

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.





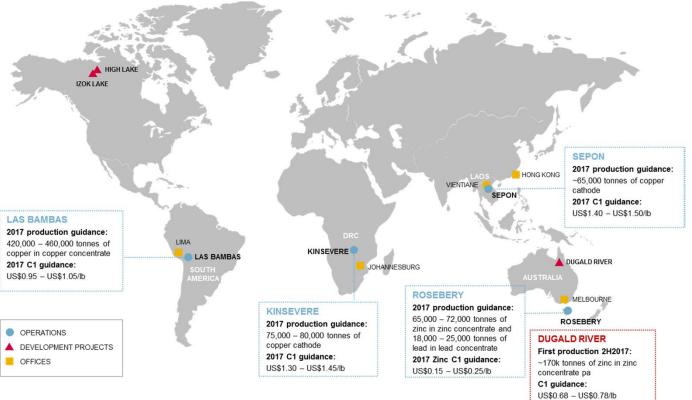
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We have a globally diversified portfolio of base metal operations and development projects.







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

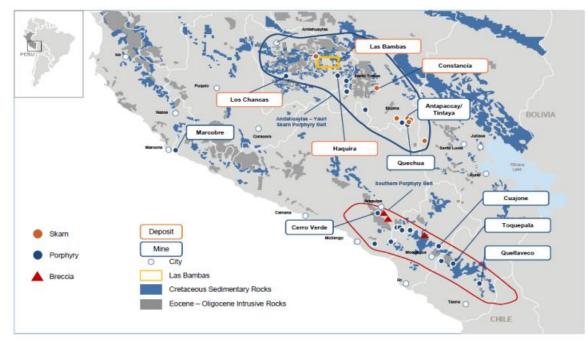


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Geological potential



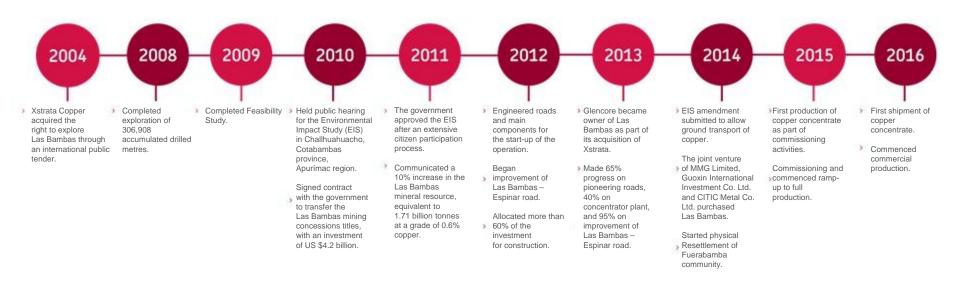
- The skarn-porphyry deposits, such as those of Las Bambas, are located within the Eocene-Oligocene Strip of the Andahuaylas-Yauri Belt.
- This belt hosts several important projects, such as Haquira, Quechua, Constancia and Antapaccay.

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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.

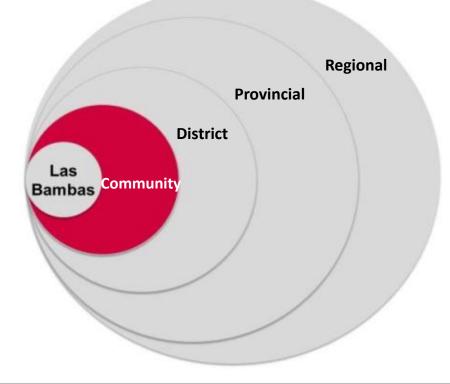


Social Outreach Regional **Provincial** District Las Community Bambas

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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	
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- 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





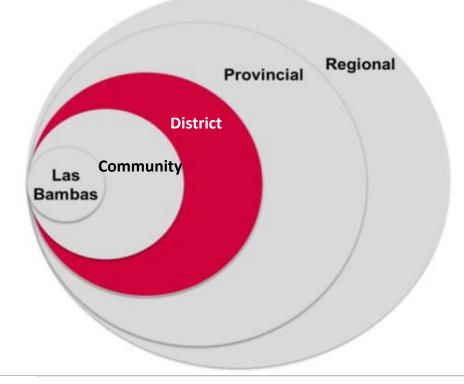
Nueva Fuerabamba: community infrastructure



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Social Outreach



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District Outreach: Social Development

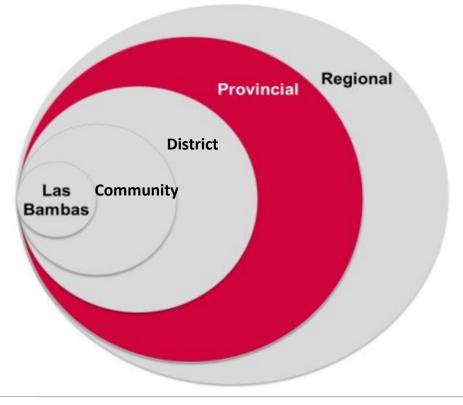
Direct investment of **more than US \$ 350 million** prior to commencing operations, in coordination with the communities and the government:

- 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

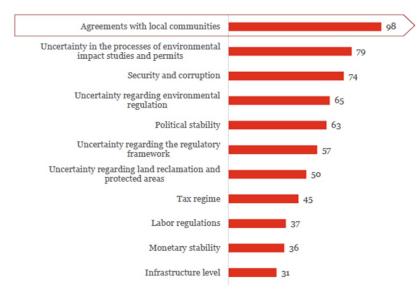
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What are the main challenges for the growth and development of the mining industry in Peru?



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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