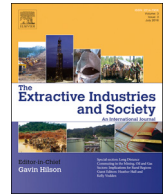




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## Viewpoint

## Artisanal mining in Southern Tanzania: Preliminary reflections on a ‘Green squeeze’

Brock Bersaglio<sup>a,b,\*</sup>, Frances Cleaver<sup>a</sup><sup>a</sup> Department of Geography, University of Sheffield, Sheffield, UK<sup>b</sup> East African Institute, Aga Khan University, Nairobi, Kenya

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## ABSTRACT

Artisanal miners in Mabadaga Village, Southern Tanzania, operate in an environment defined by multiple livelihoods, plural authorities, and changing institutions for resource governance. This complexity is being exacerbated by a green squeeze: intensifying pressure on certain small-scale producers resulting, in part, from the creation and expansion of a protected areas network across the region. In this article, we discuss a few key ways that the miners in Mabadaga Village are being impacted by, and creatively adapting to, their plural and changing institutional environment. In doing so, we highlight the miners’ adaptability, flexibility, and tenacity in trying to navigate formal and informal institutions at the interface of artisanal mining and the green economy. However, we conclude that, as small-scale producers who do not fit neatly into the green economy, the miners are literally and figuratively being squeezed out of their livelihoods while being excluded from accessing the benefits of the region’s emergent green economy. From this double-disadvantaged position, the tenacity of the miners appears to be no match against a green squeeze that is increasingly rendering their livelihoods precarious, unpredictable, and beyond their control.

## 1. Introduction: the machimbo miners

For decades, artisanal miners have toiled for gold along the banks of the Kimani River in the Machimbo Hamlet of Mabadaga Village in Southern Tanzania. The miners use money earned from Artisanal and Small-scale Mining (ASM) to supplement other economic activities, like the farming of cash crops and the rearing of livestock. A couple of the miners have been able to use proceeds from ASM to join rice growers’ cooperatives in Mabadaga Village as well. However, like artisanal miners elsewhere in Africa,<sup>1</sup> the Machimbo Miners’ livelihoods are anything but straightforward. The miners share the village landscape with other small-scale producers, including rice growers, subsistence farmers, and transhumance pastoralists. ASM also occurs at the peripheries of Mabadaga Village – a village where land is primarily allocated for climate-smart agriculture. Moreover, local and national authorities are increasingly claiming land for biodiversity conservation within and around the village. Amid the dominance of climate-smart agriculture and the growth of protected areas in the region, the Machimbo Miners are being squeezed out of an environment that they depend on for their livelihoods.

Artisanal and Small-scale Mining refers to labour-intensive, low-

tech mining enterprises that usually involve minimal capital investment and a high degree of occupational risk (Jønssen and Fold, 2011). The circumstances facing the Machimbo Miners (above) are familiar in ASM literature, which challenge the marginalized position that ASM occupies in development planning and policy-making at local, national, and international levels (Hilson and McQuilken, 2014). Whereas authorities traditionally perceive ASM as a nuisance ‘high-risk, high-return’ activity unbeneficial to socio-economic development (Banchirigah and Hilson, 2010; Jønssen and Fold, 2011), recent literature suggests that ASM is just one activity in miners’ diverse livelihood portfolios – an activity that should be supported, given the important role it plays in supplementing other economic activities among households and in wider society (Hilson, 2016). In both drawing from and contributing to ASM literature from Tanzania (see Fisher, 2007; Jønssen, 2010; Childs, 2014), this article situates ASM in Machimbo Hamlet in relation to broader societal changes that have implications for the diversity and robustness of livelihood portfolios in Mabadaga Village.

In doing so, this article adds a nascent understanding of how ASM is being impacted by one manifestation of the green economy in Southern Tanzania: the creation and expansion of protected areas for biodiversity conservation and nature tourism. Given that the green economy is

\* Corresponding author.

E-mail address: [b.bersaglio@sheffield.ac.uk](mailto:b.bersaglio@sheffield.ac.uk) (B. Bersaglio).<sup>1</sup> By Africa, we mean countries on the African Continent located south of the Sahara Desert – including island nations like Madagascar.

dramatically altering existing institutions and relationships of authority for governing natural resources (Benjaminsen and Bryceson, 2012; Buseth, 2017; see also Childs, 2014; Dube et al., 2016; Marshall and Veiga, 2017; Siwale and Siwale, 2017), we are concerned with how the Machimbo Miners navigate such changes in pursuit of their livelihoods and with what effect. Specifically, we highlight the complex, sometimes contradictory, effects that expressions of agency by the miners can have in an institutional environment structured against ASM. This contribution adds to the foundation for ongoing policy-oriented and theoretical analyses that take ASM's role as a livelihood strategy seriously in the face of rapid, sometimes radical, agrarian change (see Fisher et al., 2009; Jønssen and Fold, 2011; Hilson, 2016).

We begin this article by briefly describing the green economy in Southern Tanzania and how the creation and expansion of a protected areas network in particular is impacting the institutional environment in which the Machimbo Miners operate. We then discuss the miners' strategies for navigating this changing institutional environment in pursuit of their livelihoods. To illustrate the miners' agency, we highlight the adaptability and flexibility that underpin these strategies. However, we argue that the creation and expansion of a protected areas network is intensifying the pressure on small-scale producers like artisanal miners who do not fit neatly into the green economy. In concluding, we argue that this green squeeze is rendering the Machimbo Miners' livelihoods increasingly precarious, unpredictable, and beyond their control.

## 2. A note on research methods

This article is based on research carried out in Mbarali District between 1999 and 2017, including repeat fieldwork and research activities (i.e. interviews, focus group discussions, participant observation, and site visits) involving many of the same research participants. Between 1999 and 2001 as well as 2011 and 2012, nine interviews and two focus group discussions were held with miners in Machimbo Hamlet. More recent insights into the relationship between the green economy and ASM in Mbarali District derive from 55 interviews and 5 focus group discussions carried out between April and September 2017, involving 92 total participants.

## 3. Southern Tanzania's emergent green economy

Across Southern Tanzania, increasingly more land is being acquired for biodiversity conservation and nature tourism. This is particularly true in Mbarali District, where the boundaries of Ruaha National Park (NP) were expanded in 2008 to make it the largest NP in the country at about 2,022,600 ha. On the southern border of Mbarali District, which is separated from Ruaha NP by farming and grazing land, Mpanga-Kipengere Game Reserve (GR) occupies about 157,400 ha. Since 2008, efforts have been made to expand the GR and to reinforce its boundaries in the surrounding countryside (Sauwa, 2015). These efforts are part of an ongoing project that aims to connect Mpanga-Kipengere GR to Ruaha NP via a community Wildlife Management Area (WMA) called UMEMARUWA (see *Southern Tanzania Elephant Programme (STEP)*, 2017). If implemented, the UMEMARUWA WMA will incorporate multiple land uses into a wildlife corridor that spans a series of neighbouring villages between the two protected areas. The creation and expansion of these protected areas has not occurred without casualties in the form of displaced populations and damaged livelihoods and, as a result, the legitimacy of their boundaries remain hotly contested.

Perhaps in response to such contestation, efforts to expand and connect protected areas in Mbarali District are being justified by urgent calls to restore water flows in the Great Ruaha River – a lifeline for the production of agriculture and hydroelectric energy in Southern Tanzania (Walsh, 2012; *Government of the United Republic of Tanzania (GOT)*, 2017). Protecting the Great Ruaha River is also a

priority for the Southern Agricultural Growth Corridor of Tanzania (SAGCOT); another prominent green economy initiative that is attracting large-scale investments in climate-smart agriculture in the region (see Buseth, 2017). The combination of green economy initiatives that aim to grow the protected areas network of Southern Tanzania and to increase and intensify climate-smart agriculture means that the space available for livelihoods that are seen to fall outside these two sectors is rapidly shrinking. It is in this context that the Machimbo Miners find themselves trying to strategically manoeuvre a complex, dynamic institutional environment to secure their livelihoods.

## 4. The institutional environment of artisanal mining

The Machimbo Miners were welcoming hosts during our most recent visit to Mabadaga Village in August 2017. One miner toured us around different mining sites while others continued working, stopping occasionally to discuss their techniques and tools with us or to point out tiny flakes of gold swirling into existence in their dented pans. Around midday, the miners ceased their activities altogether and sat with us on mounds of damp clay next to the Kimani River. As the miners talked about the fortunes and misfortunes of their livelihoods, one thing stood out to us: the institutional environment in which the Machimbo Miners operate is plural (i.e. comprised of multiple authorities) and constantly changing, making it difficult for them to navigate. To illustrate this point, we relay the miners' account of ongoing attempts to evict them from their hamlet and mining sites. We validated much of this story with village- and higher-level authorities, except for the miners' claims that some of their peers have been brutalized and murdered by government employees.

### 4.1. A prolonged eviction and unresolved dispute

In 2007, the Tanzania Wildlife Authority served the Machimbo Miners an eviction notice. The government planned to expand the boundaries of Mpanga-Kipengere GR and the new proposed boundaries swallowed up most of the land and resources used by the miners. As discussed, plans to expand Mpanga-Kipengere GR were being implemented at the same time the government was planning to expand the much better known Ruaha NP. Like the national park itself, the Ruaha NP evictions are much better known than those associated with Mpanga-Kipengere GR. Needless to say, the Machimbo Miners protested their eviction and refused to leave the area without being adequately compensated with money, in-kind access to agricultural land, and continued access to mining sites in Mpanga-Kipengere GR.

It took over a year for Mbarali District Council and the Tanzania Wildlife Authority to conduct a valuation exercise to determine the amount of compensation to be paid to the Machimbo Miners. When the valuation exercise finally occurred in 2008, it only accounted for the miners' houses and surrounding trees. Because no land or resources used by the miners were included in the valuation, they refused the terms of compensation and continued to protest their eviction. The exact timeline for the subsequent events is uncertain, but the government agreed with the Machimbo Miners that a second valuation was needed to account for land and resources. Such a valuation exercise was eventually conducted. However, until August 2017, compensation was not granted. Meanwhile, the miners' message to the various authorities involved remains clear: they will not move until they have been fairly compensated.

### 4.2. Change, complexity, and crowdedness

A decade has passed since the first valuation exercise was conducted in Machimbo Hamlet. In August 2017, the Machimbo Miners reported that it was a decade fraught with conflict, tension, and uncertainty. Pointing southeast from our location along the Kimani River to the heart of Mpanga-Kipengere GR, the miners alleged that they have been

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