

Community influence on mining infrastructure in a changing global climate

Cameron Kirkwood, Director Development Global Mining
Mines and Money Conference 6 Dec 2011



Contents

	Page number
Community influence on mining infrastructure in a changing global climate	1
Who is the community and what do they want?	1
International standards	3
Quantifying the value of social responsibility	4
Analogy to safety	4
Stitching it all together	5
NGOs	5
Other mining companies	6
National governments	6
Transformation	8
Practical project delivery improvements:	8
Where to next?	10
References	122

Community influence on mining infrastructure in a changing global climate

The global mining industry is undergoing considerable change in the development and expansion of mining resources. Technical and regulatory challenges are increasing cost. At the same time volatility in global politics and economics is tightening access to funding and fuelling a surge in the realisation of sovereign risk.

All these changes influence the infrastructure that mining companies need to construct. Traditional problems defined by ore body characteristics and location geography are getting more complex as we go deeper and mine more remotely; however, these impacts on mining infrastructure are relatively easily to define and cost. We have well developed engineering methodologies to derive solutions and we have strong drivers in the market place to drive innovation and improve performance to bring new projects online technically.

Community investment and infrastructure, however, is a much more difficult area for a mining company. This is especially true in developing nations, where infrastructure is often the single largest challenge. Significant and ongoing investment is required for road-building, development of ports and bridges, railway construction and energy generation projects. A mining project offers one of the fastest ways for a nation to improve its community infrastructure.

Who is the community and what does it want?

It is difficult to define who is the 'community' that interacts with a mining proponent to negotiate the requirements for infrastructure. It is not just the local community. We need to take into account the greater group of all stakeholders.

Olle Ostensson broadly defines a stakeholder as: somebody or a group of somebody's who whether or not materially affected, has a vested interest in a mineral project and its outcome and thus 'holds a stake in it'. The vested interest is not necessarily and exclusively economic but can be legal, political or ethical.¹

Stakeholder connections are broad and complex.

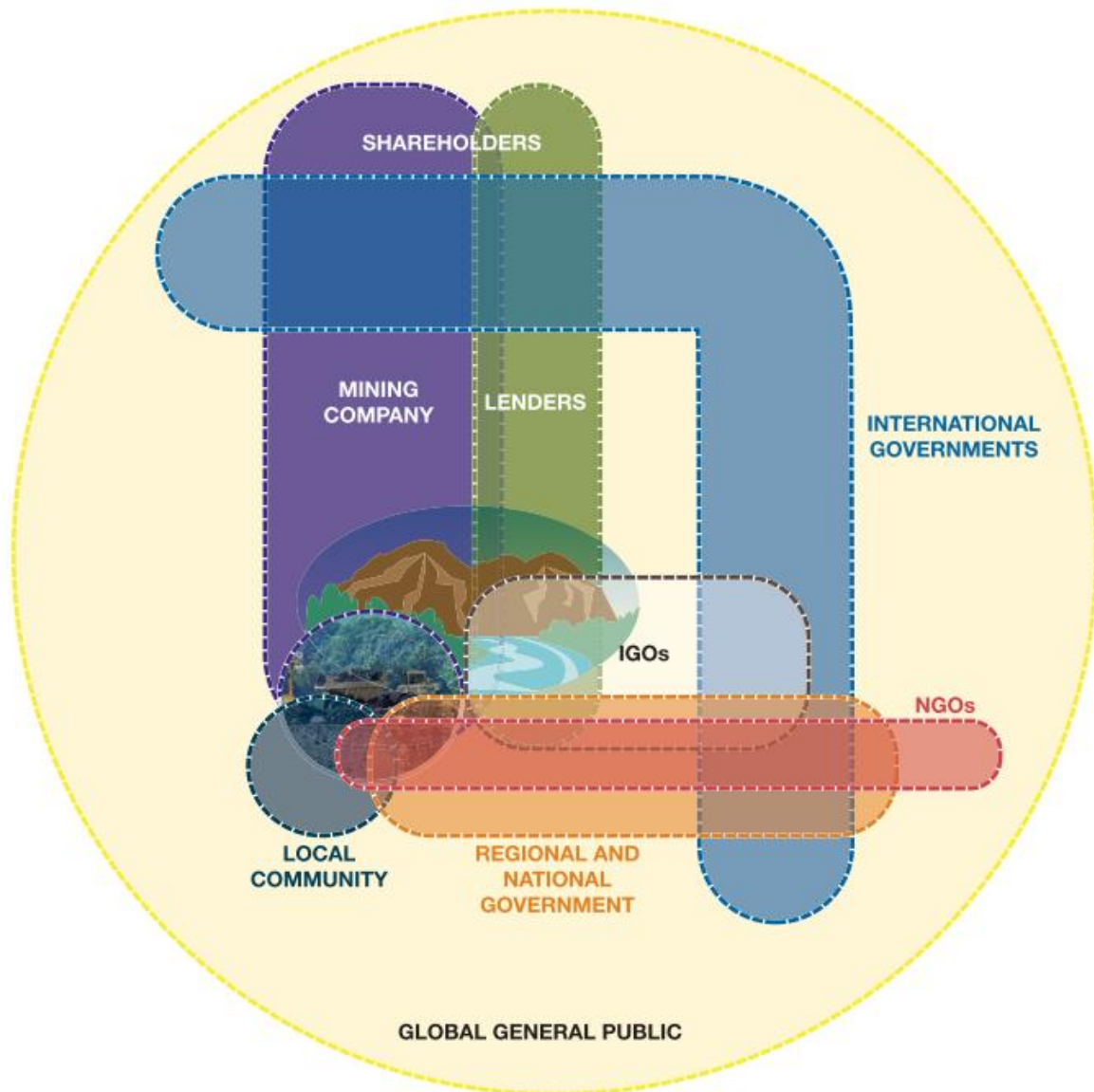


Figure 1 interaction with various stakeholders.

Initially, interactions are limited around the ore body between the local community and the various levels of national government. At the exploration stage, the government invites third parties to investigate the ore body, interaction with mining companies begins, and local community expectations begin to be set. Expectations, however, at this stage may be unrealistic and implications for development may not be clearly understood.

When drill rigs arrive, community groups may not understand that this represents an exploration phase only and instead imagine that this is the start of a mine operation. There will likely be conflicting emotions at play around fear of change and expectations of sharing in wealth. Polarisation may easily occur and at this critical stage, trust can be gained or lost with local groups.

The overall position of local communities varies across every project. Where infrastructure is lacking, there is often a strong driver by both the government and local community to align and positively encourage mining to maximise community investment to the limits of the financial capability of the

Community influence on mining infrastructure in a changing global climate

project. In areas characterised by high employment with a stable industry base, there is likely to be low levels of support for a new mining venture and more likely direct opposition.

In general local communities will strive to:

- Preserve lifestyle and values and traditional occupations;
- Create job opportunities, increase income and standard of living;
- Balance economy; and
- Minimise environmental impacts²

As the project develops, interest groups and non-government organisations (NGOs) become galvanised. At the same time, the developing company must negotiate with its own stakeholders: the shareholders, the financiers, home country regulators and industry bodies to whom it is obligated. Most multinational companies will have pre-negotiated these parameters into social and community policies and framework procedures. For example, Anglo has implemented its SEAT (Socio Economic assessment toolbox) programme and 'The Anglo Social Way' which is helping push the company to harmonise its values and operations. The other major mining houses have equally cogent, well-resourced and value driven programmes underway³.

The business marketplace and shareholders alike are calling for transparency in company operations. Most of the major mining houses are based in developed countries where there are high standards of ethical and moral behaviour demanded and legislated.

The legislated values of developed nations recognise that however benevolent, government alone cannot provide for all the needs of its citizens. The development of the economy of any nation is the joint responsibility of the government, the citizenry, and corporate entities operating within its boundaries. As we reach out to other jurisdictions, corporations and their home country shareholders expect behaviour to be consistent.

To this end the Australian government has recently released a handbook: *Social Responsibility in the Mining and Metals Sector in Developing Countries*. The handbook draws primarily on examples of Australian leading practice and has been developed as a guide for a range of audiences: mining and mineral processing company managers, (especially small and medium-sized companies, who plan to operate in developing countries); developing country governments; non-government organisations (NGOs); and communities⁴.

International standards

Similarly, there has been a surge in Intergovernmental Organisations (IGOs) charged with setting standards and developing accountability frameworks that have achieved real momentum in recent years.

- 1) The International Finance Corporation Performance Standards on Social and Environmental Sustainability (2006) are referenced in a framework known as the *Equator Principles*. This framework is used by commercial banks to manage environmental and social issues in project financing. As a result, it is becoming increasingly difficult to obtain funding unless these standards of good practice are maintained. As finance becomes harder (and more expensive) to obtain (as equity markets dry up due to macro-economic turbulence), good corporate citizenship will increasingly look like good business practice. Mining projects require long-term stability to generate return on investment and all efforts to stabilise community acceptance

Community influence on mining infrastructure in a changing global climate

and the 'social licence to operate' are seen as good practice. It also offers practical risk reduction to ensure an appropriate return for financiers⁵.

- 2) The UN Human Rights Council recently endorsed the 'Guiding Principles on Business and Human Rights: Implementing the United Nations 'Protect, Respect and Remedy' Framework' proposed by UN Special Representative John Ruggie. The Principles are designed to provide high-level guidance to businesses on how to ensure they respect human rights in partnership with States' duty to protect them (UNHRC, 2011)⁶.
- 3) The International Council on Mining and Metals (ICMM) adopted a set of sustainable development principles in May 2003. This represents the global industry's commitment to manage social, health, safety, environmental and economic issues in order to deliver sustainable shareholder value: and to both improve its performance in managing these issues and to publicly report industry's progress in doing so.

Importantly the ICMM's set of 10 principles nominate that suppliers as well as signatories must comply: the intent of which is to drive a culture of effort to deliver sustainable mining with community involvement. The measure of effectiveness is yet to be realised as this was only implemented in 2010; however, Principal 10 requires measurement and reporting⁷:

- a. ***Implement effective and transparent engagement, communication and independently verified reporting arrangements with our stakeholders.***
 - i. ***Report on our economic, social and environmental performance and contribution to sustainable development.***
 - ii. ***Provide information that is timely, accurate and relevant.***
 - iii. ***Engage with and respond to stakeholders through open consultation processes.***

Reporting is through the GRI (Global Reporting Initiative)⁸ and there is a supplement for Mining.

Quantifying the value of social responsibility

Companies can quantify the potential benefits that can accrue from investing in socially responsible programs through a tool the IFC has developed called Financial Valuation (FV). The FV tool incorporates value creation as well as value protection aspects of social responsibility investment. The tool tests a thousand probable outcomes of risk scenarios to arrive at an estimation of potential impacts on a project's net present value. In the examples used by the IFC to demonstrate the value of the FV process, it showed that in a modelled US\$2 billion Rio Tinto Alcan project, a US\$50 million investment in sustainability projects returned US\$500 million (CommDev). The IFC also cites the Newmont Ahafo project in Ghana that was able to start construction six months earlier than anticipated because it invested in building community trust early in the land access negotiation process by embedding community specialists in the project team to work alongside the technical experts. This constituted a substantial saving to the business⁹.

Analogy to safety

The cultural shift to understanding the intrinsic value of working together should be a familiar scene for the mining industry. Twenty years ago, the mining and construction industry in the developed world

Community influence on mining infrastructure in a changing global climate

underwent a massive shift to re-orient its culture from 'anything goes to get the job done', to a safe work culture, where anything goes to keep worker's safe (including shutting down operations).

All of the same markers are now present in this current cultural shift including the initial lead from developed countries with internal legislation, IGOs collaborating to set standards, a shift in public expectations etc. In our safety journey we went through a period where the workforce came to expect the right to return home safely at the end of a day's work (i.e., the 'company' was seen to have all the responsibility and was expected to take all the action; the workforce in this view was a passive recipient of a safe workplace). Following this we eventually arrived at an assimilated workplace culture where we are all responsible for ensuring safety - workers and managers alike.

In a similar way we need to reach the same paradigm in our community relations. The principles of working together need to be enshrined in all mining project business practices and the community needs to proactively work to understand the value of its mineral wealth and how to best work with a mining partner to fairly distribute the wealth within the financial limits of the project. As was the case with safety, transparency, reporting and corporate dedication to leading the behaviour will be a key to facilitating change in the industry.

Stitching it all together

As mining corporations align with financiers, shareholders and home jurisdictions in their approach to a project, all the planning and frameworks have to grapple with the real job of balancing project and jurisdictional needs.

As mining companies now embark on a project, there is normally a well-developed culture in place within the company and a best practice engagement plan ready for implementation with the local communities. However, despite the best intent in the design, during the implementation of the plan, powerful factional forces, divergent local and national government interests, excessive red tape, residual resentments, unintended social implications, other local mining companies, and third party or NGO influence can have huge impact on the realised community investment and infrastructure.

NGOs

Once a project becomes publically engaged it will likely result in the formation of local NGOs and through this may attract the interest of international NGOs. NGOs are often energetic and tireless campaigners for change and they act as agents to ensure accountability. Mostly NGO's intent is to protect community or environmental interests. Local NGOs are more likely to be flexible and if their objective is for local employment they may act as supporters of a mining project.

At times, single-minded international NGOs can influence local communities for their own purpose and cause unintended misalignment of community needs. This may happen due to importing agendas, misunderstanding of community needs or sometimes, simply as an unforeseen social consequence. For example, the distribution of work in a village may for generations have included walking long distances to fetch water. When an NGO helps facilitate a new clean water supply, willingly installed by local mining operations, the sudden availability of spare time can lead to social difficulties as roles are renegotiated. At such times, the connectedness of a mining company to its local community will prove invaluable in detecting the tensions and helping adaptation.

Other mining companies

Other mining companies in the region will typically have a competitive orientation towards resources such as local labour. However, in remote regions, a collaborative approach to building regional strength will most likely yield a win-win situation for both parties. Nevertheless, at times an unintended ratcheting up of community expectations can occur.

For example: Mining Company A plans (and secures investor funding) to relocate a village and offers new mud brick houses. During the planning phase, an adjacent mining operation moves a village in its area into new modern houses (at three times the cost). Whilst non-cost drivers may be at play (such as mud bricks were intended to preserve cultural integrity, etc.), the village interacting with Company A may well feel patronised and short-changed. The end result, whatever the details, will probably be that Mining Company A needs to invest more money to both 1) improve its understanding and interaction with the local community, and 2) to lift its offer to a level that re-establishes community trust.

Overall, a collaborative approach on both the industry and community side through sponsored forums and sharing of community plans helps all regional stakeholders know what to expect. In remote areas, where communities may not have the sophistication to coordinate a united dialogue with industry, it becomes incumbent on the mining industry to lead by example through collaboration.

Where a region experiences intensified activity, community interaction may become formalised into regional government bodies. At this point, it is important to adapt and recognise where the true voice of the community can be heard. Strategies for broad-based community engagement can be found in the Australian government handbook previously referenced: *Social Responsibility in the Mining and Metals Sector in Developing Countries*⁴.

National governments

The national or regional government is the primary authority with which mining companies engage to obtain a formal licence to operate. In the past, this was accepted with a sense of entitlement, and there was little concern for the rights of other local groups (essentially silenced by the authority approvals process). With a string of high profile mine closures that resulted from communities that were ignored, the mining industry has learned that both national/regional and local communities need to be sincerely engaged.

A difficult, albeit common, case arises where a national/regional body acts in its own interest (or in the interest of political expediency) and this is at odds with both the industry it is trying to encourage and with its own local communities.

The Frasier Institute 2011 Annual Survey of Mining Companies includes the following salient quote¹⁰:

{sic} Worrying trend of African governments to continually increase royalty taxation, which is a regressive tax by nature. This is ostensibly to compensate the country for its mineral resources, ignoring the capital investments & skills required to turn these to account, the corporate and employee tax on income that the mine generates, and the mounting corporate social involvement expenditures which are made because the government steals or squanders the funds on politicians rather than the people of the country'.

This statement highlights two wider issues. The first is sovereign risk, in which Africa is not alone in changing the tax base of mining investments. Indeed Australia is in the process of enabling a mining Super Profits Tax that has caused considerable interest amongst mining companies. The impact of this level of national policy engagement on community infrastructure occurs at a gross level as it

Community influence on mining infrastructure in a changing global climate

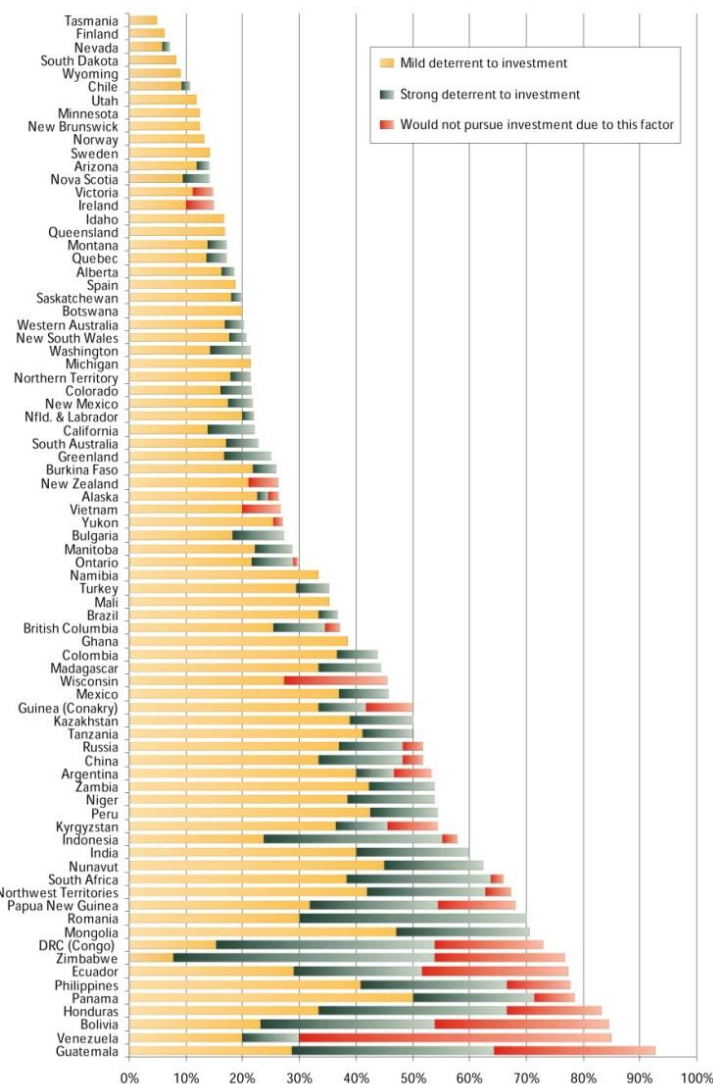
affects the economic viability of a project as a whole. That is it may act to stop investment at a project level and in this sense swamp specific community strategies. The community impact, however, for marginal existing operations may be significant, should it lead to early closure and the flow on effect to reputational damage needs to be managed, even though it may be perceived by the miner that they are the aggrieved party.

The second point raised is one of wastage and corruption, and this point leads directly to the need for mines to ensure there is enough capital budget to service the local community in direct practical assistance to ensure its support in spite of the national government.

The Fraser Institute report includes the following chart on Socio-Economic conditions and perceived influence on mining investment. As the country descends the list the higher the likelihood that a mining project will need to invest more heavily in partnering with its impoverished or isolated local community to ensure a healthy relationship.

The lesson learned in remote regions viz the disconnect between a centralised national government interested in mining royalties and impoverished local people, is that the local people may have little ability to influence the government but they have a big ability to influence the mine through means of regional activism.

Figure 13: Socioeconomic agreements/community development conditions



Benedict Young Imbun conducted a study into the interaction of two remote communities in Papua New Guinea with significant mines established in their traditional lands. An interesting phenomenon was observed that whilst the usual mining tax concessions and royalties to landowners were expected and undertaken, additional infrastructure benefits (of local road, bridges, health centres and schools) were demanded by local people and agreed to by the mines. The areas in question are extremely isolated and the demands 'unquestionably genuine'. The local communities have since recorded a high level of trust with the mining companies and often have held them in much higher regard than their own government. The companies in question have realised that the local community, in particular due its remoteness, is an inseparable partner in its business and the continued high level of trust and good relationship is essential to the ongoing operation of the mines. The lessons of Bounganiville and OkTedi are very close to mind¹¹.

The issue of trust is of critical importance.

Another anecdote from the Frasier report underlines this:

*'Botswana trusts you to do the right things and do what you say—and you had better not falter or you will lose that trust going forward. Most everywhere else has moved towards the assumption that we are by nature dangerous, wilful destroyers of the environment, etc., and need to be monitored like career criminals on parole rather than as good corporate citizens who wish to do the right thing, for the right reason, and completing endless forms is not value added. I support reasonable regulations and highest sustainable development/health, safety, environment, and community standards, but the process in many jurisdictions has added a level of cost that makes our industry more and more challenged to find ore bodies that can cover the cost and time value associated with the current environmental, social impact studies, plus need to share with communities, etc. Commonly, there is not enough left to justify investment.'*¹⁰

The above anecdote raises the spectre of regulating the industry into stasis. This has occurred in several jurisdictions, most notably in developed countries where the influence of NGOs with good intent but single-minded intensity can result in an unbalanced view taking hold. Mining projects are easily politicised.

*Exploration land base is getting smaller worldwide due to mining's bad name, resulting in more protected areas and no-go jurisdictions. This bad name is generally self-inflicted. Mining companies need to regulate themselves in regards to land reclamation after exploration and mining, [to ensure they honour their] social license to operate in different jurisdictions. Bad practice should not be tolerated and bad mining companies should be blacklisted.'*¹⁰

Both the comments above contain the answer as well the dire prediction. It is the breaking of trust that leads to over regulation. This recognition has been absorbed by the industry and the effort over recent years to overhaul industry culture, tighten finance to ensure corporate social responsibility metrics are met, and improving transparency will all contribute towards transforming the industry.

Transformation

As the industry goes through a cultural shift there is going to be increased cost. Just as per safety, a focus on change requires resources and these add to the bottom line. What we remove is risk and the realisation of potential cost many times higher than the real cost incurred. A practical insurance policy so to speak is needed as we act to proactively manage projects to secure the best and most efficient outcomes for all parties.

The most important feature of community investment is that it can only be done to the financial limits of the project. So at the same time that additional cost is being applied to achieve cultural change, projects should be looking for broader opportunities to support this initiative but also lower overall cost, improving the financial position and sustainability of the project and in this way improve the ability of the project to sustain improved community outcomes.

Practical project delivery improvements:

- 1) Absorb the cultural message of the industry. Make sure project leaders understand obligations under ICMM and Equator Principals. Encourage suppliers to sign up as well. Absorb and make use of industry assistance and focussed government resources such as the Australian government handbook on 'Social Responsibility in the Mining and Metals Sector in Developing

Countries'. Invest in training staff and promoting the culture.⁴

- 2) Pass on lessons learned from other jurisdictions – multinational mining companies have a large experience base and are able to draw on practical tools and standard ways to solve problems. Innovation is linked to relationships, networks and lessons learned. There is a constant evolutionary process. Companies that supply EPCM services and project management support ,now act as critical transformers of the mining industry by transporting innovations from one mining site to the next and by providing enhanced solutions based on previous systems and processes that worked well for other clients
- 3) Focus on systems - The most critical project capability usually relates to knowledge management systems and processes with core information embedded in the project delivery team
- 4) Get interest groups on board – If a credible and organised group is interested in the project, it is likely they have a valid position to consider. Give them a job. Ask them to look at it and pay them to come up with a solution. For example if the WWF is interested in your project area, consider getting them to do the flora and fauna study.
- 5) Invest in understanding and building up a local supply chain and business network - the indirect benefits of how mining companies choose to spend their development and operational dollars is critical to the sustainability of a region. The local labour, service and industrial markets often become dependent on mining operations and along with this dependency comes a responsibility to be aware of the regional context of contracting and purchasing decisions. Extending commitment to local economic development and capacity building. For example encouraging contractors to target training and employment opportunities within the local community, and by giving explicit preference to a local supply chain.
- 6) Plan upfront, take on board community needs and build them into project procurement. Make your plan to deal with community issues part of the construction operating rules that contractors sign up for. For example, write a detailed traffic management plan

Lean principles

- Projects are fast-tracked into production with well-planned and well-designed infrastructure.
- Standardise design/infrastructure techniques
- Lean management is a value-seeking process.
- Makes work flow more reliable, speeds up project delivery and increases value to clients.
- Lean principles facilitate concurrent work and reduce project duration to deliver tangible and quantifiable project savings.
- helps to eliminate waste, re-work or costs due to the need for extended activity along a critical path.
- allows for production to be managed so that all actions are aligned to value outcomes where the concern for total project cost and duration is of more importance than the cost/duration of any specific activity.
- Coordination can still be accomplished through means of a master schedule while work flow is managed by team members who are aware of global project goals

Community influence on mining infrastructure in a changing global climate

up front. Include it in tender documents so contractors price in the need to drive an extra 50kms around a sensitive area when travelling to site. Make sure tenderers understand the need to provide a full-time escort for heavy loads, make that explicit in the pricing schedule. Overall make project requirements clear to contractors and get them to engage with it.

- 7) Make the projects values clear and communicate it up front. It should be the first thing third parties need to understand about the project. Have a plan for on-boarding companies and individuals into the project. This should extend beyond an induction process to get through the gate. For partners on the project, make it clear you are after corporate commitment to the values of the project and look for a plan to ensure this happens.
- 8) Make use of improved communication technology to explain what you are doing. Fear of the unknown leads to irrational demands. The key to reducing fear is improved communication and understanding. Make the vision of the project clear and compelling. Visualisation and GIS technology with real time updates and with access tailored to the community groups can greatly assist.
- 9) Modularise and standardise where possible, be that designs or mine components. This encourages streamlining and improves project cost efficiency.
- 10) Lean construction – An adaptive lean construction methodology can assist community relations. Lean construction maintains a best-for-project approach. By distributing the decision-making framework through the project and empowering key areas with delegated control (within limits), the decision-making becomes faster and better able to meet the needs of the project and the community. Comfort with change and innovation is an important component of the lean construction team's project culture.
- 11) Set up a dedicated best practice site based community relations group that is responsive, accessible to all teams within the project and empowered to access decision makers in the company at short notice. (ie build in a short circuit for community response that is independent of project interest groups both internal and external).
- 12) Stay abreast of mining technology improvements and plan to incorporate where possible. Faster, quieter, more efficient mining with less dust, all these advantages will impact community relations.

Where to next?

Drivers within the industry are under constant change. In the short-term, economic turbulence and access to finance will likely have a heavy influence on mining exploration and speculative development. Industry re-organisation to face the financial challenges ahead will likely be followed by the inexorable need to face climate change as strong international political drivers put pressure on the extractive industries to balance the need for raw resources against preservation and minimising climate change impacts.

The one major enabling factor with the greatest promise is technology change. Technology is moving at various paces. Whilst some mature areas are relatively stable, other sectors such as communication and computational technology, biological genetics research and nanotechnologies are continuing to improve at an exponential rate. The application of these technologies will have a significant impact on mining through the production of smaller, smarter, more autonomous machines and new breakthrough processing and biological waste-treatment processes. In parallel, the improvements in the energy fields may change available power and the nature of some extractive

Community influence on mining infrastructure in a changing global climate

industries as we shift from dependency on oil. With NASA think-tanks already working on mining in space, we will most likely be mining in space within 20-30 years. A whole new concept in community consultation yet awaits.

Overall the future is a bright one for the mining industry. The industry is well geared to adapt to change. A sincere and energetic shift to investing in the re-building of trust with the community is happening at a critical time. Ultimately the industry must encourage innovation, share better efficiencies, lower cost and reinvest in the communities to help generate positive change. Working together achieves better outcomes for us all.¹²

Contact

Cameron Kirkwood
Director Development, Global Mining
e: KirkwoodC@pbworld.com
p: +61 2 9272 5100

References

1. Ostensson, Olle: 2000, 'The Stakeholders: Interests and objectives', ed. Otto, James and John Cordes. *Sustainable Development and the Future of Mineral Investment*, p. 3-1.
2. Guerra, M. Cecilia Gonzales: 2006, 'Community Relations in Mineral Development Projects', *Dissertation submitted for the Degree of Master of Laws in Natural Resources Law and Policy at the University of Dundee*, p. 14.
3. Anglo American: 2009, 'Socio-Economic Assessment Toolbox (SEAT)' and 'The Anglo American Environment Way Volume 2', Available from: <http://www.angloamerican.com/development/approach-and-policies/human-rights/approach>
4. Australian Government: 'Social Responsibility in the Mining and Metals Sector in Developing Countries', *Leading Practice Sustainable Development Program for the Mining Industry*.
5. *Equator Principles*. Available from: <http://www.equator-principles.com/index.php/about-ep>
6. United Nations Human Rights Council: 2011, 'Guiding Principles on Business and Human Rights: Implementing the United Nations 'Protect, Respect and Remedy' Framework'. Available from: <http://www.business-humanrights.org/media/documents/ruggie/ruggie-guiding-principles-21-mar-2011.pdf>
7. International Council on Mining and Metals: 2010b, 'Good Practice Guide: Indigenous Peoples and Mining'. Available from: <http://www.icmm.com/library/indigenouspeoplesguide>
8. International Council on Mining and Metals: 2010. Available from: <http://www.icmm.com/our-work/sustainable-development-framework/public-reporting>
9. CommDev: 2011, 'Financial Valuation Tool', Available from: http://www.commdev.org/section/tools/fv_tool
10. McMahon, Fred & Cervantes, Miguel: 2011, 'Survey of Mining Companies 2010/2011', Fraser Institute Annual.
11. Imbun, Benedict Young: 2006, 'Cannot Manage without the 'Significant Other': Mining, Corporate Social Responsibility and Local Communities in Papua New Guinea', *Journal of Business Ethics*.
12. Bastida, Elizabeth, Irarrazabal, Ricardo & Labo, Ricardo: 2005, 'Mining Investment and Policy Developments: Argentina, Chile and Peru'.