Mining Cooperatives: re-invigorating small-scale mining participation and benefit in Rwanda?

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Abstract

Current revisionist measures by African states seek to reap greater benefits from their mineral endowments. These measures rest within a policy perspective that mining can contribute to development, and, in sub-Saharan Africa in particular, the Millennium Development Goals (NEPAD and OECD, 2009; IMF, 2011; AFDB 2012). Loosely coined "resource nationalism", these measures have sparked a lively debate in mining and development circles on roles, responsibilities and benefits associated with this resource economy. The debate has unfolded predominantly within a state-centric paradigm of resource governance whereby the state and its foreign-mining company partners are considered *the* key actors.

This paper introduces artisanal and small-scale mining (ASM) to the resource nationalism debate. It argues that a widened analysis of what constitutes "the mining sector" in sub-Saharan Africa, to include ASM, offers up further models for considering mineral resource governance. Rwanda offers a case study to explore questions of national participation in mining by examining the potential role cooperatives can play in developing meaningful national participation and benefit distribution.

Introduction

The United Nations General Assembly declared 2012 the "International Year of the Cooperatives". These entities are considered an important vehicle for collective organisation in the pursuit of economic and social development. In sub-Saharan Africa, cooperatives today occupy a vast landscape of economic and social interests with 7 per cent of Africans belong to one or more cooperatives (Develtere

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et al, 2008). Whilst diverse in their activities, these institutions share a common ethos built on seven guiding principles.[2] They exemplify the International Cooperative Association's definition of a cooperative as, *"an autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations, through a jointly owned and democratically controlled enterprise".*[3]

Of interest for this paper are productive cooperatives. These entities belong to a broad category of organisations operating within the "social economy" (Fonteneau et al, 2011). A key distinguishing feature of productive cooperatives compared to other forms of rural association is the manner in which profits are produced and the rules governing their re-distribution (Fonteneau et al, 2011). The "social economy" identifies cooperative members' motivations as not being predicated upon poverty; rather people participate out of choice. This is a distinguishing feature. Yet their choice to assemble efforts through individual capital does reflect the limited other means with which rural populations can create economic opportunities. These two features—on the one hand, individual choice to participate and on the other hand, constrained credit facilities—exemplifies two important conditions influencing mining cooperative development in Rwanda. Whilst cooperative members do not represent the poorest of the poor, they do face considerable challenges in scaling up their economy. The desire to grow their mining operations is hampered by a variety of economic, social and political constraints that shall be examined in this paper.

Cooperative literature describes the experiences, constraints and organisational model of rural agricultural producing economies in sub-Saharan Africa. These entities compete with private operators to provide products to the market in a given economy. Specifically, they seek to assemble smallholder labour efforts, minimize transaction costs, allow for capital accumulation by its members, and create conditions for fairer pricing to rural producers. However they do not do

[2]These principles are: voluntary and open membership; democratic member control; member economic participation; autonomy and independence; education, training and information; co-operation among cooperatives; and concern for community.

[3] See www.ica.coop (Accessed 20th May 2012)

this alone. Federative structures increasingly assume a marketing role for members' products and may equally represent their interests at the national political level. Network theory—that examines the layers of actor connectivity and exchange—allows for a more comprehensive appreciation of actors' efforts across producing trade chains. Specifically, the web of relationships has been referred to as a *strategic network model*. Fonteneau et al. (2011:71) identifies this type of network model the most preferred for producing cooperatives. Such actor relationships tackle key constraints effecting rural participation in markets such as: lack of information on prices and technologies, lack of connections to established market actors, distortions or absence of input and output markets, and credit constraints (Markelova et al, 2008). These constraints often make it difficult for small farmers to take advantage of market opportunities.

This paper addresses a significant gap in small-scale mining literature on the potential role of cooperatives. It explores parallel constraints in Rwanda's small-scale mining sector, and the role of a strategic network model in facilitating greater participation and benefits for its members. The paper first establishes the current mining context in sub-Saharan Africa with reference to the resource nationalism debate. It challenges the myopic definition of "the mining sector" as being synonymous with large, foreign-led extractive models: models in which the host government plays a regulatory role whereas activities are largely led by foreign capital. The paper considers how a comprehensive appreciation for scales of mining activity might well be a valuable starting point for addressing resource nationalism concerns. In particular it positions small-scale mining efforts into the debate. It explores why small-scale mining remains on the periphery of policy, and suggests why a cooperative model, similar to some agricultural export economies, may provide a conceptual framework for further mineral governance and development models.

The second section focuses on Rwanda. It traces the birth and evolution of mining cooperatives within the broader development of its mining economy. Then, by focusing on the experiences of small-scale miners who have laboured under various regimes, it draws out some preliminary reflections on how a strategic network model as applied to small-scale mining formalisation enhances understandings of how these small-scale economies function. It concludes by lifting up the Rwandan case study into the broader resource nationalism debate in sub-Saharan Africa. The paper draws on original research undertaken in Rwanda during the first six months of 2012.[4]

Resource nationalism in sub-Saharan Africa

State-led revisionist measures signal the current socio-economic and political climate in sub-Saharan Africa; one in which governments and populations assert further and more equitable benefits from the development of their resources. The varied and competing claims of legitimacy, stewardship and ownership reveal the tensions underlying this climate: growing domestic forces, notably poverty and youth unemployment, coupled with continued global pressures, aid and finance.[5] Indeed, whilst minerals are considered important to unlocking economic growth and human development, significant debate remains on *how*, *who*, and *for whom* resources are developed (ICMM, 2006).

Segal (2011:475) argues that the discussion on resource nationalism is particularly relevant today given that it has grown "in importance amid the dramatic rise in resource prices up to mid-2008". The brief but significant commodity price crash that followed prompted a wave of revisionist measures by mineral-rich countries globally. In essence, these reforms target greater mineral benefits for host countries arising from the foreign-led, large-scale mining (LSM) model used in extractive industries worldwide. It focuses on export-led growth as the key indicator to development. With commodity prices rising once again in 2011, policy reforms intensified, engendering a rather vociferous debate on the role of the

[4]Two key methodologies inform this paper's findings: archival research and life histories. Twenty small-scale miners were interviewed in seven mining environments. Informants had to have a minimum of 25 years of experience in Rwanda's mines in order to capture experiences across varying mineral governance models.

[5]See http://www.businessdayonline.com/NG/index.php/analysis/columnists/22144-rethinking-mineral-resources-nationalism-in-africa-3?tmpl=component&layout=default&page= (Accessed 24 June 2011).

state in mineral development. As a result, the Financial Times conceded that resource nationalism is "back".[6]

Its return refers to legislative revisions by mineral-rich states, primarily through tax and royalty increases, and shareholding or ownership revisions in favour of further 'national', 'indigenous', or 'state' participation. Since 2009, in sub-Saharan Africa at least eight mineral-endowed countries are revising (or have revised) their fiscal mineral regimes.[7] Furthermore, two of these, Zimbabwe and South Africa, are swept up in fierce and polarised debates on the role of the state in mining and its obligation to safeguard national benefit, with the former at present re-structuring its industry in favour of 51% shareholdings for 'indigenous' people. Whilst industrialists, civil society organisations and other third-party institutions agree that greater resource distribution is needed for populations to tackle poverty and promote development, the wave of measures sweeping the sub-continent have been met with a variety of opinion in media and popular discussion. Specifically, on *how* mineral development and distribution should be undertaken: is it a question of re-negotiating greater state benefit? Is it a question of promoting more viable distribution mechanisms to directly impact the population concerned? Or are there further alternatives not yet explored?

Peter Leon, a prominent South African mining lawyer, has called for a move away from the state-centred benefit focus in the debate. His call urges policymakers and industry to focus on the broader question of industry's contribution to national development agendas. Indeed, over the last two years industry has moved away from the notion of "corporate social responsibility" in favour of a new conceptual framework: sustainability. Specific measures include harnessing downward and upward linkages to the broader economy, trust funds to link mine benefit to wider national development planning at local and regional levels, contract negotiations to include specific social and economic arrangements for the immediate mining areas, models for cash transfers and direct benefit re-distribution to populations, and

[6]See http://www.ft.com/cms/s/0/2b1fa352-9651-11e0-afc5-00144feab49a.html#axzz1QBdDcKor (Accessed 24 June 2011).

[7] These include Mali, Ghana, Zambia, the Democratic Republic of Congo (DRC), Tanzania, Rwanda, Zimbabwe, South Africa, and Guinea.

transnational attempts to trace responsibility along the entire supply chain from mine to market. Yet these efforts are by and large still embryonic with little evaluative research done to measure their performance and impact.

Whilst these new initiatives break the geographically isolated concept of the "mining enclave" to consider benefit across the entire mineral development process, the focus remains on a large-scale mining governance model whereby industry and the state play the key governance roles. In effect, this debate remains silent on the fundamental question as to whether indeed large-scale operations do provide the greatest arrangements for benefit distribution and national participation.

ASM in the resource nationalism debate

The resource nationalism debate has yet to consider an important model for enhanced participation and benefit in mineral development: formalisation of artisanal and small-scale mining (ASM)[8] practices. The myopic view that "the mining sector" is synonymous with a large-scale, industrial governance model in sub-Saharan Africa disregards mounting evidence that ASM plays a critical and growing role in mineral development. In terms of pure labour opportunity alone, due to its rudimentary techniques, ASM employs more labour than LSM operations in sub-Saharan Africa. It is estimated that approximately nine million people in SSA are directly involved in ASM (Hayes, 2008). If one were to consider a cautious multiplier effect on household distribution, ASM may be contributing to over 45 million people's livelihoods in SSA. Unfortunately, due to its informal nature, it is difficult to assess the levels of national revenue potentially gleaned by this part of the mineral economy.

Direct employment figures above, however, do not consider further employment found in the far-reaching network of trade and supply chains servicing ASM environments: the transporters, business suppliers, restaurateurs and other social service deliverers that catalyse these environments. Indeed, contrary to

[8]Definitions of ASM are varying. Some governments distinguish this type of mining from industrial in terms of capital investment or annual production figures. Typically it is defined by its voluminous use of manual labour, its rudimentary technology (with little to no mechanisation) and its low production recovery as a result.

popular opinion, ASM is a highly organised activity with its own trade chains and labour hierarchies. Its expansive networks facilitate participation and benefit in a similar fashion to the 'upstream' and 'downstream' analogy used to quantify the socio-economic benefit reaches of industrial mining in mineral environments. Over the last decade considerable research has demonstrated these vast ASM networks, beyond the direct labour provided by the activity itself.

Whereas evidence is mounting of the non-farm income opportunity ASM holds in the *de-agrarianisation* debate (Maconachie and Binns, 2007; Banchirigah, 2008; Hilson, 2010), further evidence demonstrates how in fact ASM has played a rooted role across the last decades in developing mineral economies across SSA. That is to say that ASM is not simply a poverty recourse strategy for otherwise farming communities; rather it has played an important role in mineral development alongside LSM for decades, and perhaps even prior. Individuals choose to pursue mining above all other opportunities available in rural environments (Hilson, 2010; Hilgert and Perks, 2010; Perks 2011).

However, given the entrenched LSM extractive model in SSA, ASM floats on the periphery of the policy debate and thus practically operates largely within the informal economy. Despite some attempts to find a policy space for ASM in national mineral legislation, it continues by and large to occur outside effective national support, operating in parallel informal market spaces. It has thus often been termed *illegal*, and consequently must overcome a serious conceptual barrier to acquire assistance—whether by governments, NGOs or even the private sector (Perks, 2011; Hayes 2008).

Small-scale mineral economies in sub-Saharan Africa face several challenges where organised structures, such as a cooperative, may indeed assist: access to credit and capital, minimisation of transaction costs along the production and commercialisation chain, solidarity for improved workers' rights and social benefits, and establishment of fairer pricing. Indeed, these issues echo the challenges facing smallholder farmers. Policy debates to ensure these conditions for small-scale miners suggest that cooperatives may form part of a broader strategy to formalise this part of a mineral economy. Yet, few practical applications have been made and these experiences have not been shared widely.[9] In short, beyond the policy position that cooperatives may be one model for small-scale mining formalisation, little is known about how these structures function, and whether indeed their promotion in mining environments can increase participation and benefit for rural inhabitants.

A critique of the cooperative model when applied to mining

The International Cooperative Association (ICA) defines a cooperative as:

> *"An autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations, through a jointly owned and democratically controlled enterprise".*[10]

In short, cooperatives are considered "business enterprises owned and controlled by the very members that they serve".[11] Seven principles guide their operations: voluntary and open membership; democratic member control; member economic participation; autonomy and independence; education, training and information; co-operation among cooperatives; and concern for community. Whilst cooperatives exist (and have existed) for other smallholder export economies in SSA such as coffee and tea, it has received less attention with mineral commodities. This section asks: do small-scale mining environments exhibit characteristics and features akin to agricultural producing economies? How might a cooperative network model enhance our understanding of small-scale mining and its formalisation? Are there distinctions to be made between these two producing economies that merit some attention?

Increasingly producer cooperatives are recognised as one viable approach

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[9] See Levin and Turay (2008) and Maconachie and Hilson (2011) for Sierra Leone. An important International Labour Organisation (ILO) project was led in the Democratic Republic of Congo (DRC) though no final reports were made public. The work of Pact Inc. furthered elements of the ILO initiative in DRC but again no public documents are available. Thus whilst there have been some efforts made to support cooperative development in mining, the documentation at present is sparse.

[10] See www.ica.coop (Accessed 20th May 2012)

[11] See International Year of the Cooperative 2012: http://social.un.org/coopsyear/cooperatives-are.html (Accessed May 21st 2012)

towards catalysing a people-centred development in many parts of the world.[12] The World Summit for Social Development agreed to "utilize and develop fully the potential and contribution of cooperatives for the attainment of social development goals, in particular the eradication of poverty, the generation of full and productive employment, and the enhancement of social integration" (United Nations World Summit, 1995: Commitment 9h). Consequently, cooperative approaches in international development interventions are increasingly used in Africa by a variety of bilateral donors. Markelova et al. (2009) suggest that in recent years the focus on smallholder farming in sub-Saharan Africa has shifted away from questions of increasing productivity to increasing access to markets. An evident example is the focus in tackling food insecurity through cooperative formation and support with an emphasis on market access.[13]

Of particular comparative interest are the experiences of producing cooperatives that are export-focused. They tend to operate within similar market dynamics to mining and may thus display features worth noting. The export-oriented agricultural strategic network model generally involves two levels of actors: the producing members and its federative structures. The first provides production into the domestic market whilst the second commercialises the production for export. The latter acts often as the intermediary between an end buyer internationally and the rural farmer. It may negotiate prices for its members, and assume certain pre-export responsibilities on behalf of its members. This federative structure marks a significant departure from government marketing boards that, in the 1970s and 1980s, were the predominant actor in commercialising agricultural products in most African countries. Beyond these key actors, there are the transporters and other business entities that provide linkages

[12] The World Summit for Social Development held in Copenhagen in 1995, and the General Assembly resolution 51/58 adopted in 1996, recognized the importance of cooperatives in the people-centred approach to development.

[13]In most recent years, one has witnessed cooperative strategies in tackling food insecurity in East and Central Africa. In particular, the United States Agency for International Development (USAID) spearheads a variety of regional and national development assistance programs aimed at increasing agricultural productivity and access to markets for smallholder farmers whereby the cooperative plays a central catalysing role.

across the trade chain.

This strategic network model displays similar actor connectivity to small-scale mining. Whether through cooperatives or other models of small-scale mining, the trade chain depends on a variety of actor interventions at successive stages. Small-scale miners extract minerals in a given environment, and generally aggregate them through middlemen and transporters towards the export level. Whereas in some countries such as DRC and Zimbabwe, these trade chains host a multiplicity of actor interventions, in other countries, such as Burundi and Rwanda, the number of actors is reduced. In mining cooperative network models, the features as described above for export-oriented agricultural commodities are quite similar. Individual mining cooperatives rely on the federation to negotiate buying relationships, and depend on the federation for commercialisation to outside buyers, and eventual transfers of payments.

Yet, agricultural producing cooperatives do not operate in isolation. Beyond their own network configuration, competing actors influence the overall environment, thus directly and indirectly affecting smallholder participation. These actors may include competing producers and exporters, creditors and financiers, in addition to government agencies concerned with setting relevant legislation. As concerns mining, it is important to note similar actor dynamics. The legislative environment promoted by government, and the influence of competitors and financiers may indeed promote a unique start-up environment for mining cooperatives, contrary to smallholder farming movements. How might these differences engender specific participation and benefit outcomes?

First, ownership over mineral endowments are legislatively entrusted in the hands of the state. Thus endowment access requires first and foremost a transfer of ownership—via titles, deeds or permits—to the mining cooperative. Whilst policy tensions remain between private-property land rights and customary land rights, historically land has resided in one form or another in the hands of rural populations. From the outset thus smallholder farmers may not face the same legislative barriers. Depending on the legislation, mining permits may be costly, requiring outside financing—often outside formal banking institutions—to assist in its start up. More often than not, mineral traders provide that financing, creating governance influences within the cooperative, as we will see below. Second, mine development typically requires capital investments on much lager scale than rural smallholder farming. This capital investment must furthermore be galvanised by high labour beyond the household level as is typically for agriculture. Third, most mining codes apply the same taxation rates for both large-scale and small-scale mining operations, potentially placing cooperatives at a disadvantage. Recent efforts by Burundi to differentiate scale of activity, and thus applied taxation, represents one hopeful policy measure in favour of nurturing a diversified mining landscape.

All these factors create a set of particular dynamics that may differentiate cooperative mining from other cooperative producing economies. Due to limited access to investments and the organisation of labour, cooperatives both contend with power hierarchies, and conversely create their own social hierarchies. Thus whilst it is true that cooperatives "aggregate the market power of people", in the case of mining it may not provide them with the means to overcome "powerlessness" as suggested by Birchall and Hammond Ketilson (2009:10). In fact, the assertion that cooperatives adopt principles of autonomy and independence can be misleading when explored within the formalisation agenda for small-scale mining. Often due to the financial constraints posed on small-scale mining activities, autonomy and independency is limited.

For example, in Burundi, new mining legislation has forced direct relationships between buyers, commonly referred to as *comptoirs*, and artisanal miners. It requires all artisanal miners to be registered in associations and to demonstrate a long-term buying relationship to a Burundian *comptoir*. This legislation, whilst intended for greater transparency of the supply chain, has in effect forced artisanal associations into rigid relationships with powerful traders. These *comptoirs* organise associations, pay their registration fees, and supply equipment as needed, whilst they also maintain membership in the association, often as the president. Yet given the limited means with which cooperatives can secure and develop a concession on their own, these relationships aid the emergence of small-scale mining participation. It is thus complicated to entirely denounce the trader-cooperative relationship: in the absence of other credit facilities, traders and buyers provide vital capital, and do provide access to markets. It is rather the opaque manner in which they participate in a cooperative's governance that needs to be considered and clarified.

Beyond the trader-cooperative relationship however, social hierarchies emerge within the cooperative itself. Fonteneau et al. (2011) discusses these hierarchies with reference to governance and management, including relationships between members and workers. As discussed earlier, small-scale mining relies on high volumes of labour due to rudimentary mining technology. As a result, cooperatives hire additional labour, beyond its membership, to carry out their productive activities. An operational model emerges in which members simultaneously govern and manage the cooperative's activities, whilst equally employ labour to physically perform mining. Due to their casual nature, they may not receive worker benefits such as health insurance or pensions. Thus whilst cooperative members themselves are moving into the formalised economy, a good number of labourers remain still in the informal economy. This impacts a critical formalisation dilemma for small-scale miners: decent labour conditions. Whereas Schwettman (2006) proposes that cooperatives can support the ILO's Decent Work Agenda (DWA)[14] through the Rwanda case study, we shall explore this possibility when juxtaposed against the labour model dependent on swathes of informal miners.

In conclusion, this section provided a very exploratory reflection on the cooperative when applied to small-scale mining formalisation. It positioned an analysis of mining cooperatives within the concept of the social economy, and producing cooperatives in particular. It conceded that the network surrounding the cooperative itself displays similar characteristics to that of the agricultural export-

[14]Decent Work Agenda (DWA) comprises four key strategic objectives: fundamental principles and rights at work and international labour standards; employment and income opportunities; social protection and social security; and social dialogue and tripartism. See: www.ilo.org (Accessed 2nd June 2012)

oriented cooperative. Yet it made some distinctions in applying producing cooperative models to the context of mining due to the entry barriers faced by small-scale miners. It raised the implications of these barriers by way of the power and social hierarchies that commonly emerge in small-scale mining environments. It raised questions concerning cooperatives' promotion of key principles—such autonomy, independence, and decision-making—in addition to their promotion of fair and decent labour. From this brief backdrop of small-scale mining formalisation, and the role played by cooperatives, we shall now turn to the case study of Rwanda.

Background: Rwanda's mineral sector, and the cooperative network model

Since 2004, the Government of Rwanda (GoR) has been pursuing significant mineral sector reforms. These reforms have been described by its Ministry of Natural Resources (MINIRENA) as transformational: from a nationalised to privatized industry, in addition from a regionally trade-oriented economy to domestic extractive economy (MINIRENA, 2009). One aspect of reform targets further *formalisation* of small-scale mineral producers. Part of the policy's justification for ASM formalisation states that through effective private property rights and organizational representation, ASM could access better market opportunities for development, including capital financing (MINIRENA, 2009).

This section establishes the current mining cooperative network model within Rwanda's mining history. It is a history often described broadly by four governance models rooted within specific time periods:

1) "Les colons": foreign operators (circa 1920s -1974);
2) *Société Minière de Rwanda* (SOMIRWA): a post-independent joint-venture operation (1974-1985);
3) *Régie d'Exploitation et de Développement des Mines* (REDEMI): the timid nationalised structure (1989-the early 2000s)
4) "Privatisation": a foreign-investment led model (2004-present day)

Whereas these models emphasise the predominant roles played by the state and the private sector, small-scale miners have existed since independence, either as cooperatives or small-scale operators. Furthermore they provided the bulk of labour to the predominant models above. Yet their contribution to the sector's growth is not well understood, beyond labour figures, even today. One might even argue, as we shall see below, that independent small-scale mining models are not considered effective mineral governance vehicles by other Rwandan mining stakeholders today; rather they are considered the source of significant problems such as environmental pollution, fraud and theft, and social ills.

Yet, cooperatives were not always viewed as such. At one time, cooperatives were considered a more viable arrangement for fostering national participation and benefits. By reviewing its mineral governance history, this section asks: what was the predominant model used? What impacts did it engender on the small-scale miners? How did then the cooperative movement emerge to address these impacts?

Early days

Whilst the cooperative movement was introduced to Rwanda in the 1920s under Belgian administration (Develtere et al., 2008), it did not occupy the mining landscape until independence. In 1963, the Government of Rwanda (GoR) cancelled the earlier 1937 Belgian administrative legislation restricting national participation.[15] By 1965, individuals had organised in mining associations (pre-cooperatives). In1966, Rwanda adopted new national cooperative laws to govern voluntary organisations, including mining cooperatives. In comparison, Mali introduced mining cooperative legislation in 1970 (Keita, 2002), and Tanzanian mining associations were legislated in 1987 (Fisher, 2007). In Rwanda, between 1964 and 1973 over 141 associations with roughly 2,600 members held 360 mining permits. Government intended for these associations to evolve into cooperatives capable of generating capital for further exploration and exploitation investment (Services des Mines, 1975).

Early entry by Rwandan nationals into mining superseded Zaire (present day DRC), who introduced its mining liberalisation policy, including national participation, as late as 1983. Former British colonies of Tanzania and Southern

[15]A national had to have a 'carte de mérite' in order to exploit. This card could only be obtained if the individual was: 1) proficient in one of Belgium's two national languages; and 2) capable of performing basic math skills (Uwizeyimana, 1986)

Rhodesia (present day Zimbabwe) had legislated mining rights to "nationals", with Southern Rhodesia doing so at the turn of the nineteenth century whereas Tanzania at the end of the colonial period (Fisher, 2007). What might explain these graduated legislative changes?

The size of potential reserves proportionally influenced foreign investment, and thus impacted on notions of ownership, access, and ultimately national participation. For instance, Southern Rhodesia's gold deposits had disappointed prospectors migrating north from the Transvaal, leading to an early opening up of national participation. The Rwanda-Urundi protectorate's tantalum (coltan), cassiterite (tin) and wolframite (tungsten) deposits paled in comparison to known reserves of their westerly neighbour, the Belgian Congo, emphasising Belgian investment in the Congo as opposed to the Rwanda-Urundi protectorate. One may infer then that the smaller size and scope of potential mineral deposits facilitated earlier national participation in Rwanda, as it had done so in Southern Rhodesia, as reserves proved less attractive to foreign capital investment.[16]

Despite its seemingly pioneering legislation regarding national participation, Rwandan mining cooperatives were incapable of sustaining a strong presence due to capital constraints and legislative limitations. By 1974 most small-scale ventures had faded to the periphery of both mineral policy and practice (Bidega, 2006; Uwiyezamana, 1986). This coincided with the merging of interests between the Rwandan regime and the few remaining "*colons*" operations. A single company, SOMIRWA, was established in which the Government of Rwanda (GoR) held a 49% interest. The country's major mineral deposits were vested to this entity whereas secondary deposits were left for small-scale operators and some few cooperatives.[17]

In the beginning, SOMIRWA employed a direct labour model on the most important concessions whilst applying a sub-contractor model to secondary deposits. Yet as the company crippled under financial circumstances, the sub-

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[16]Such a reflection further challenges the predominant view held that ASM is an activity borne of poverty when in fact in certain contexts the types of geological placements and reserves in fact dictate the type of labour itself.

[17]My field research identified current cooperative members who maintained cooperatives during these years but these findings are outside the scope of this paper.

contractor model engulfed the majority of its operations. The sub-contractor model would have a profound impact on how successive regimes and private actors would undertake mining. It continues to operate across even the largest mining concessions today held by foreign investors, and to an extent even by cooperatives where former SOMIRWA miners are now members. It has left an inedible mark on the organisation of mining in Rwanda.

The sub-contractor model applied a predominant strategy of favouring low capital inputs on the part of SOMIRWA, assumed no worker responsibility, and capitalised on high rural labour availability. It did so by loosely vesting mineral access to local entrepreneurs and landowners, referred to as *exploitants* or *sous-traitants.* These *exploitants* or *sous-traitants* organised small-scale labourers in working teams who were paid according to their production (Bidega, 2006). In some few other cases, SOMIRWA employed *sous-traitants* directly who worked a particular concession and performed all stages of extraction, washing, and drying themselves.[18] This second strategy closely mirrored the operating model used by *les colons* during the protectorate era, and was used on SOMIRWA's more profitable concessions.

The SOMIRWA sub-contractor model was deeply problematic on several fronts: no exploration or development permission granted to *exploitants* to advance beyond rudimentary surface mining; a complete dependence towards SOMIRWA on the part of the *exploitants* for necessary capital and material inputs; a shirking of labour responsibilities by SOMIRWA towards its *exploitants*; and SOMIRWA's monopolistic control held over pricing and buying that worked most often in favour of this entity, and almost always against the small-scale labourer. An opaque pricing system,[19] coupled with time delays in making cash payments, led to the proliferation of existing parallel buying markets. By the early 1990s, REDEMI (who inherited all SOMIRWA's operations) estimated that upwards of 20-30% of its production was being sold in "illegal" markets.

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[18]Interview: Informant 14; Company "A". 22nd May 2012.

[19]Whereas today in Rwanda, buyers establish prices according to both weight and grade of mineral, SOMIRWA had not established a uniform system as evidenced by interviews.

However, sub-contractor arrangements were not novel to a post-independent Rwanda: they had existed in several neighbouring colonial environments (Roberts, 1986), and are still used today in several small-scale mining environments such as Sierra Leone (Zack-Williams, 1995; Hilson and Maconachie, 2011), Tanzania (Chachage, 1995; Fisher, 2007), and Uganda (Hinton, 2005; Siegel and Veiga; 2009). What distinguished its practice in Rwanda during the time of SOMIRWA and REDEMI was its use by a large mining entity. For example, sub-leasing in Uganda occurs on small-scale concession titles. Diamond "tributor-supporter" relationships in Sierra Leone operate in the small-scale sector. Pit bosses in Tanzania work the concession titles of small gold investors. Yet Rwanda's example demonstrates, in both the case of SOMIRWA and REDEMI, two entities that held a virtual monopoly over the country's concessions, and made little efforts to progress from high manual labour techniques to semi-mechanised or mechanised mining. Instead, these entities acted as *de facto* mineral traders.

One must consider the scale of these entities outreach in the country with mineral depots and treatment sites in key mining areas. There were substantial infrastructure and salaried workers to maintain at these installations and processing centres. Unfortunately, during times of commodity crises, or broader national economic crises, these entities did not look to adjust their scale of operation. Instead, their prime strategy lay in adjusting downwards the buying prices offered to their subcontractors.[20] More often than not, the trickle down effect of diminished returns hit the small-scale miners, who were in effect casual labourers. Rwanda's failure to galvanise its industry over the decades is significantly related to this skewed business model, in which an inflated payroll and benefits afforded to SOMIRWA salaried workers were never revisited despite donor demands; furthermore despite donor recommendations to reduce payrolls and concession holdings, REDEMI launched full-scale operations following its purchase of SOMIRWA.

Despite a slightly different legislative and operating environment, the sub-

[20] Interview: Informant 1. Cooperative "A". 24th April 2012.

contractor arrangement in Rwanda undermined the position of small-scale miners as raised in the case of Uganda and Tanzania. It perpetuated a situation in which small-scale miners occupied a nebulous space between formality and informality as seen in Tanzania (Fisher, 2007). It left small-scale miners with little recourse in the formal market to acquire fairer benefits from their labour, which in turn propelled periphery-trading markets where fairer prices were obtained. It also led to an undercapitalisation of the mining title itself as raised in Uganda (Seigel and Vega, 2009). In fact, the sub-contractor model in Rwanda was replete with similar characteristics and governance challenges akin to other past and present models explored in Sierra Leone, Tanzania and Uganda.

Consequently, in the early 1980s, the cooperative debate re-emerged within policy discussions.[21] By 1984, in a series of memos and travel reports addressed to the Ministry of Natural Resources, key international partners[22] expressed concerns about the real benefits afforded to small-scale labourers under the sub-contractor model: the prices being paid to small-scale miners and the effective lack of social responsibility assumed by either the *exploitants* or SOMIRWA towards general health and safety issues. It is important to note discussion's introduction at the time as it diverged to a degree from the first wave of legislative mining reforms occurring in the 1980s under World Bank influence: it did not echo the archetypal model promoted of outright privatisation.[23] Rather, it was nuanced. It proposed *privatisation* of SOMIRWA but simultaneously *re-invigoration* of an independent cooperative space. In effect, whilst further bilateral loans to Rwanda's mining sector were predicated upon some structural adjustment measures, they did not favour exclusively the introduction of foreign investment. Rather the policy appeared to promote a diversified mineral governance environment in which small-scale and

[21]It is important to recall that despite the predominance of the sub-contractor arrangement, some small pockets were still operating under cooperative control. Unfortunately there is little data available on the scale and behaviour of this model during SOMIRWA's time.

[22] World Bank, European Economic Community and Belgian Ministry for International Cooperation and Development officials

[23] Campbell (2003) described three phases of liberalizing reforms in sub-Saharan Africa that entailed de-nationalisation of mining parastatals, and the subsequent opening up of key African environments to significant foreign investment. These reforms formed part of the broader structural adjustment programs (SAPs) being led by the International Monetary Fund, and the World Bank.

larger-scale operations might co-exist. Could one infer then that bilateral donors considered the cooperative a more 'socially just' model for effective national participation?

The emergence of a federative cooperative structure

In 1986, with assistance from a SYSMIN loan under the Lome II Convention, a national cooperative structure was formed: *Union National des Coopératives Artisanales Minières et Rwandaises* (COPIMAR). Eight of its ten founding members still operate today. It is interesting to note COPIMAR's entry into two parallel landscapes, the national cooperative movement[24] and the mining sector specifically. It is of further interest to note COPIMAR's relative success in the early days as Develtere et al. (2008), Mukarugwiza (2010) and Wanyama et al. (2009) raise the tendency towards government- and/or elite control of federative structures in the 1970s and 1980s. In fact, COPIMAR held buying and export rights akin to REDEMI. Cooperatives thus had secured their own export market. Rwanda's marketing policy further differed from the tendency in Africa at the time towards government-controlled marketing boards for key export commodities. Pottier (1993) describes the reluctance of the Rwandan regime to adopt government-controlled marketing boards for agricultural. His findings may offer policy evidence to understand a similar absence of government in the case of minerals.

In fact, COPIMAR demonstrated many of the characteristics and principles promoted today concerning national cooperative federations. It was a profit-making entity independent of the state: the only intervention by government lay in its negotiation of the start-up loan. All cooperative members were in theory provided with shares that were non-transferable and gave them decision-making powers in the General Assembly. It focused on access to training and education as pillars for improving cooperative performance. Indeed, it proved sufficiently fruitful in its first years, albeit aided significantly by the devaluation of the Rwandan Franc (COPIMAR, 1991).

[24] The two defining pieces on cooperatives in Rwanda (Mukarugwiza, 2010; Government of Rwanda, 2006) make no mention of it.

When REDEMI launched its activities in 1989 following the collapse of SOMIRWA in 1985, two predominant models of small-scale mining existed thus in Rwanda: the cooperative (assembled under COPIMAR) and the sub-contractor (used by REDEMI). Records indicate that by the end of 1990, 2460 small-scale miners were working under the COPIMAR structure with upwards of 7,500 in low agricultural seasons (COPIMAR, 1991). By comparison, REDEMI reported at the end of 1990 2,798 permanent employees with 148 sub-contractors (REDEMI, 1991). Though no specific records indicate the total number of small-scale miners found under the 148 sub-contractors, a cautious calculation of 30-person working teams[25] would put the number at 4,440. Thus the mining industry at that time may have provided over 10,000 direct employment opportunities, with possibly upwards of 15,000 in particular off-farm periods. Roughly half of this labour was occurring through cooperative structures.

Following the adoption of an extensive mineral reform agenda in 2004, COPIMAR was eventually re-named the *Fédération des Coopératives Minières au Rwanda* (FECOMIRWA) in 2009. Whereas Mukarugwiza (2010) identified 22 cooperatives operating in the mineral sector in 2008, in 2012 FECOMIRWA figures state 29 registered cooperatives with several more under registration at present. In 2011, these 29 cooperatives had 749 members, with a further 4,419 persons hired as either permanent or casual labour.[26] Their labour represents roughly one-quarter to one-fifth of the mining sector today.

The Cooperative Network Model: members' perceptions of participation and benefit

In the previous sections, the past mining models of Rwanda were presented with a particular emphasis on how small-scale miners fared in the process. We raised in particular the constraints of previous models in promoting security of tenure for small-scale operations, in providing transparent and fair pricing

[25]Interviews and some reports tend to place working teams at this average figure. This is not conclusive however.
[26] Figures obtained from FECOMIRWA as of 20th June 2011.

arrangements for small-scale miners, and lastly in addressing workers' health and safety. Has the more recent efforts under the mineral reform agenda in Rwanda to re-invigoration of the cooperative model provided greater opportunities for small-scale miners to participate in, and benefit from, their mineral endowments?

Solidarity: "the ideas of one person give nothing"[27]

Cooperative interpretations by interviewees focus strongly on the notion of solidarity. When asked what a cooperative meant to them, common representations offered were: "joining forces", "working like a group", "finding strength", "common work", and "coming together for a common purpose". Solidarity is further interpreted within two arenas: the physical workplace and the extended social environment—household and "community".

First, the cooperative provides a perceptibly more structured vehicle for organising mining activities. This in turn brings about a sense of "professionalization". [28] Interviewees repeatedly referred to the independent manner in which small-scale miners worked the sub-contractor model(s) described in the previous section. "Independent" often accompanied synonyms such as "disorganised" or "chaotic". The landscape of labour organisation painted by interviewees was one in which, "anyone could try their chance at mining".[29] Interviewees corroborate evidence in archival records regarding the varying experiences under the sub-contractor arrangements, where rules and regulations were seemingly applied differently across various regions. The cooperative, thus, comes to represent a more organised vehicle for mining where members actively participate in its decision-making. A very striking feature of the cooperative is the control it offers to members: "We are no longer workers. We are leaders".[30]

Second, interviewees associated solidarity with a capacity to resolve personal problems and exemplify "development" in their immediate social

[27]Interview: Informant 14; Company "A". 23rd May 2012.
[28]Interview: Informant 3, Cooperative "A". 24th April 2012.
[29]Interview: Informant 11, Cooperative "C". 9th May 2012.
[30]Interview: Informant 15; "Cooperative D". 28th May 2012.

environment.[31] Its financial model of shared savings allows for greater capital accumulation. This capital forms the basis of a credit facility for members to advance some personal or household goals. Three common goals elicited by interviewees were: buying cows,[32] buying land to diversify subsistence farming, and building a solid house.[33] Cooperative B interviewees share their experience of dedicating its first round of profit sharing to buying each member a cow. Furthermore, one interviewee expressed the cooperative's responsibility to role model "development" in their immediate environment by being "clean".[34]

In fact, due to the nature of small-scale mining in Rwanda—hillside-based and in which miners generally reside in the communities adjacent to mines—their contributions to local development are readily observed. This differs significantly from a good number of ASM countries in sub-Saharan Africa where miners migrate long distances to mine and thus do not generally re-invest their earnings into the direct mining environment. This permanency of mine labour in adjacent villages provides cash injections for spill over services such as restaurants, bars, and construction, to name but a few. However, no attempts have been made yet to assess the scale of contribution thus mining cooperatives may make the local economy, and thus to "development".

Access to prices and markets

As described earlier, the cooperative model cannot be analysed solely from this level of actor alone. The federation plays a critical role in addressing other benefit issues raised in the previous section. In particular, the federation provides market access, and related to this, fairer pricing and timely payments. This is another striking finding emerging from the interviews. Again, such interpretations of the cooperative network model are sharply contrasted against the members' experiences under previous mine models.

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[31]Interview: Informant 7. Cooperative B. 1st May 2012.

[32]Cows are an important sign of wealth in many Rwandan communities still today. Most interviewees measured their buying power gained from cooperative mining against the market price for a cow.

[33]Solid house is described as one with proper roofing such as tiles as opposed to straw.

[34]Interview: Informant 7; Cooperative "B". 1st May 2012. The interviewee defined "clean" as dressing properly and having an outhouse.

Mineral price determination in a 'liberalised market' typically hinges on two criteria: quantity of production and its quality.[35] Whilst the London Metals Exchange (LME) controls international mineral prices, domestic markets do play a price determination role by offering competitive prices to capture greatest production. Unlike other country experiences with marketing boards, successive Rwandan regimes never played a price-setting role. As seen in the previous section, SOMIRWA and then REDEMI played this role that, due to inefficiencies, often produced unfair pricing for small-scale miners. Interview evidence points to historical inconsistencies in pricing under the SOMIRWA and REDEMI models.

At present, Rwanda has a "liberalised" domestic mineral buying and export market evidenced by the multiplicity of buyers and exporters present in Kigali. Whilst in principle cooperatives are required to sell their minerals to FECOMIRWA, the presence of competing exporters allows for some price negotiation powers for cooperatives. Interviewees cited tactics such as threatening diversion of production to other Kigali exporters in addition to referencing prices offered by competing exporters. These tactics serve to ensure the best price offer from FECOMIRWA. As FECOMIRWA relies solely on cooperative production, it does adjust on a daily basis its offer to cooperative members in a bid to remain competitive in relation to other exporters in Kigali. Interviewees concede that federative cooperative structures (COPIMAR previously and FECOMIRWA presently) play an important role in assuring fair pricing for their labour. This is contrasted against interviewees' recollections of SOMIRWA when, as one interviewee claimed, "we worked for free".[36]

Access to endowments

Strikingly, Rwandan mining cooperatives appear to have no capital provided by outside traders or financiers. All cooperatives interviewed provided start-up capital by the members' themselves. In some cases, members mined previously

[35] Quality refers to the grade of the mineral supplied, meaning the percentage of a given substance in an ore. The higher the percentage, the purer the mineral, and thus the more valuable it is.

[36] Interview: Informant 1. Cooperative "A". 24th April 2012.

under SOMIRWA or REDEMI, bringing some savings with them; yet many members crossed over from other occupations such as farming, teaching or local trade, bringing whatever small capital they had to the cooperative. Accordingly, Rwandan cooperatives emerged with some level of autonomy and independence as compared to the Burundi experience described earlier. Furthermore, in Rwanda's case, founding members represent a diversity of social and economic actors. As Fonteneau et al. (2011) suggest, such diversity can significantly increase economic stability and sustainability of a cooperative.

Thus it is the members' capital itself that facilitated access to endowments with support from decentralised mine legislation for permit acquisition. The process vests identification of ground with private actors—whether companies, independent operators or cooperatives. Members' interviewed had negotiated access with the land owner, either buying the land outright or creating a leasing arrangement—often determined by a percentage of production delivered on a monthly basis in case to the land owner.[37] The cooperative then applied for the permit at the sector level.[38] Once approved, it is forwarded onto the District and then on to the Geology and Mining Department (GMD) in Kigali. No interviewee raised the costly nature of the permit process as a barrier to entry unlike in Zambia (Kambani, 2003), Uganda (Seigel and Veiga, 2009), and Ghana (Hilson and Potter, 2003). In the case of Rwanda, the ease of entry for cooperatives through government mining legislative, coupled with their own capital for initial investment, helps to explain the considerable participation the sector galvanises, and the relative independence cooperatives exert over their own activities.

Access to credit

The major challenge for Rwandan cooperatives is achieving an economy of scale. Whilst FECOMIRWA provides cost-shared treatment and marketing services for its cooperative members, individual cooperatives struggle with two inter-related challenges: capital and technology. As Seigel and Veiga (2009) point out in their

[37] This arrangement is being outlawed by new mining legislation.
[38]The sector is the lowest level of Government in Rwanda.

analysis of Uganda's small-scale operators, the absence of these two pre-conditions leads to an "undercapitalisation" of mining assets. Seigel and Veiga (2009) assert that, in the case of Uganda, the only option left for a small-scale operator is to sell its title to a larger mining company. This scenario does not exist, however, in Rwanda due to various constraints. It is thus worth considering how then Rwandan mining cooperatives address limited credit access, if at all, and the role of the federative structure in securing access, if at all.

At present, cooperatives combine their savings along with punctual loans from FECOMIRWA to advance their operations. In the case of the former, cooperative members identify the necessary work for mine development, and agree on the investment to be financed through their mutual savings. These savings result from a fixed quota on total production returns that is agreed by members, and transferred in cash to the cooperative's bank account after payment from FECOMIRWA for its minerals supplied. Of the cooperatives interviewed, the quota per member ranges from 2-10% of total production.

In the case of the latter, a cooperative may seek a loan from FECOMIRWA depending on the nature of the proposed investment. Loans used by interviewed cooperatives included: hiring of geological services, hiring of consultants to carry out environmental impact assessments, and infrastructure investments to improve environmental standards. The loan is paid off through future mineral delivery, by simply deducting a fixed amount from each production supply as agreed between FECOMIRWA and the cooperative. Loans have been limited so far due to FECOMIRWA's financial capacity. However, FECOMIRWA most recently secured a line of credit from a local bank in Kigali that may make larger loans possible.

A future source of credit may come from rural banking institutions. The Rwandan Cooperative Agency is furthering cooperative formalisation through banking. Cooperatives, of all nature, are urged to use rural banking facilities such as the *Banque Populaire* and Savings and Credit Cooperatives (SACCOs) to build up credit opportunities. It should however be noted that a major complaint across the sector—whether from more established mining operators or the smaller cooperatives—is the lack of experience by Rwandan banks in funding mining ventures. As one small-scale mining operator in Kigali noted, whereas banks will provide high credit opportunities for rural agricultural they are yet to diversify into mining.[39]

This lack of credit facilities is a major crux to cooperative development. It does mean that undercapitalisation is occurring. All cooperatives interviewed raised credit constraints as the key priority to be tackled by their federation and the government. Yet the Revised Mining Policy of 2009 has made no strides in this regard. Whilst it had committed to establishing funds and credit facilities specifically for the smallest operators, no initiatives are evident as of yet. The impact of squeezed credit sources is profound. First, it perpetuates rudimentary surface mining techniques dependent on swathes of casual labour. This hierarchy produces its own governance and labour dilemmas. Cooperative members retain control and decision-making, and re-distribute benefits amongst themselves; whilst the labourers gain daily salaries depending on activities performed, and by and large do not receive health insurance or other social benefits. Can these types of labour models claim thus a cooperative spirit? Or as remarked by Fisher (2007) in the case of Tanzania, do such arrangements thus perpetuate informality?

Second, the perpetuated rudimentary mining model engenders considerable production losses as at best cooperatives in Rwanda may be recovering 30% of their minerals mined. This results from lacking technology such as sluice boxes. In their absence, cooperatives make remarkable use of the natural landscape to filter minerals from other waste but lose incredible sums of production in the process. In effect, mining cooperatives are operating well below their potential and continue to apply a labour model that is contrary to the principles of a cooperative itself. It further questions to a certain extent how far reaching are participation and benefit in the model: are cooperatives bringing significant amounts of labour into the formal economy, and thus increasing their benefits? Or are cooperatives in fact perpetuating some of the same constraints experienced under previous mine models? Further research would need to focus beyond cooperative members alone

[39]Interview. Kigali. 30th May 2012.

to record experiences of the casual mine labourers working under these structures.

The final analysis: Rwandan cooperative caught in a policy tension

The GoR has adopted aggressive growth targets in its Vision 2020. It aims by that date to achieve Middle Income Country (MIC) status with mineral growth as a key pillar to its success. 2020 targets include 240M$ in annual mineral export revenues and 20% of national GDP emanating from mining. This represents at least a doubling of current exports. It is ambitious as only most recently are slightly more reliable domestic mineral production figures emerging.[40] With new mining actors coming on board, and some investments made, it is difficult to predict what might be the real potential of Rwanda's domestic mining industry, and thus its contribution to growth through exports.[41] Yet simultaneously, Vision 2020 promotes its rural development agenda by focusing on the cooperative movement, and its spill over effects on rural employment, especially with the youth. MINIRENA is yet to quantify the small-scale mining contribution to overall rural development though a timid analysis from this research suggests that mining cooperatives may be supporting the combined personal and household incomes of 25,840 persons nationwide.[42] This does not include the subsidiary services provided around the mining activity itself.

The mining cooperative suffers from this export versus rural employment policy tension. In 2011, cooperative recorded production was around 400 tons[43] of cassiterite, coltan and wolfram, representing only roughly 6% of total national mineral production for that year.[44] [45] Thus whilst mining cooperatives provide

[40] Since at least 1996, Rwanda's domestic mining economy has often been accounted for simultaneously with re-export figures from neighbouring countries' minerals in transit.
[41]MINIRENA is conducting a study to unravel some of these figures but is yet to release any official data.
[42] This calculation is based on figures from FECOMIRWA of the total cooperative members and labourers (5168 persons) multiplied by a cautious household figure of 5 members.
[43] This production figure is an estimation as December 2011 figures were not included. Of further note is that cooperatives were not selling for a certain period to FECOMIRWA and thus their production would be recorded with other exporters. It is thus a cautious estimation of their potential 2011 production.
[44] National Statistics office declared 6,681 tons of combined national production for 2011.

resounding employment, their contribution towards Rwanda's mineral exports appears small. On a purely production-export basis, cooperatives, at present, do not necessarily constitute a significant force for growth. How does this growth focus in the Vision 2020 then impact the future of small-scale mining efforts in Rwanda, such as the cooperative?

In a recent meeting in Kigali, the Director of GMD conceded that at present "mining is subsistence but this is not where we want to be".[46] The mine manager at one of Rwanda's largest producing mines pointed out the policy tension when admitting that the mine could continue employing high labour but they face significant government pressure to increase production. This increase can really only be achieved through mechanisation.[47] Will there thus be an inevitable favouring of a foreign-led, mechanised model in Rwanda as seen in other sub-Saharan African environments?

By focusing on indicators beyond export growth, this paper attempted to show how cooperatives might in fact be widening participation and benefit in mining. Though it equally raised concerns about the consequences on formalisation of the small-scale mining economy as far as labour conditions are concerned. By using a network model, this paper showed how an appreciation for small-scale mining contributions extends beyond simply the miners themselves to include other important actors such as federations and cooperative agencies in fostering participation and benefit. It furthermore reflected on the specific context of Rwanda in facilitating cooperatives and how certain pre-conditions such as member capital and appropriate legislation have fostered an environment conducive to small-scale mining participation. Yet as with other ASM countries raised, the experience of Rwanda demonstrates how without further concerted efforts to make resources

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[45]By comparison, the cooperative contribution in 2011 amounts to roughly half of the entire 2011 Burundian production (both cooperative and private sector) for cassiterite, wolfram and coltan based on official production statistics obtained from the *Direction des Mines et Carrières* in Burundi by the author.

[46] Mining Sub-Sector Working Group: Developing Strategies for EDPRS II. Le Printemps Hotel Kigali, May 29th 2012.

[47]For instance, a simple switch to mechanized transport of minerals from the tunnels to the washing site would eliminate 5 jobs. With 17 operating tunnels, this would eliminate 85 jobs on one mine site alone. Site visit. 17th May 2012.

available to cooperatives, they may stagnate through undercapitalisation.

Whilst still very exploratory in nature, the paper raises some areas for further research that may assist current African governments in both quantifying and qualifying the contributions a formalised small-scale mining industry may make towards the overall development agenda in mineral-endowed countries. By articulating these contributions in policy discussions, the current resource nationalism debate may widen its perspective of how mining occurs in Africa, and thus offer up some further innovative policy approaches towards mineral governance.

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