

## **Vulnerability of Artisanal and Small-Scale Mining to Commodity Price Fluctuation**

### **Preface**

Around 13 million people from over 30 developing countries work in the artisanal and small-scale mining (ASM) sector and some estimates suggest that over 100 million people depend directly or indirectly on ASM for their livelihoods. ASM accounts for 15-20% of the world's non-fuel mineral production, but its importance varies across countries and types of mineral.

Small-scale mining, like other livelihoods, does not exist in isolation, but is affected by world market prices for minerals and gems. These prices are influenced by demand (mainly in developed countries), and by the activities of the large-scale mining companies who produce and trades these minerals and gems on world markets.

That global markets affect the livelihoods of small-scale miners is not in dispute, but since the pattern of production and the structure of the industry vary from country to country, tracing the links between global markets and miner's livelihoods is complex. Certainly, changes in the structure of the large-scale mining industry and in world market prices may change the structure of the ASM sector and significantly affect dependent communities.

This series of papers researched and written by Bannock Consulting in association with Intermediate Technology Consultants and funded by the Department for International Development, attempts to examine these linkages and to identify and measure the impact of market forces on livelihoods.

The desk study examines the effect of volatility in mineral commodity prices, cost of capital and exchange rates on the ASM sector and the relationships between this sector, the large-scale mining sector and national governments. The project was designed to develop a better understanding of the way these economic and financial fluctuations affect ASM and associated communities, and reviews the successes and failures of interventions to provide a fair and stable market for metals and mineral prices in the context of ASM.

The first paper sets the scene, outlining the structure of the mining industry in countries where ASM plays an important role, and in particular the balance between ASM and large-scale mining. This paper explores how conventional classifications of ASM fail to properly address the heterogeneity and complexity of this livelihood and suggests a more holistic reclassification which is responsive to the livelihood demands of those involved. The paper discusses how policies directed to the sector should be oriented towards the development of legal frameworks that properly recognises the prevailing labour and production arrangements.

The second paper considers the risk and vulnerability contexts related to subsistence miners. The paper focuses on vulnerability and examines the likelihood of negative consumption volatility as a result of idiosyncratic or common shocks. Sources of shocks are examined in detail, including risks in yield, health, weather, policy and also economic and market risks such as a changes in prices, interest rates and exchange rates. Following from paper one, it suggests that the failure to identify and recognise the ASM sector according to context specific characteristics can lead to an increase in the risks that stem from unfriendly legal and policy frameworks.

The analysis demonstrates that risks come from many different sources and are highly correlated - the heterogeneity of risks therefore requires a similarly heterogeneous

response. Although not conclusive, the analysis leads us to believe that commodity price risk might not be the most important source of risk for the ASM sector and when considering price stabilisation mechanisms, the full range of risks must be taken into account.

The third paper develops this argument in more depth, looking in detail at the relationship between economic fluctuations on world markets and ASM livelihoods and extending on the conclusion that price is not the most important risk for the ASM sector. The paper argues that price stabilisation should therefore not be seen as a priority for policy and demonstrates that the history of price intervention schemes, particularly in the agricultural sector, is not encouraging. The paper looks at schemes which assist producers in coping with price and other risks and finds that these are likely to be more beneficial than schemes which aim to alter risk distributions. The paper concludes that policy towards the ASM sector should be seen as part of an overall rural development strategy.

The fourth paper discusses the relationship that exists between national governments and the mining sector which is determined by mining laws, health and safety regulations, environmental regulations, the fiscal regime, the related institutional framework, as well as government services provided to the mining industry. The paper also discusses the external factors that influence this relationship, including commodity price fluctuations, exchange rates, natural disasters, and cost of capital, and makes suggestions on how mineral wealth can be used for sustainable economic, social and environmental development. It is found that while declining commodity prices negatively affect mining operations of all scales, capital-intensive large-scale mining companies are more vulnerable than ASM operators with negligible fixed costs.

ASM is considered as a vital contribution to employment with strong linkages to other sectors of the economy which provides a compelling argument for government support. The paper discusses in detail the case for regularisation of the sector and opportunities to increase income for small-scale miners. The paper concludes that mineral wealth is a blessing to countries if used wisely. The challenge lies in effective management, especially in conditions of an unattractive investment climate and pervasive corruption.

The final paper which concludes this suite of papers examines the impact of price fluctuations on livelihood strategies in ASM communities compared with other non-financial shocks and looks in detail at the existence of alternative income generating opportunities and the existence of support mechanisms. The analysis finds that for those already engaged in ASM activities, price fluctuations are unlikely to affect the decision to mine, but will impact the time spent on the activity and the number of family members involved. However, these relationships are multi-dimensional in nature, with additional factors such as the availability of alternative employment and the relative prices of agricultural produce. Furthermore, vulnerability of the ASM community to non-financial shocks such as land eviction, conflict with large mines or the government, accidents, environmental damage and social tension are at least as important. The paper therefore echoes previous recommendations in this series which advocates that governments adopt a holistic approach to policy intervention.

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