

Livelihood diversification and the expansion of artisanal mining in rural Tanzania

Drivers and policy implications

Beatrice Kwai and Gavin Hilson

Abstract: *This paper provides an extended analysis of livelihood diversification in rural Tanzania, with special emphasis on artisanal and small-scale mining (ASM). Over the past decade, this sector of industry, which is labour-intensive and comprises an array of rudimentary and semi-mechanized operations, has become an indispensable economic activity throughout Sub-Saharan Africa, providing employment to a host of redundant public sector workers, retrenched large-scale mine labourers and poor farmers. In many of the region's rural areas, it is overtaking subsistence agriculture as the primary industry. Such a pattern appears to be unfolding within the Morogoro and Mbeya regions of southern Tanzania, where findings from recent research suggest that a growing number of smallholder farmers are turning to ASM for employment and financial support. It is imperative that national rural development programmes take this trend into account and provide support to these people.*

Keywords: *artisanal and small-scale mining (ASM); non-farm; poverty; Tanzania*

Beatrice Kwai is with the Mbeya District Council, PO Box 599, Mbeya, Tanzania. Gavin Hilson is with the School of Agriculture, Policy and Development, The University of Reading, Earley Gate, PO Box 237, Reading RG6 6AR, UK. E-mail: g.m.hilson@reading.ac.uk.

This paper provides an extended critique of livelihood diversification in Tanzania, with special emphasis on artisanal and small-scale mining (ASM) activities. In the past decade, ASM – rudimentary, labour-intensive activity that is semi-mechanized in the most advanced of states – has become an indispensable economic activity in Sub-Saharan Africa. In many of the region's rural areas, it is overtaking smallholder agriculture as the primary industry.

The International Labour Organization (ILO) has conservatively estimated that ASM provides direct employment to 13 million people worldwide, including 2.5 million men, women and children in Sub-Saharan

Africa (ILO, 1999). The industry is expanding rapidly not only in Tanzania, but also in Ghana, Zimbabwe, Mali and Sierra Leone. Few scholars, however, have attempted to explain *why* – a critical oversight, which, given the growing economic importance of ASM in the region, could have serious policy implications and impede efforts aimed at alleviating poverty. Specifically, clarification of *which* factors are propelling the expansion of ASM is imperative, as it puts policy makers in an improved position to address the concerns of rural people by fulfilling broader development targets such as the Millennium Development Goals and those inscribed within Poverty Reduction Strategy Papers (PRSPs).

Contextualizing the growth of artisanal mining in rural Tanzania

Over the past decade, many academics and policy analysts (for example, Labonne and Gilman, 1999; Fisher, 2007; Banchirigah, 2006) have argued that the growth of ASM is linked to economic hardship. This idea was first tabled at the World Bank-hosted *International Roundtable on Informal Mining* in May 1995, when delegates agreed that 'to a large extent, informal mining is a poverty-driven activity' (Barry, 1996, p 1). Recent research (Hilson and Potter, 2005; Sinding, 2005) has reinforced this and, more importantly, has helped debunk misleading stereotypes of the sector – namely, that it is comprised of exclusively chaotic activities carried out by illiterates and entrepreneurial individuals seeking to 'get rich quick'. Whilst feverish pockets of 'rush-type' activities have indeed surfaced in the likes of Sierra Leone, The Democratic Republic of Congo and Angola in recent years, for the most part, ASM has become an economic mainstay in rural Sub-Saharan Africa, providing millions of otherwise unemployed people with a source of income.

A spate of policy documents on ASM and livelihoods in Sub-Saharan Africa (for example, UNECA, 2003; USAID, 2005; World Bank, 2005) has since surfaced that refers to the sector as a 'poverty-driven activity', but most fail to explain *where* the people now heavily immersed in operations have come from, or to identify *what* caused their hardship and ultimately drove them to mine in the first place. All signs point to the recent expansion of ASM in the region being a result of adjustment lending. In the case of Tanzania, which has been the recipient of a steady stream of adjustment loans from the International Monetary Fund (IMF) and World Bank for much of the past two decades, the literature does not single out ASM *per se*, but does argue that structural adjustment programmes (SAPs) have fuelled the expansion of – predominantly non-farm – informal sector activities throughout the country: between 1990–1991 and 2000–2001, the number of households involved in the informal sector reportedly increased from 25% to 33% (Vavrus, 2005). The level of informal sector activity in Tanzania itself is particularly high, even for an African country, accounting for 58% of gross national income (GNI), compared with 43% in Uganda and 34% in Kenya (Sundaram-Stukel *et al.*, 2006). Despite having been repeatedly overlooked in critiques of livelihood diversification in Tanzania, ASM is by far the country's most important rural non-farm, informal sector activity, providing direct employment to well over 550,000 people and generating incomes for hundreds of thousands of others in downstream industries (see ILO, 1999; Kitula, 2006; Fisher, 2007).

As is the case elsewhere in Sub-Saharan Africa, the contention here is that two things have accounted for ASM's meteoric expansion in Tanzania over the past decade, both of which are linked to SAPs. The first is an influx of redundant public sector workers (after Banchirigah, 2006). When the country's lengthy programme of adjustment commenced in 1986, the government immediately pursued a policy of privatization and reconfigured many social services (Kaiser, 1996), which caused major lay-offs. Between 1990–

1991 and 2000–2001, there was a 15% decline in public sector employment (Vavrus, 2005), with civil service staff reductions in the order of 50,000 occurring between 1993 and 1995 (Malima, 1994; Gibbon, 1995). It is likely that many of the victims of these mass employment purges found themselves caught up in the major gold rushes unfolding in Bulyanhulu and Geita in the north of the country at the time. Dreschler (2001, p 64) was among the first to present this idea, arguing that 'the importance of small-scale and artisanal mining in Tanzania is . . . reflected by the fact that: it . . . resettles those who have lost their jobs in the cities due to the newly adopted structural adjustment programs'.

The second (and perhaps more significant) factor propelling the expansion of ASM in Tanzania is the reconfigured rural market that has surfaced under adjustment, which has stimulated a rapid exodus from the smallholder farming sector. Failure to take stock of this phenomenon critically could have serious policy implications in a country where the PRSP revolves heavily around agriculture. The perception in Tanzania, as with most countries in Sub-Saharan Africa, continues to be that 'the poor are concentrated in subsistence agriculture' (IMF, 2003, p 6). As Ellis and Mdoe (2003, p 1372) explain, in Tanzania, 'the poor possess little or no land, no cattle or goats, sell labour to others, have little formal education, do not possess bicycles, and have few nonfarm self-employment options'. Its PRSP, therefore, emphasizes improved delivery of support to rural smallholders, the country's *Third Progress Report on its PRSP* identifying a range of schemes now being promoted to offset rural hardship. This particular policy stance has in many respects what Ellis and Biggs (2001, p 441) describe as 'Small-farm focus', an approach that puts smallholders at the heart of development efforts, the underlying logic being that they 'could form the basis of agriculture-led processes of economic development'.

The pattern unfolding in many parts of rural Tanzania, however, calls for a radically different policy stance. In sharp contrast to observations made by Ellis and Mdoe (2003), a growing number of rural Tanzanians *are* turning to the non-farm economy for sustenance, a process that Bryceson (1996) refers to as 'de-agrarianization'. This livelihood diversification, or 'branching out' into the non-farm economy, is due to agriculture no longer being able to sustain inhabitants economically. Throughout Sub-Saharan Africa, the marked changes that have taken place under adjustment, including the opening up of crop parastatals to private sector competition, reductions in export crop taxes, the devaluation of local currencies, plus the removal of subsidies on vital crop inputs, have made smallholder farming unviable. Bienefeld (1995, p 103) sums up what has transpired in Tanzania:

'Most [farmers] face severe labour shortages and have only limited access to credit and other critical inputs. . . Poor, risk-averse households are therefore even less likely to invest in output expansion, and for those on the margin of subsistence this may be a very sensible response. . . This response destroys . . . chances of success since as the farmers fail to buy inputs for their farms, agriculture is likely to suffer and with this the country's economy at large.'

Whilst areas with high demands for farm inputs and favourable road networks have not been adversely affected by the consortium of private traders who now supply fertilizers, localities that are less accessible and/or that have lower demands for inputs have. In these locations, private traders are unable to distribute fertilizers profitably, which has led to a precipitous decline in smallholder farm production (Meertens, 2000). The inability of Tanzanian peasants to take advantage of the positive incentives provided by SAPs 'may explain their hostility towards policies that were supposed to serve their interests . . . [which in effect] serve the interests of traders, money lenders and large commercial farmers, most of whom are drawn from the newly expanding commercial elite' (Bienefeld, 1995, p 103).

Bryceson (2002) presents an exhaustive list of studies that underscore the diminishing popularity of smallholder farming as a source of livelihood in rural Tanzania, including analyses by Madulu (1998) and Mwamfupe (1998). The former argues that in Mwanza, over 50% of existing non-agricultural activity commenced in 1990 or thereafter, when the impacts of a liberalized agricultural market were first felt. The latter reports similar findings from Mbeya, where it was observed that only 31% of people wished to restrict themselves to farming. The study quotes one village elder as saying that 'school children used to assist in farm work after school hours, but today they dislike agriculture and are increasingly drawn into [other] trading activities'.

Peasant farmers' difficulties with accessing farm inputs led to a 28% decline in income in rural Tanzania between 1986 and 1998 (Jamal, 2001). The contention here is that ASM has helped to bridge this gap, providing an important source of supplementary earnings for rural farmers and, in many cases, a viable employment alternative altogether. Despite pointing to increased agricultural production as the solution to its growing poverty problem, Tanzania's *National Strategy for Growth and Reduction of Poverty (NSGRP)* is one of the few PRSPs implemented to date in Sub-Saharan Africa that identifies the growing economic importance of ASM in rural areas. It stipulates – perhaps incorrectly – that subsistence farming provides a source of livelihood to 82% of the population, but at the same time explains that 'artisanal and small-scale mining is increasingly becoming dynamic as it provides alternative economic opportunities to the rural communities' (Republic of Tanzania, 2005, p 7). Several studies (for example, Kitula, 2006; Fisher, 2007) underscore the growing importance of ASM as a source of livelihood in rural Tanzania, reinforcing Wuyts's (2001, p 417) view that 'while economic liberalization seems to have contributed new dynamism to village economies [in Tanzania], it certainly has not done so by the route of "classic" structural adjustment – incentive-led recovery of national agricultural exports'.

The discussion that follows touches upon the pattern unfolding in the Morogoro and Mbeya regions to shed further light on what is fuelling the expansion of ASM in rural Tanzania, and the implications of this growth for rural planning.

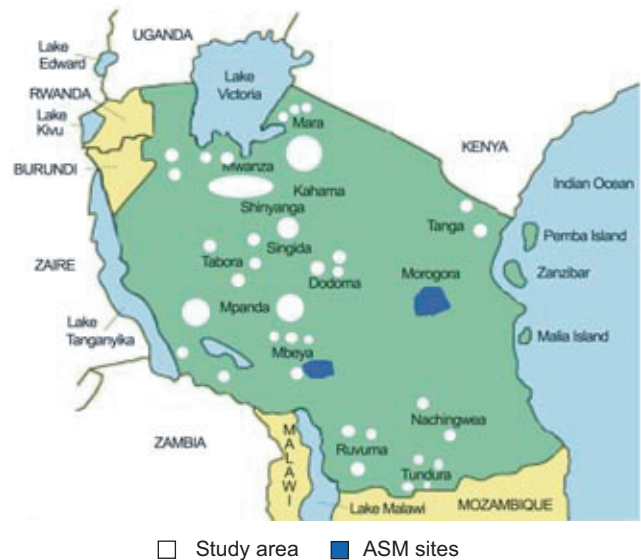


Figure 1. Locations of study sites.

Rural livelihood diversification and artisanal mining in Mbeya and Morogoro

Research is currently being undertaken by the authors on livelihood diversification patterns in the Mbeya and Morogoro regions of southern Tanzania (Figure 1), where ASM activities are rapidly on the increase. This section of the paper presents some of the initial findings from this research¹ carried out during the summer of 2007. Neither region is considered one of the country's ASM 'hot spots', but they nevertheless illustrate how the sector is becoming an important economic activity even in some of its less mineralized areas, in response to a deteriorated farming sector.

To date, the bulk of the analysis on ASM in Tanzania has focused on issues in communities in and around the Lake Victoria area – Geita, Mwanza and Mwanza – where there is also a significant large-scale mining presence. This has overshadowed some of the experiences from the 'lesser' mineral-producing areas such as Morogoro and Mbeya, where foreign-financed, large-scale exploration activities have only recently surfaced in response to the spike in the price of gold. The former is one of 20 regions on the Tanzanian mainland, Morogoro rural district being its most populous. It is the first region directly westward of Dar es Salaam, sharing the eastern border of the Iringa region. According to the 1988 national census, its population increased 24% in the period 1978–1988, with the estimated population in 2000 being in the range of 1,671,589 people. The latter is also situated in the south of the country. It shares Iringa's western border, and has a population of approximately two million people.

The poor state of smallholder farming and subsequent 'de-agrarianization' in both Morogoro and Mbeya have been well documented in the literature. The concern here, however, is that the PRSP has not properly taken stock of this, and that its main thrust – again, improving the viability of smallholder agriculture – may not be in the best interests of the people in either region. The case of

Morogoro is perhaps the most telling. The region has an estimated 5.9 million ha of arable land and, according to the 2002 *Household Budget Survey*, only 5% of its rural inhabitants are landless. But farm yields are generally low due to poor methods of production and the inability of smallholders to purchase higher-quality seeds, inorganic fertilizers and pesticides: only 20% of the land has been cultivated, principally by farmers working plots no larger than 1.2 ha. By extrapolating from findings gathered by Mung'ong'o and Mwanfupe (2003) in the Kilosa district, it becomes clear that only half of the region's plots are used for growing food crops, two-thirds of which are consumed locally.

It appears that smallholders in Mbeya are experiencing similar problems. Mwakalobo and Kashuliza (2002), who surveyed 180 randomly selected smallholders in the Rungwe and Mbozi districts, report that high input prices and a lack of credit inputs are crippling production on farms, which in many cases has led to the abandonment of farming altogether. A more recent study undertaken by Mwakalobo (2006) in Rungwe reports similar findings: that in response to price hikes in agricultural inputs, many farmers have switched to growing some crops that use fewer inputs, abandoning outright high-input, lucrative crops such as tea; and that, under reform, many have failed to increase the cultivation of some crops because of these economic burdens. In places such as Morogoro and Mbeya, where agricultural support and infrastructure are needed perhaps more so than in other regions of Tanzania, it is difficult to see how a PRSP process centred on 'bolstering' smallholder production is capable of raising the living standards of rural people beyond a subsistence level.

In both locations, progressive movement into ASM has been a popular response to poverty in the farming sector. Based on findings from selected interviews with miners, a division of labour has become apparent in both regions: on the one hand, smallholder farming is undertaken to fulfil the daily needs of the family (subsistence), and on the other hand, non-farm activities such as artisanal mining generate family income used to pay for household goods, children's school fees and transportation. For most frustrated smallholder farmers in Morogoro and Mbeya, the upsurge in artisanal mining activities has therefore been a blessing. The Mazizi and Charambe camps visited in these regions appear deeply rooted, and provide an array of income-earning opportunities for desperate people. Men, women and youths work as ore haulers, diggers, caterers, merchants, cooks and crushers, and many more work in the flourishing markets that have emerged alongside mining activities, selling second-hand clothing, cooked foods, fruit and various equipment. Within these regions, the ability of individuals 'to change positions in mining activities depending on the kinds of tools one acquires or capital' (Mwaipopo *et al*, 2005, p 63) enables those engaged to accumulate wealth rather quickly and support to their defunct farms.

The involvement of former civil servants and educated people in the sector, particularly in Mbeya, reinforces Dreschler's (2001) observation, and suggests that the poverty problem extends beyond the immediate localities. As one mine leader explained during an interview:

'I completed college about three years [ago]. I have been looking for any job unsuccessfully in the formal sector, and some sectors are still retrenching. I have no capital to start any business and my parents are poor [so] I have to work here [at the mines] so that they can get support from me.'

The upsurge in illegal gold-mining activities has not gone unnoticed. An official interviewed at the Ministry of Energy and Minerals in Dar es Salaam appeared sympathetic towards those engaging in activities in both Morogoro and Mbeya, explaining that, 'I believe these people are operating illegally because they have no options . . . although the regulations are in place to [control these activities] we should look at them. . .'. The problem, however, is that miners in both regions are *not* being looked at. In 2006, the Ministry awarded Douglas Lake Minerals, a Canadian exploration company, a prospecting licence to undertake work in Morogoro. The company has since acquired 51 prospecting concessions, and is negotiating 80 more leases. The development of these properties, along with parallel initiatives, would have catastrophic economic impacts on the tens of thousands of people working in ASM camps: already facing few prospects to farm, most would be cut off from their only source of livelihood.

The ASM activities in both regions must therefore be protected, supported and legalized. The best policy solution is a *mixed* approach – one that not only aims to support smallholder farming, but which also emphasizes the promotion of an assortment of non-farming activities – foremost, ASM. Yet, the current policy agenda for the most part does *not* prioritize the development of *legalized* artisanal mining, and many of its documents report conflicting ideas. The 240-page *Morogoro Region Socio-Economic Profile*, for example, concludes that 'the region has not played a significant part in mineral production recently' (Government of Tanzania, 1997a, p 97), despite claims by the government itself that there are at least 40,000 illegal gold miners in Morogoro.² Recent research carried out in the Mazizi mining camp in Morogoro reveals that these activities are by no means new, but are rather rooted: activities are complex with a stratified division of labour comprising 'claim holders', 'pit owners', mine workers and buyers, an organization that mirrors that of camps in Geita (see Lange, 2006); the intensity of environmental degradation in the area, which implies a long-term presence; and the fact that the Mindu Reservoir, which serves Morogoro Town, has experienced extensive silting because of prolonged gold-mining activity (Paavola, 2004). The findings reported in the *Mbeya Region Socio-Economic Profile* are even more confusing. Although Mbeya was founded as a gold-mining town at the beginning of the twentieth century, the report fails to capture the growing economic importance of ASM in the region, providing only brief details about the local geology (Government of Tanzania, 1997b). During a personal interview with a local civil servant, it was reported that there might be as many as 25,000 people currently engaged in gold and gemstone mining in Chunya district in areas such as Chalangwa, Sangami and Shoga; that in the Mpemba ward of Mbozi district, there were more than 2,000 artisanal gold miners; and in Iwiji

and Umalila in Mbeya district, there were also about 2,000 artisanal miners.³

Such analyses have failed to inform a PRSP process that may have diagnosed the rural poverty problem in certain parts of Tanzania far too superficially. Again, the view here is that whilst the initial assessment in the PRSP that 'poverty is largely a rural phenomenon' and that 'the poor are concentrated in subsistence agriculture' (IMF, 2000, p 6) may be correct, the proposed solution to this poverty – an overemphasis on smallholder farm development and comparatively minimal focus on developing non-farm activities such as ASM – may not be the best way forward. It was mentioned in the previous section that the economic importance of artisanal mining is highlighted in the NSGRP, but significantly, this occurred *after* the PRSP policy machinery had already been laid and IMF funds dispensed: the sector was a mere footnote in earlier PRSP documents. There is abundant proof of it being an after-thought in Tanzania's PRSP process from recent assessment and evaluation documents. The IMF's *Evaluation of the Poverty Reduction Strategy Paper (PRSP) Process and Arrangements Under the Poverty Reduction and Growth Facility (PRGF)*, for example, spends a significant amount of time examining progress made on the agricultural and rural development front (IMF, 2004), but its discussions on mining centre on the potential economic contribution of *large-scale* projects and the importance of foreign investment, at the same time overlooking how a parallel ASM sector provides direct employment to as many as one million people countrywide, many of them rural farmers. Similarly, the *Third Progress Report 2002/03* of the Poverty Reduction Strategy, despite seeking to 'update the current PRS [Poverty Reduction Strategy] by making it more comprehensive and pro-poor' (Republic of Tanzania, 2004, p 2), failed to identify not only the activities that began surfacing in Morogoro and Mbeya at the time, but also the intensification of activities in Geita, where de-agrarianization and subsequent 'branching out' into ASM has been far more pronounced.

A series of independent livelihood analyses, which, in their own way, have informed the PRSP process, have also failed to identify the growing importance of non-farm activities such as ASM in both Morogoro and Mbeya. For example, Paavola (2004, pp 7, 11), despite acknowledging that in Morogoro, 'artisanal gold and gemstone mining have . . . increased . . . and offer a source of non-farm income', insists that 'small-scale subsistence farming forms the mainstay of [the economy]' and that 'over a half of cash income in the Morogoro region is generated by agriculture and livestock'. Similarly, Foeken (2005, p 9) argues that Mbeya is still 'a cattle town'. Even the project work conducted under the auspices of Livelihoods and Diversification Directions Explored by Research (LADDER, a policy research programme funded by the UK Department for International Development), a seminal project that aims to identify alternative routes by which the rural poor can escape poverty,⁴ has failed to make a significant connection between the depressed state of agriculture and the rise of artisanal mining in both Morogoro and Mbeya. The LADDER report produced for Kongwa village in Morogoro, for example, despite concluding that 'apart from hand tools and implements, the use of purchased inputs such as fertilizer for crop

production is almost non-existent . . . not only in Kisanga sub-village but also in Kongwa as a whole', fails to take stock of local farmers' movements into ASM as a coping mechanism. Specifically, this report and others like it that present findings from nearby villages, despite touching on migration issues, do not consider the possible movement of various household members into ASM (LADDER, 2001). This phenomenon was captured by one miner interviewed in the Mazizi community in Morogoro, who explained that, 'I cannot move my wife here [to the mines] from the village because she has to take care of the farm and children [so I do the work]'. With the use of a household survey, it is easy to see how LADDER work has potentially overlooked the growing importance of ASM in Morogoro and Mbeya: 'households' are, of course, located in farming areas, and have occupants engaged strictly in subsistence smallholder activities, whereas many of these households' true income earners are situated in hard-to-reach areas such as mine sites, where because of the hazardous conditions, there are fewer families or 'household structures'.

In summary, it is becoming increasingly apparent that an ASM sector that is properly supported could be an effective way of alleviating the hardships of many struggling smallholders in Morogoro and Mbeya.

Concluding remarks

The movement of people from farming into ASM in certain areas of Tanzania raises questions about the universal applicability of the country's PRSP and other national poverty alleviation policies, most of which place considerable emphasis on supporting the smallholder farmer. The view here is that in places such as Morogoro and Mbeya, the failure of livelihood studies to identify plausible non-farm alternatives such as ASM, which, if properly supported with government funds, would alleviate significant local poverty, could adversely affect local economic development. What has not helped is that lending bodies continue to 'set back' the policy dialogue by painting the picture that smallholder farming, and not diversified livelihood packages, is the key to eradicating rural poverty. Consider the following passage from the African Development Bank's recently published report, *Review of Bank Group Assistance Strategy to the Agriculture and Rural Development Sector*:

'About 80% of the country's poor – estimated at about 50% of the national population – live in the rural areas where agriculture is their main source of economic livelihood. Agriculture is thus the mainstay of the Tanzanian economy and its growth is crucial for poverty reduction, food security and foreign exchange earnings. . . Smallholder farmers (about 4.5 million farm families) produce about 55% of total agricultural output and over 80% of the value of marketed cereals. The smallholder farmers are the major producers of maize, sorghum, millet, cassava, rice, plantains and pulses, as well as cash crops like coffee, cotton, tobacco and cashew. Both the private and public sectors are involved in estates agriculture, but the private sector is dominant in tea, sisal and tobacco, while government estates are significant producers of rice, wheat, sisal,

sugar and beef.' (African Development Bank, 2006, pp iii, 3)

What the report fails to explain is that large-scale farmers – many of them foreign – are producing cash and export crops, whereas most smallholders, despite accounting for 'about 55% of total agricultural output', are producing crops strictly for their own consumption and that of their families and fellow villagers. Whilst the ability to do this is indeed essential for improving rural quality of life in the country, the view here is that in both Morogoro and Mbeya – and perhaps elsewhere – smallholders will continue to be marginalized by a liberalized agricultural market, and that any support provided under the PRSP and other programmes will do little to improve their livelihoods beyond a subsistence level.

In order to do so, non-farm activities must be promoted and supported, which, in the cases of Morogoro and Mbeya, must include ASM. Provisions are already in place to do so, and it is imperative that the government acts quickly to demarcate areas for activities before they are absorbed by foreign large-scale mineral exploration companies. The Tanzanian government does encourage the acquisition of mineral claims through legal channels, requiring prospective small-scale operators to secure a primary prospecting licence and a primary mining licence. In this respect, Tanzania is little different from other countries in Sub-Saharan Africa, including Ghana, Mali and Madagascar. Under the *Mining Act 1998*, there is even a section devoted to small-scale mining, which indicates that such licences are exclusive to citizens of Tanzania or to a company owned by Tanzanians. It also states that a primary mining licence can be converted into a full mining licence in cases where the small-scale operator wishes to involve foreign investors.

By no means should support for smallholder farming in Tanzania cease. But given the nature of liberalized agricultural markets, no such support is capable of putting Tanzanians in a position to compete with multinationals. Moreover, despite the contention that some 80% of the population depends on agriculture, again, it is safe to say that in the majority of cases, it is strictly for consumption: support for the cultivation of the likes of maize, wheat and millet will do little to raise these smallholders' quality of life beyond subsistence levels. Their fate lies rather in the development of ancillary industries and vocational training, which are truly the keys for Tanzanians to support their farms further and to increase disposable incomes. In the cases of the Morogoro and Mbeya regions, one non-farm activity that is gaining increasing economic importance is ASM. It is essential for the PRSP and other national rural development initiatives to begin taking stock of this and start promoting formalization of this sector and identifying alternative means for the people in these (and other) areas of the country to escape poverty.

Notes

- ¹ In total, 60 'pit owners' and concession holders were interviewed.
- ² Personal communication, Zonal Mining Officer, May 2007.
- ³ Personal communication, civil servant, Mbeya, May 2007. In

Mbeya region, there are seven districts: Chunya, Ileje, Mbeya, Mbozi, Rungwe, Kyela and Mbarali. The districts are divided into 25 divisions, which are further subdivided into 135 wards and 577 villages.

- ⁴ The project involved the administering of surveys to 1,200 households in 40 villages in Uganda, Tanzania, Malawi and Kenya.

References

- African Development Bank (2006), *Tanzania – Review of Bank Group Assistance Strategy to the Agriculture and Rural Development Sector*, African Development Bank, Tunis.
- Banchirigah, S. M. (2006), 'How have reforms fuelled the expansion of artisanal mining? Evidence from Sub-Saharan Africa', *Resources Policy*, Vol 31, No 3, pp 165–171.
- Barry, M., ed (1996), *Regularizing Informal Mining: A Summary of the Proceedings of the International Roundtable on Artisanal Mining, 17–19 May 1995*, Industry and Energy Department Occasional Paper No 6, World Bank, Washington, DC.
- Bienefeld, M. (1995), 'Structural adjustment and Tanzania's peasantry: assessing the likely long-term impact', in Jamal, V., ed, *Structural Adjustment and Rural Labour Markets in Africa*, Macmillan Series of ILO Studies, Macmillan Press, London, pp 88–130.
- Bryceson, D. F. (1996), 'Deagrarianization and rural employment in sub-Saharan Africa: a sectoral perspective', *World Development*, Vol 24, No 1, pp 97–111.
- Bryceson, D. F. (2002), 'Multiplex livelihoods in rural Africa: recasting the terms and conditions of gainful employment', *Journal of Modern African Studies*, Vol 40, No 1, pp 1–28.
- Dreschler, B. (2001), *Small-scale Mining and Sustainable Development Within the SADC Region*, Working Paper 84, Mining, Minerals and Sustainable Development (MMSD) Project, International Institute for Environment and Development, London.
- Ellis, F., and Biggs, S. (2001), 'Evolving themes in rural development 1950s–2000s', *Development Policy Review*, Vol 19, No 4, pp 437–448.
- Ellis, F., and Mdoe, N. (2003), 'Livelihoods and rural poverty reduction in Tanzania', *World Development*, Vol 31, No 8, pp 1367–1384.
- Fisher, E. (2007), 'Occupying the margins: labour integration and social exclusion in artisanal mining in Tanzania', *Development and Change*, Vol 38, No 4, pp 735–760.
- Foeken, D. (2005), *Urban Agriculture in East Africa as a Tool for Poverty Reduction: A Legal and Policy Dilemma?* ASC Working Paper 65, African Studies Centre, Leiden.
- Gibbon, P. (1995), *Liberalized Development in Tanzania*, Nordic Africa Institute, Uppsala.
- Government of Tanzania (1997a), *Morogoro Region Socio-Economic Profile*, Government of Tanzania, Dar es Salaam.
- Government of Tanzania (1997b), *Mbeya Region Socio-Economic Profile*, Government of Tanzania, Dar es Salaam.
- Hilson, G., and Potter, C. (2005), 'Structural adjustment and subsistence industry: artisanal gold mining in Ghana', *Development and Change*, Vol 36, No 1, pp 103–131.
- IMF (2000), *The United Republic of Tanzania Poverty Reduction Strategy Paper*, International Monetary Fund, Washington, DC.
- IMF (2003), *The United Republic of Tanzania Evaluation of the Poverty Reduction Strategy Paper (PRSP)*, International Monetary Fund, Washington, DC.
- IMF (2004), *The United Republic of Tanzania Evaluation of the Poverty Reduction Strategy Paper (PRSP) Process and Arrangements Under the Poverty Reduction and Growth Facility (PRGF)*, Independent Evaluation Office, International Monetary Fund, Washington, DC.
- International Labour Organization – ILO (1999), 'Social and labour issues in small-scale mines', report for discussion at the *Tripartite Meeting on Social and Labour Issues in Small-Scale Mines*, ILO, Geneva.
- Jamal, V. (2001), 'Chasing the elusive rural–urban gap in

- Tanzania', *Journal of Contemporary African Studies*, Vol 19, No 1, pp 25–38.
- Kaiser, P. J. (1996), 'Structural adjustment and the fragile nation: the demise of social unity in Tanzania', *Journal of Modern African Studies*, Vol 34, No 2, pp 227–237.
- Kitula, A. G. N. (2006), 'The environmental and socio-economic impacts of mining on local livelihoods in Tanzania: a case study of Geita District', *Journal of Cleaner Production*, Vol 14, No 3–4, pp 405–414.
- Labonne, B., and Gilman, J. (1999), 'Towards building sustainable livelihoods in the artisanal mining communities', paper presented at the *Tripartite Meeting on Social and Labour Issues in Small-Scale Mines*, ILO, Geneva, pp 17–21.
- LADDER (2001), *LADDER Village Report No 14 Kogwa Village*, LADDER, DfID, London.
- Lange, S. (2006), *Benefit Streams from Mining in Tanzania: Case Studies from Geita and Mererani*, CMI Report 2006:11, Chr Michelsen Institute, Bergen.
- Madulu, N. F. (1998), *Changing Lifestyle in Farming Societies of Sukumaland: The Case Study of Two Villages in Kwimba District, Tanzania*, Working Paper Vol 27, De-Agrarianization and Rural Employment Network, Afrika-Studiecentrum, Leiden.
- Malima, V. (1994), 'Agricultural extension services for women farmers. The crucial role of women farmers in food security', paper presented at the *African Women Farmers Workshop*, 11–16 October, Mbagala Spiritual Centre, Tanzania.
- Meertens, B. (2000), 'Agricultural performance in Tanzania under structural adjustment programs: is it really so positive?' *Agriculture and Human Values*, Vol 17, pp 333–346.
- Mung'ong'o, C., and Mwanfupe, D. (2003), *Poverty and Changing Livelihoods of Migrant Maasai Pastoralists in Morogoro and Kilosa Districts, Tanzania*, Research Report No 03.5, Mkuki na Nyota, Dar es Salaam.
- Mwaipopo, R., et al (2005), *Increasing the Contribution of Artisanal and Small-scale Mining to Poverty Reduction in Tanzania*, Department for International Development, London, Website: www.swan.ac.uk/cds/pdf/files/TANZANIA20ASM20REPORT.pdf.
- Mwakalobo, B. S. A. (2006), 'Price reforms and smallholder agricultural production in Rungwe District', *Tanzanian Journal of Population Studies and Development*, Vol 7, No 1–2, pp 1–22.
- Mwakalobo, A., and Kashuliza, A. (2002), *Smallholder Farming Systems in a Liberalized Market Environment in Tanzania: Some Empirical Analysis in Some Areas of Mbeya Region*, Working Paper, Sokoine University of Agriculture, Morogoro.
- Mwanfupe, D. (1998), *Changing Village Land, Labour and Livelihoods: Rungwe and Kyela Districts, Tanzania*, ASC Working Paper 29, Afrika-Studiecentrum, Leiden.
- Paavola, J. (2004), *Livelihoods, Vulnerability and Adaptation to Climate Change in the Morogoro Region, Tanzania*, Working Paper EDM 04-12, CSERGE, Norwich.
- Republic of Tanzania (2004), *Poverty Reduction Strategy: The Third Progress Report 2002/03*, Government of Tanzania, Dar Es Salaam.
- Republic of Tanzania (2005), *National Strategy for Growth and Reduction of Poverty (NSGRP)*, Government of Tanzania, Dar Es Salaam.
- Sinding, K. (2005), 'The dynamics of artisanal and small-scale mining reforms', *Natural Resources Forum*, Vol 29, No 3, pp 243–252.
- Sundaram-Stukel, R., Deininger, K., and Jin, S. (2006), *Fostering Growth of the Rural Non-Farm Sector in Africa: The Case of Tanzania*, World Bank Paper 157105, World Bank, Washington, DC.
- United Nations Economic Commission for Africa – UNECA (2003), *Reports on Selected Themes in Natural Resources Development in Africa: Artisanal and Small-Scale Mining and Technology Challenges in Africa*, UNECA, Addis Ababa.
- USAID (2005), *Minerals and Conflict: A Toolkit for Intervention*, Office of Conflict Management and Mitigation, USAID, Washington, DC.
- Vavrus, F. (2005), 'Adjusting inequality: education and structural adjustment policies in Tanzania', *Harvard Educational Review*, Vol 75, No 2, pp 174–201.
- World Bank (2005), *The Millennium Development Goals and Small-Scale Mining: A Conference For Forging Partnerships For Action*, Workshop Report, World Bank, Washington, DC.
- Wuyts, M. (2001), 'Informal economy, wage goods and accumulation under structural adjustment: theoretical reflections based on the Tanzanian experience', *Cambridge Journal of Economics*, Vol 25, pp 417–438.