of the game (EIS, permits and taxes)
- Political stability
- Monetary stability
- Security

The acquisition of Las Bambas represented a great step for MMG. This is our first experience in Latin America and Peru becomes a strategic country for our future expansions in the region.





Las Bambas: A glance at the operation

- It is located in Cotabambas, Apurímac region, Peru.
- It has three main deposits: Ferrobamba, Chalcobamba and Sulfobamba.
- It produces clean copper concentrate with gold, silver and molybdenum credits.
- It has ore reserves of 7.7 million tonnes of copper and mineral resources of 12.9 million tonnes of copper.*
- The life of mine exceeds 18 years.
- Production of copper in concentrate reached 330,000 tonnes in 2016.
- At the operation stage, we have more than 8,000 employees and contractors. All of our unskilled labour is hired locally.
- Contractual royalties are 3% of sales and we pay a 32% income tax.
- It is expected to produce 2 million tonnes of copper in the first five years of operation.



*Mineral Resources and Ore Reserves as at 30 June 2016.

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Las Bambas has invested in improving the roads

Investment: US \$200 million (fully financed by Las Bambas)

This action required reaching agreements with 33 communities and land holders.

Completed in 2011



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Application of micro-paving on the road to mitigate environmental impacts

Investment: US \$30 million (fully financed by Las Bambas)

Application of micro-paving in all the towns, totalling 83km

2016-2017

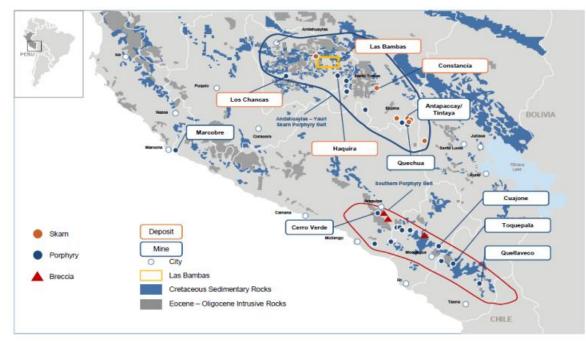


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Geological potential



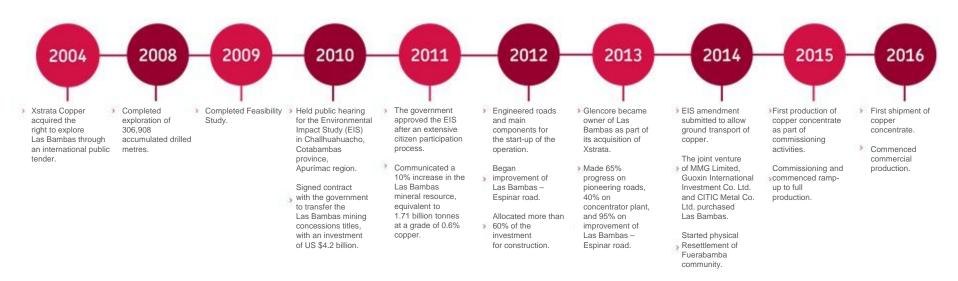
- The skarn-porphyry deposits, such as those of Las Bambas, are located within the Eocene-Oligocene Strip of the Andahuaylas-Yauri Belt.
- This belt hosts several important projects, such as Haquira, Quechua, Constancia and Antapaccay.

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Las Bambas Milestones

Twelve years from the acquisition of mining rights to the commencement of commercial production.





All agents are responsible for development: the MAC Model



3 principles:

Multi-agent: gathers the largest number of agents in a region.

Leveraged: each agent contributes resources (time, work, capital, land, others).

Co-Responsible: each agent is clear about his/her role in the initiative and performs it in a responsible manner.

Social Management Principles

- Inclusion and dialogue with stakeholders
- Promotion of government participation
- Measurable and demonstrable social investment.

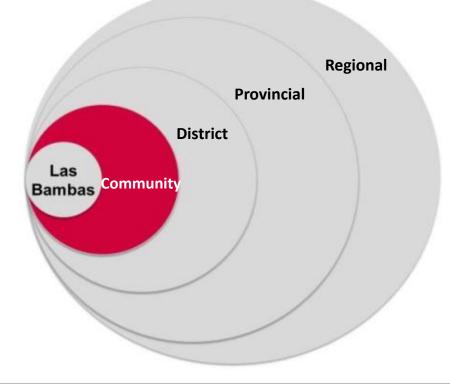


Social Outreach Regional **Provincial** District Las Community Bambas

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Social Outreach



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Community Outreach: Resettlement Process

| Defining the scope and methodology of displacement 2005-2008 | Resettlement plan and commitments 2009-2010 | Compliance with agreements and transfer process 2011-2015 | Livelihood Restoration Program 2014-2018 | |
|---|---|--|---|--|
|---|---|--|---|--|

- The resettlement process involved 514 families (approximately 1,600 people).
- The in-kind compensation included building houses in Nueva Fuerabamba, in addition to public infrastructure such as schools, a health centre and other community premises.
- Family life plans: designed to support the generation of income with adequate healthcare and education for the Fuerabamba community.



Fuerabamba: Before and After





Fuerabamba: Before and After





Fuerabamba: Before and After



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Nueva Fuerabamba





Nueva Fuerabamba: educational infrastructure





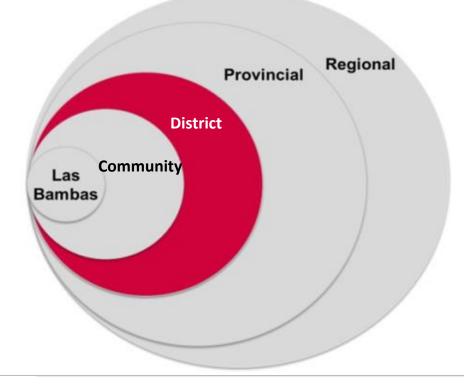
Nueva Fuerabamba: community infrastructure



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District Outreach: Social Development

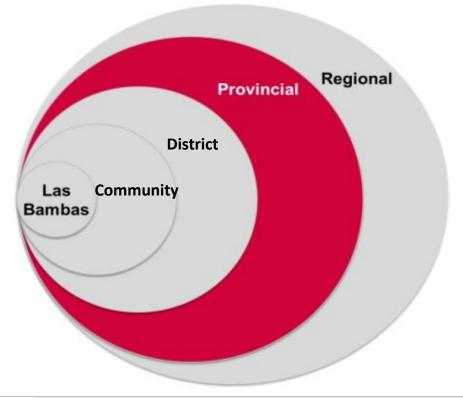
Direct investment of **more than US \$ 350 million** prior to commencing operations, in coordination with the communities and the government:

- Improvement and construction of roads, schools, community premises, places of worship, health centres, day cares, and promotion of start-ups, among others.
- Training for more than 2,000 local residents in computer sciences, carpentry, welding, electricity and vehicle maintenance and operation, and hospitality, among others.
- Environment: 1.4 million trees planted in more than 880 ha.
- Sponsorship and promotion of cultural events.





Social Outreach





Provincial Outreach: Cotabambas and Grau

LAS BAMBAS SOCIAL FUND (FOSBAM)

- The government allocated **US \$64.5 million** to it once the International Bidding Process called by ProInversión was awarded.
- Managed by a Board of Directors: three district mayors, two provincial mayors and two representatives of Las Bambas.
- Investments in sanitation, education, transportation, infrastructure, and agricultural improvements, among others.



Education



Agriculture



Sanitation



Electrification





Regional

Social Outreach Provincial District Community Las Bambas

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Regional Outreach: Internal Loan Method to Promote Works

- Funding of social projects for **US \$160 million** allocated by the national government to the Apurímac region
- Support provided by Las Bambas to help implement this method and prepare the necessary technical studies.
- Investments in sanitation, education, transportation, irrigation, infrastructure, and environment, among others.





Mining has brought social development to the Apurímac Region

| Indicators | | 2011 | 2015 |
|---|--------------------------|------|------|
| Extreme Poverty | 30% | 24% | 8% |
| Malnutrition in children under 5 years of age | 44% ^{1/} | 39% | 22% |
| Reading skills of second grade students | 8% | 12% | 36% |
| Mathematic skills of second grade students | 7% | 5% | 18% |

1/ Datum for 2008.

Source: National Institute of Statistics and Information (INEI) and Ministry of Education (Minedu)

Since the commencement of operations, Las Bambas has generated more than US \$100 million in royalties.

Coordinated work among the institutions, the government, the communities and the private sector is required to expedite development.





Challenges faced by Mining Investment in Peru

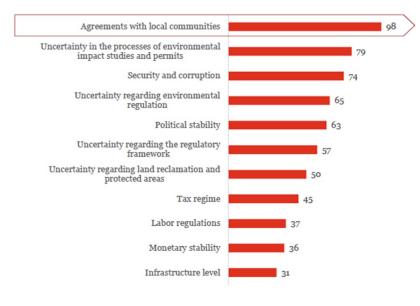
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What are the main challenges for the growth and development of the mining industry in Peru?



| Strategy to manage and reduce social conflicts | |
|---|----|
| Clarity and speed in the processes of environmental impact studies and permits | |
| Communication strategy in the sector, communication of social programs | 30 |
| Improve the level of infrastructure | 22 |
| Review and arrange the mining legislation | |
| Security and corruption | |
| Environmental regulation | 11 |
| Labor regulation | 9 |
| Review the tax regime and incentives | |
| Develop an entity to pre-qualify and approve suppliers and contractors in the sector | |
| Other | 1 |

Source: PwC Mining Survey 2016





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