

IM4DC

Action Research Report

SUMMARY

Researcher:
Kwasi Darkwa Ampofo – PhD student

School/Centre:
Sustainable Minerals Institute

University/Institutions:
University of Queensland

Key themes:
Governance and Regulation

Key countries:
Ghana

Completion:
October 2014

Research aims:
The purpose of this research was to:

- Develop a tailored model, transparent and practical, to enable real options to be adopted by industry
- Develop an improved method for project evaluation, to convert risk to opportunities and uncertainties to flexibilities

For further information on this action research:
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Powerpoint presentation:
Now is the time to choose Real Options over Discounted Cash Flow. A case of strategic decision making in the Ghanaian investment climate

Final report and powerpoint presentation available on request from:
admin@im4dc.org

Mine Planning in the Face of Economic Uncertainties

This research provided the opportunity to review 'real options' as an evaluation technique, from a literature as well as practical perspective, and its potential contribution to Ghana's mining investment climate and fiscal policy making. This was done through a desktop review of how real options has improved the fiscal policy making of several developed countries in the world and a practical field trip to discover how these applications can be made to improve Ghana's situation.

Through this research, it was discovered that Government regulatory agencies should not only develop fiscal policies on the sole background of commodity price fluctuations since this was not the only source of uncertainty faced by mining companies. The research revealed that there is a high tendency for Government to increase existing tax rates and introduce new ones whenever there is a marginal or exponential increase in commodity prices, ignoring the exponential effects of other uncertainties such as unstable foreign exchange regimes and energy prices, which equally affect cash flow. The findings indicated that this approach cumulatively improves Government's revenue in the short term, but hampers the growth of the mineral industry in the long term.

To improve the existing approach, a review was conducted with respect to the Ghanaian mineral investment climate to rank the top three economic uncertainties mining companies face and look at how real options can improve the way Government makes evaluation decisions on projects.

A skeletal real option framework was developed which featured the top economic indices to consider in Government's fiscal evaluations and policy making to improve the mundane approach of considering solely commodity price in their analysis. Further work will expand upon this in the ongoing PhD project.