AFRICAN MINERALS DEVELOPMENT CENTRE

POLICY BRIEF

ASM and Climate Change

The relationship between mining and climate change has begun to receive increased attention in research and policy circles (Mutemeri et al., in press). A less explored relationship is that of climate change and artisanal small-scale mining (ASM).

The climate change movement has matured in recent years, signified, most notably, by the signing of the Paris Agreement on Climate Change in 2016. The role of ASM in African development has also received greater attention with its inclusion in The Africa Mining Vision Action Plan (2011). The relationship between climate change and ASM will become more pronounced in the coming decades due to its bi-causal nature.

In brief, ASM will contribute to climate change due to the negligent environmental practices prevalent in the sector, whilst climate change will increase the attractiveness of ASM to communities who will experience increased difficulty in maintaining current farming practices. We are increasingly concerned with this topic - in 2017, the majority of climate change literature which focused on Africa, explored its impact on agriculture (Senca Research, 2017).

In this context researchers and policy makers will have to:

- Consider the relationship between ASM, development and climate change;
- Appreciate the benefits of formalizing and regulating ASM activities;
- Understand tools such as the ASM Resilience Pathway

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Key Messages:

- Climate change will make African agriculture more difficult, particularly for marginalised communities
- This will increase the attractiveness of ASM for some communities, thereby growing the sector
- ASM damages critical areas of the environment, which will in turn contribute to climate change
- Formalizing and regulating the ASM sector has numerous environmental and economic benefits

ASM

Artisanal and small-scale mining is a widespread phenomenon in Africa. ASM miners can be found operating across a wide range of mineral types from tin to gold and other precious minerals and stones. ASM is typically a livelihood activity especially in rural areas where there are few alternatives. ASM typically involves rudimentary equipment that emits little in the way of greenhouse gases. However, the informal nature of ASM means that those engaging in these activities do not adhere to formal regulations and environmental practices.

Yet, the impact of their deforestation and land clearing practices will, in the short term damage ecosystems, and in the long-term accelerate climate change as forests and land are natural carbon sinks that help maintain the planet’s carbon budget.

The alternative to ASM, for many in rural Africa is farming. However, the impact of climate change on farming on the continent will increasingly make this alternative far less appealing. As a result, many farmers will turn to mining (Banchirigah and Hilson, 2010).

Climate Change

The IPCC (Inter-governmental Panel on Climate Change) noted, with high confidence, the following on climate change in Africa:

African ecosystems are already being affected by climate change, and future impacts are expected to be substantial
Climate change will interact with non-climate drivers and stressors to exacerbate vulnerability of agricultural systems, particularly in semi-arid areas (Niang et al., 2014)

The IPCC also found that the economically, socially and politically marginalised have increased vulnerability to the impacts of climate change. Communities that engage in ASM, typically fit these criteria. As farming continues to be a less dependable source of income due to climate change, we can expect more communities, to turn to ASM. Other publications have pointed to other potential impacts of climate change on ASM, including: migration flows towards ASM potential areas and the resulting conflicts with local communities.

Climate change adaptation and resilience

Adaptation, in the context of climate change, is the set of actions we take in anticipation of, or as a response to, events that are triggered by our changing environment. The goal of adaptation is to reduce the vulnerability of human systems (i.e. communities, areas or sectors) to these changes. We reduce the risks of negative impacts by creating appropriate policies and/or practical steps applicable to those systems that we deem vulnerable. We call this increasing resilience.

In the context of ASM, we should ask questions such as, how to do we protect the livelihoods of those who depend on ASM from the impacts of climate change? What actions would allow us to assist ASM communities in dealing with the increasing migration flows towards ASM potential areas as a result of decreasing agricultural yields? If more people are indeed turning to ASM, how do we better manage the increasing health and safety risks already associated with ASM?

Benefits of formalising and regulating ASM

Policy that formalises ASM, whilst not an all-encompassing fix, is one remedy. Informality dominates the ASM sector and formalisation efforts remain unbalanced across the African continent. As long as ASM remains on the periphery of the legal system, efforts to make it environmentally and economically sustainable, safe and leveraging it as a poverty alleviation tool will be grossly hindered.
The benefits to formalising ASM have been documented extensively and they include:

Increasing government revenue through direct and indirect taxes, and thus contributes to the national gross domestic product (Hinton, 2006)
Recognition by governments would allow the sector to increase greater development assistance and provide these miners with access to credit (Mutemeri and Petersen, 2002)
Compliance with environmental management plans
Improved health and safety and occupational health (Arango and Gómez, 2013).
The combination of the potential benefits and the prospect of a growing ASM sector due to climate change, makes the imperative to formalise this sector ever more important.

ASM Resilience Pathway

The ASM Resilience Pathway tool came out of a multi-stakeholder dialogue workshop on the governance of the artisanal mining sector of Madagascar in October 2016. Initiated by GIZ's Program for the Support of the Management of the Environment (PAGE), with financial assistance from the Australian Department for Foreign Affairs and Commerce, and in collaboration with Madagascar's Ministry of Mines and Petrol.

The ASM Resilience Pathway allows actors to determine where a community/sector lies on its journey towards becoming a system that enables sustainable business. It compels the actor to consider the following as resilience attributes: Governance status, Sector policy status, Human rights status, Sustainability status, Business involvement and Risk management. Each of these attributes is assessed as a stage from 1 – Criminal and illegal, to stage 5 – responsible and ethical.

ASM TYPE > v RESILIENCE ATTRIBUTES	Stage 1 CRIMINAL ILLEGAL	Stage 2 ILLEGAL INFORMAL	Stage 3 LEGAL INFORMAL	Stage 4 FORMAL RESPONSIBLE	Stage 5 RESPONSIBLE ETHICAL
Governance status	ASM outlawed, bad enforcement and/or corruption	Governance focus on repression / eradication of ASM	Governance partial, anomalies with legal ASM	Stable governance virtually free of anomalies	Governance an example to other sectors
Sector policy status	Absence of or bad policy incentivises criminal behaviour	Policy incentivises non-responsible LSM	Policy incentivises legal LSM and ASM	Policy incentivises responsible LSM and ASM	Policy drives ethical LSM and ASM
Human rights status	Widespread human rights abuse, including worst abuses	Human rights status worse than the national trend, some worst abuses	Human rights issues mild but less good than national trend, may be some worst abuses	Human rights issues are rare, generally in line with national trend	Positive net contribution to human rights – better than national trend
Sustainability status	Negative for all SDGs	Negative for most SDGs	Negative for certain SDGs (e.g. social & environmental	Generally aligned with SDGs – social, environmental and economic	Positive net contributor to SDGs
Business involvement	Exclusively illegal business	Both illegal and informal business	Mainly informal legitimate and legal business	Mainly legal compliant businesses	Significant responsible & ethical business
Risk management	Risks generated by sector; exploited by criminals for profit	Risks generated by sector; some criminal exploitation likely	Some risks mitigated; remediation unlikely	Risks mitigated; remediation of worst abuses; positive development outcomes possible	Risks mitigated; remediation across issues; positive development outcomes actively pursued

Figure 1: ASM Resilience Pathway

The sustainability attribute is particularly compelling for the ASM and climate change dialogue. The sustainability attribute is deemed to be at stage 5 when it is judged to be a "Positive net contributor to the SDGs". Goal 13 of the SDGs is Climate Action, which includes the following targets, to "Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries" and to

"Integrate climate change measures into national policies, strategies and planning".

By merging the mainstreaming of climate change concerns with the formalisation of the ASM sector, this tool provides a useful framework for understanding and coping with these issues. Their categorisation as stages, also allows the actors to understand and demonstrate that improving these attributes is an evolutionary process.

Recommendations:

The impacts of climate change on agriculture are already being felt across the African continent, we can expect these impacts to be amplified in the coming decades. As a result, the communities that depend on agriculture for their livelihoods will turn to informal and easily accessible work such as ASM. As the sector grows, it is imperative that governments begin to implement policies to mitigate many of the negative practices currently associated with ASM. Without efforts to formalise and regulate the sector, these practices will grow in scale and impact.

For these efforts to be effective, we propose some general recommendations:

◊ Policy makers should begin by assessing and acknowledging the current state of ASM in their countries using tools like the ASM Resilience Pathway

◊ Building evidence bases to support and inform the micro and macroeconomic policies and strategies should be given high priority

◊ Climate change should be integrated into national and regional ASM strategies

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> "Climate change will make African agriculture more difficult, this will increase the attractiveness of ASM for some communities to consequently grow the sector"

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THE AMDC APPROACH

> “Harnessing minerals resources for Africa’s transformation”

AFRICA MINING VISION

“Transparent, equitable and optimal exploitation of mineral resources to underpin broadbased sustainable growth and socio-economic development.”

African Minerals Development Centre Mission

To work with AU Member States and their national and regional organisations, including the AUC, the NEPAD Planning and Coordinating Agency (NPCA), and Regional Economic Communities (RECs) to enable mineral resources to play a greater transformative role in the development of the continent through increased economic and social linkages, and in this manner, help address its intractable poverty and limited development.

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The AMDC Workstreams

Our workstreams reflect the priorities identified by African governments.

1. Policy and licensing
2. Geological and mining information systems
3. Governance and participation
4. Artisanal and small-scale mining (ASM)
5. Linkages, investment and diversification
6. Human and institutional capacities
7. Communication and advocacy

We harness knowledge from these areas to support and inform a wide range of stakeholders. Together, this work supports African mineral economies to: develop consistent development-oriented mineral policies and regulatory frameworks; make effective use of geological and geospatial information for developmental outcomes; diversify their economies by unlocking linkages; establish a knowledge-driven and well-governed African mineral sector that is socially and environmentally accountable, mainstreams gender and contributes to broad-based growth and development; and build a viable and sustainable artisanal and small-scale mining sector to provide decent quality of life for rural communities.

Artisanal and small-scale mining (ASM)

- Works to reinforce the extent to which ASM frameworks in African countries align and support AMV implementation.
- Carries out targeted interventions to help optimize ASM contributions towards local entrepreneurship, livelihoods and integrated socio-economic development, with particular focus on the key role of women in ASM.
- Provides thought leadership in collaborative efforts to leverage the potential of ‘development minerals’ for transforming the ASM sector.