CHAPTER 14

Conclusion

The purpose of this book was to bring together much of the known research on gold in Africa in terms of its recent history, current production and trade, and most importantly the role it has and potentially can play in the economic development of Africa. The nature of gold production and trade in Africa has changed profoundly over the last thirty years. Gold production peaked on the continent when South Africa was producing over 1007 tonnes of gold in 1970.¹ In the fifty years that have elapsed, South Africa with many of its older mines being operated at depths of over 3000 metres has declined to become a relatively minor producer with Ghana having surpassed it as the largest producer on the continent by 2018 and continued as the number one producer in 2019. The decrease in sovereign risk of mining production that accompanied the end of the wars of apartheid and the investment security arrangements in the post Structural Adjustment Program arrangements of the 1990’s has resulted in gold production being dispersed to virtually all parts of the continent. The most significant change that has occurred has not been geographic but rather has been the direct result of changes in the nature and technology of gold production. Gold production was once the sole purview of large mining transnationals. This was largely true even outside South Africa. Prior to the 1990s, small scale mining was largely illegal throughout most parts of the continent because governments sought to assure that large scale mines provided the desperately needed taxation revenue for the economic transformation that they all sought.

¹ The decrease in gold production in South Africa is due to factors such as increased costs, aging infrastructure, and environmental regulations. The rise in production in Ghana is due to increased exploration and development of new deposits.
The introductory chapters of this book looked first at the changing nature of the global market and how these changes have affected Africa. Two major changes have transformed gold as a commodity and its potential role in the development of the continent. The first change has been the sustained bull market for gold that occurred at the beginning of the current century and has continued to 2020 with gold prices remaining at some 5–10 times their levels in the 1990s. This bull market has been driven by two overarching factors, China’s liberalisation of its gold market and the heightened and changing risk perceptions that began with the Great Recession of 2008/9. This, in turn, resulted in the unprecedented printing of money that is commonly referred to as Quantitative Easing which has sustained high gold prices for a decade. It was the high gold prices in the wake of the World Bank economic reforms in the 1990s that transformed the continent away from its low growth dependence on agriculture and manufacturing to mining. Even with these reforms, with an average gold price of US$ 351 per troy ounce as was the case in the 1990s, gold mining would not have had the transformative effect on Africa that it so obviously has had over the last two decades. The rise is the gold price was so dramatic that at the end of the twentieth century and during the first decade of the twenty-first century, the gold price was on average US$ 522 per troy ounce, whereas, the second decade of the twenty-first century on average saw the gold price at approximately US$ 1347 per troy ounce. By 2020 gold prices reached US$ 2000 per troy ounce in the wake of the unreactinty created by the Covid-19 pandemic.

The second change in the gold market which is statistically analysed has been the diminution in demand for the main industrial use of gold in the manufacturing of jewellery. For thousands of years, this was among one of the greatest uses of gold but this has diminished substantially and has become increasingly concentrated in India and China which are simultaneously the world’s largest producers and also consumers of gold jewellery. Both the price increase and the resulting shift towards the use of gold for investment purposes has had profound effects on African development by shifting resources in both large and small-scale mining towards the production of gold. The decreased demand for jewellery globally has decreased what little chance Africa has of using its gold as a basis for an efficient export-oriented jewellery sector.

Washington was faced in the 1990s with a situation in sub-Sharan Africa where dozens of countries were becoming increasingly indebted while simultaneously experiencing negative economic growth rates. Countries had no choice but to accept the conditions under the World Bank
structural adjustment programmes. Economic policy in Africa in effect became World Bank policy and Washington became determinant of all economic and mining policy in Africa over that decade. This transformation has shaped the discussion of mining policy to the present. The intention of the SAPs was to shift economic activity away from agriculture and a moribund industrial sector to mining which it was hoped would generate more rapid rates of economic growth than had been previously the case. The World Bank mining and economic policy of the 1990s was only coincidentally concerned with the ASGM sector. The policy would have been a complete failure had it not been for the super-cycle which drove base metal prices to their highest levels in a century as China began its rapid economic transformation at the beginning of the century. The Great Recession and the ensuing risk perception drove gold prices and they continued to rise even following the decline of base metal prices.

The SAPs shifted the economic orientation of Africa towards large scale mining through the policies of privatisation of previously state-owned mining assets and the decrease in taxes that provided a huge stimulus to mining exploration and development of the continent. The World Bank policy succeeded not by design but by the force of good fortune driven by the gold price as well as base metals. The policies did result in substantial increases in living standards in those countries possessing mineral resources. Moreover, in some countries such as Ghana, Tanzania, and Mozambique, what began as a mining boom has given rise to an energy export sector that may yet prove transformative. Whether this is the case rests on the development of a sound governance structure needed to avoid the experience of the previous generation of energy-rich countries such as Angola and Nigeria.

The development of gold mining in Africa over the last three decades has been a story of change to artisanal and small scale gold mining (ASGM) away from large scale mining (LSM). This is not to suggest that there has been no expansion of LSM. This has certainly grown and spread across the continent. This was driven by the reforms imposed on Africa by the structural reforms of the World Bank in the 1990s. These reforms were primarily intended to increase the attractiveness of mining in Africa for the large scale miners, and the legalisation of ASGM which came with it was merely a minor afterthought at the time. The legalisation of ASGM constituted proof that the concern of the World Bank was not merely about facilitating investment but assuring that Africans could also enter the mining sector. These reforms succeeded in transforming Africa but not until the 2000s
when the long bull market or super-cycle for minerals began. For gold, this did not stop with the onset of the Great Recession, and with prices of US$ 2000 per ounce in 2020 the long gold boom has continued, and along with it the growth of the sector. Without the historically high gold price along with the misery and poverty of many millions of otherwise unemployed Africans, there would never have been the growth of an illegal and virtually non-existent sector to one which provides employment to an estimated 8 million workers. While the World Bank was the mid-wife of the ASGM, as well as the large scale mining boom, it was the gold price that was the ‘breadwinner’ for over a decade. The transformation of Africa into a significant and geographically dispersed gold province owes as much to the World Bank policy of the 1990s as it does to the gold price. Without the commodity price boom that began after 2000, the World Bank policy would have likely been a complete failure for not only would the agricultural and manufacturing sectors have gone into decline as they did, because of structural adjustment policy, but the diversification into mining would have been unlikely to have occurred in the way and the extent to which it did.

We have reviewed many of the studies of the gross increase in income that accrues to small scale gold miners and depending upon the ore grades and the financial and institutional arrangements, there is clear evidence of increasing gross income and, in turn, poverty alleviation. Depending on the source and the model used to determine gross earnings, the benefits that accrue vary from as low as US$ 5.30 per day to as high as US$ 12.06 per day. What, however, does not exist is any estimate of a net economic benefit to Africa from this new activity. What is indisputable is that small scale gold mining is in most cases an unsustainable source of poverty alleviation. Eventually the gold runs out even if there is good fortune. What often does not run out is the source of social costs that mining creates. The gender violence, child exploitation and criminalisation of African states are both costly and often on-going sustainable. These have been considered here, but unsurprisingly the World Bank nor any of its other supporters in this endeavour have attempted to measure whether the social costs created by ASGM are not greater than the poverty alleviation benefits.

The environmental costs of large scale gold mining have been measured and useful scholarly estimates from both Europe and China already exist. Gold mining whether small or large scale has serious environmental effects, and per tonne produced is the most polluting metal made by man. In the
case of ASGM, the impact has been well documented because of the common and growing use of mercury in the sector. Those believing that the recently signed Minamata Convention will somehow decrease the use of mercury in gold smelting, which is the largest source of use of the commodity in Africa, need to consider that only 32 out of the 54 members of African Union are signatories at the time of writing. Some of the African countries that are signatories like Benin and Togo are notorious smuggling entrepôts that have historically flouted all trade restrictions of their neighbours. Significantly the world’s largest producer of mercury, China, will continue to sell and export it until 2032. How the world will deal with mercury by-product is yet another issue. In the USA it is stored but in other countries, the commercial pressure to dispose of the mercury by-product from gold mining will continue. It is by no means that even this, the most serious long term environmental consequence of small scale mining in Africa, has been addressed in any meaningful way.

There are of course other serious effects of gold mining that do not necessarily stem from the use of mercury that have to be considered. After 130 years of gold mining, South Africa suffers from serious problems of acid mine drainage that will have long term effects on water quality throughout the Witwatersrand area. However, while the South African government has introduced policies to mitigate the most harmful effects, a deterioration in water quality is inevitable. Increased costs stemming from the need to use reverse osmosis treatment of water and other purification techniques are an almost inevitable consequence of acid mine drainage.

The environmental effects of gold mining stem also from heavy metal pollution and in many ways what has happened in Africa, as the title of Chap. 4 suggests, has been a deregulation of gold mining stemming from the introduction of an almost inherently unregulated ASGM sector. The wide dispersion of environmental impacts across the continent and their impact on water quality and human health have not been measured in terms of dollar costs. This reversal of the alchemists’ dream where gold is produced and heavy metals such as lead and mercury are left are at the very heart of Africa’s shared experience with the expansion of gold mining on the continent.

The unregulated and still largely illegal ASGM sector has been the source of not only mercury pollution but, in the case of Zamfara province in western Nigeria, it was the location for what has been ‘the world’s worst case of lead pollution’. Some 400 children were documented to have died
as a result of mercury poisoning, though the numbers in Zamfara were never tallied. Including adults, the numbers would certainly be much higher. But the evidence suggests that Zamfara was not the only case of lead pollution from ASGM in western Nigeria. The lead poisoning stemmed from a particularly lead-rich gold deposit which was separated from the gold ore by local villagers. The lead was widely dispersed around the villages and cooking pots were commonly used for separating the gold ore from lead. Horrifyingly even after the risks were explained and areas cleaned, local villagers continued to extract the lead-based ore.

The very idea that a highly technical process such as the extraction of gold ore from what is often a complex mineral deposit should be undertaken by individuals with no knowledge of the metallurgy, chemistry or the environmental aspects of the process would seem logically absurd. Yet the World Bank policy of legalising the ASGM sector in the 1990s was in effect precisely that. Those in Washington who supported these changes and have continued to do so for almost thirty years would surely have understood that they have been putting millions of Africans miners in harm’s way. Zamfara stands as the starkest possible symbolic testimony of the failure of this aspect of World Bank mining and economic policy in Africa. Yet even after three decades of less concentrated but adverse environmental, social and even economic effects, there has been no public reconsideration of the ASGM policy from Washington. Significantly, for an institution that prides itself on solid economic evidence, the World Bank has not significantly attempted to quantify the net economic benefits of ASGM to Africa. The results of such an analysis would surely condemn those who constructed this policy and explain why the IFIs have been silent on a sector that has created 8 million jobs and an export sector worth $15 billion in imports to Dubai in 2016. We have attempted to summarise the gross economic benefits of ASGM in terms of poverty alleviation but no social or economic costs are available. Even this economic benefit of employment in ASGM is increasingly being threatened by the illegal entry of very large numbers of Chinese ASGM miners in countries like Ghana and Cameroon.

Despite the nominal legalisation of ASGM, the majority of those operating in the sector remain illegal or undocumented in most African countries. There are numerous reasons for this, but the formalisation of the ASGM sector would automatically mean that gold miners would be brought under the government tax net and would have to comply with the multiplicity of regulations that exist in the sector. Simply put, this is often not in the interests of the individual gold miner. There is a natural
commercial reluctance by gold miners to go down this path and hence they are predisposed to remaining informal producers. An extensive discussion over the formalisation of ASGM has occurred in academic circles followed by a further discussion of consolidation of the sector into more governable and regulated larger firms. Consolidation of the many thousands of small-holdings that exist in some countries would create larger and more governable firms but would displace many workers. The most successful example of such a consolidation occurred in Lingbao province, in China, where thousands of gold miners were displaced by a policy that created a small number of smaller gold miners that could evolve into national champions. However, what made the successful Chinese consolidation possible in the early 2000s was the very rapid, double-digit rates of economic growth being experienced in China and particularly in the manufacturing sector. This meant that displaced workers from the gold mines could readily be absorbed into the industrial sector of the economy. No similar rates of growth occur in Africa and the existence of an ungovernable and unregulated ASGM sector is a reality that for political reasons few African policymakers can now avoid.

This book is not about South Africa as gold mining is already a sunset industry and the future of gold mining is in other parts of Africa. However, the book does consider the role of gold in South Africa, when gold mining was at its peak, in the second half of the twentieth century. In South Africa, gold has played a key political and economic role in the rise and fall of apartheid. The apartheid regime understood that the gold standard and South Africa’s place in it provided a significant basis for economic support in the western world. The pre-war gold standard and its ‘baby-boom’ offspring, the Bretton Woods system were in desperate need of a stable South Africa where gold production was sufficient to feed the needs of the global trading system predicated on a fixed gold price of $35/ounce. A steady replenishment and an increase of the gold supply were necessary to fund the European balance of payments deficits which became central to post-World War II reconstruction and the American funding of the increasingly expensive and unpopular war in Vietnam. Any revolution or even political instability in South Africa would have undermined global gold supplies and brought the Bretton Woods system to an end long before President Nixon did in 1971–1973.

It is well understood that the political foundations for the western support for the apartheid regime in South Africa rested on that regime’s strong anti-communist position, and this support came to an end with the
fall of the Berlin Wall and the implosion of the USSR in 1989. Yet the economic foundations of western support for South Africa’s apartheid system were based on the centrality of stable gold supply. In the 1960s, South Africa was the source of some 70% of the world’s gold. Yet with the collapse of the Bretton Woods system in 1973, gold production from South Africa expanded in value terms as the market price rose, nevertheless, gold lost its central role in the global monetary system and thereby diminished the economic importance of South Africa. One of the most important economic factors that finally provided the apartheid regime with its ‘coup de grace’ in the 1980s was the very substantial rises in wages that were paid to the almost half a million African gold miners. By 1985 the great mining houses were publicly saying that apartheid was no longer of any economic value and they provided the earliest platforms for discussion, of the ending of apartheid, with the African National Congress.

The core of this work addresses the criminal and illegal aspects of the gold trade. The section is entitled ‘Crime without punishment’ because so much of the trade in gold violates either national laws or international norms of trade in conflict gold. It is not by design that this book considers an illegal trading system given that the ASGM sector itself, is normally conducted outside the legal structures. The trade at least, in the ASGM sector, is increasingly occurring outside the formal trading and banking system of the gold supplying nations. In many countries, the gold exports do not appear on national accounts even though substantial trade is known to occur. Three regions have been considered in detail, North Africa including Libya and Sudan, West Africa, and the Great Lakes region. Each of the studies has produced unexpected results. Nigeria, not known for gold exports, exported some 20 tonnes of gold to Dubai. Libya was the largest exporter to Dubai from Africa and this is despite the fact that Libya produces very little gold. In the Great Lakes, the gold production and trade from the DRC has given rise to not only a war economy, since the Rwandan genocide, but has created a perverse trading relationship between the eastern DRC and its East African neighbours. Gold is smuggled in significant volumes into Uganda, Rwanda, Burundi, and Tanzania and then after smelting is exported to Dubai. The extent of this trade is such that Uganda’s second largest export was gold in 2016, which in 2018 was its largest export despite having no significant gold mines. Smuggling has become pervasive in the intra-African gold trade because of the high transaction cost of transporting gold to an administrative and commercial centre where refining is possible and where taxes would be paid. In some
countries where gold export tax rates or royalties are high relative to contiguous neighbours, these countries normally experience smuggling. In the case of West Africa and despite ECOWAS directives there has been a race to the bottom on taxes with Guinea setting gold taxes at zero.

This is not uncommon as several countries appear to have no gold in the ground and yet recorded exports are large. Both Libya and Nigeria were very significant exporters to Dubai in 2016 despite an absence of anything other than small scale mines. In some cases, this is simply flight gold being exported by citizens to safe havens such as Dubai and in the case of Libya, it is conflict gold being exported by fleeing refugees from Darfur and the north-western Sahel region. Alternatively, the 81 tonnes exported from Libya in 2016 could be part of the gold stocks of the former Libyan dictator Muammar Gadhafi. In the case of Sudan where the Bank of Sudan was one of the main exporters of gold, the unit import values received in Dubai were amongst the lowest of any African country and the results are confirmed by various IMF Article IV reports. The new government in Khartoum should undertake a forensic audit of the gold exports from the Bank of Sudan to determine whether this is merely a statistical aberration or fraud.

There is increasing documentation that in the Sahel region, ASGM has become an important source of earnings for migrants and refugees seeking to cross the Mediterranean. What the evidence suggests is that gold production has been funding the smuggling of Africans into Europe, which has become so sensitive a political issue. Gold is also becoming an increasingly important part of the illegal commodity exports from Africa, which include megafauna and drugs. These are central to the criminalisation of some African states.

The Goldenberg scandal is covered in this book because it is connected to ‘gold exports’ from Kenya. Those who established Goldenberg International received considerable subsidies from the Kenyan state and a monopoly on jewellery exports even though they produced no gold or jewellery. This audacious grand fraud netted the fraudsters somewhere between US$ 600–1500 million. If one includes revenues from money laundering, then the judicial commission of inquiry set up well after the fraud estimated total revenues at close US$ 2.3 billion. No definitive estimate of losses to the Kenyan state is available despite a very expensive judicial inquiry. It is also included in part because the basis of the subsidies for the export of gold was part of the conditions demanded by the World Bank for structural adjustment. President Daniel Arap Moi’s family were
beneficiaries of the fraud. The fraud perpetrated by a businessman Mr. Pattni and the Head of Kenyan Police Security Mr. Kanyotu could not possibly have occurred without the support of the highest levels of government. Yet no-one in Kenya was ever successfully tried over this grand fraud.

The last chapter in the section is about the initial destination of some 446 tonnes of African gold which was imported in 2016 to Dubai and the UAE. Half of Dubai’s gold imports came from Africa in 2016 and the percentage continues to rise. It is when one begins to look beyond Africa and Dubai that one understands the important place that African gold has in global finance. Given its trade figures, there is little doubt that Dubai has become an epicentre for the trade in conflict gold from the Middle East and Africa. Gold has long been used by criminals as a means of common money laundering and this is recognised by the FATF that has recently taken an increasing interest in gold and diamond money laundering. This is especially so where the gold is not refined and can be sold as gold, that is, the product of artisanal production. It is worth remembering that gold remains a readily acceptable medium of exchange in international trade and with the recent aggressive use of economic and financial sanctions by the USA where anyone trading in dollars with a country where the USA has imposed sanctions can have sanctions imposed on them. Thus exports by countries like Iran or Venezuela can be paid for in gold and there is evidence this has been happening. Dubai acts as a significant entrepôt for such transactions with increasing evidence where other gold centres such as Turkey and Switzerland are facilitating the conversion of the gold from Dubai into LBMA accredited gold. There is evidence of the supply of considerable volumes of gold to Dubai from conflict regions such as Yemen, Iraq, and Syria which are not gold producing provinces. Dubai also provides an important role in facilitating what Indian jewellers call ‘round-tripping’. Under this fraudulent arrangement, Indian firms import the same product many times by travelling across the Arabian Sea between Mumbai and Dubai many times with the same gold product in a different form. The Indian government pays a subsidy both for jewellery exports and provides concessional finance for gold imports. These subsidies provide incentives for Indian jewellers to export low-quality gold jewellery to Dubai and then smelt it back to gold and then import the gold into India. This is often done many times with the same gold and estimated to amount to some 157 tonnes of gold in 2017.

Attempting to exclude Dubai from the trade in gold because of its patent failure to halt the trade in conflict gold would be futile as the trade is
too well-entrenched for such a policy to be successful. Moreover, based on the historical experience of Zurich, even if Dubai could successfully be excluded, another jurisdiction would almost immediately take its place. The best strategy would be to increase pressure on the Emirate to fulfil its obligations as it pertains to the trade in conflict gold. This could be done through joint AU action in negotiating a protocol on trade in gold from African countries. Pressure could also come from other developed country jurisdictions to assure that Dubai ceases to be the money launderer of choice in the global gold trade. One should, however, not hold out much hope for even these modest successes as conformity with international standards can be easily demonstrated with the assistance of compliant international consulting and accounting firms, as is seen by some of the cases from Dubai.

Policy matters as they pertain to the production and trade in gold, in Africa, are discussed in the section ‘Policy without content’. Several matters of significance are considered including first and foremost the issue of African resource nationalism which is so commonly dismissed by those who do not understand its origins and causes. It is the one area of policy where it is possible to say that there is a sense of direction that Africa wants a greater share of the economic benefits of mining. The World Bank, with the indispensable assistance of the commodity price super-cycle that began at the beginning of the century and the gold price boom, was remarkably successful in transforming African countries into mining provinces. The price paid by African countries was the acceptance of a tax regime in the 1990s that was designed without any mechanism that would capture economic rents should they ever arise. As a result, in the wake of the World Bank’s SAPs, African countries witnessed a substantial influx of exploration and investment which greatly accelerated economic growth but many countries felt that their share of the returns on mining was grossly unfair.

Two cases of resource nationalism in Tanzania and Ghana, both gold rich countries, were considered. In Tanzania, President Magafuli confronted the world’s largest gold miner Barrick Gold and its subsidiary Acacia in 2017 and halted exports of gold from its mines arguing that the company had massively under-declared the quality of the ore being exported. While there was good reason to confront Barrick which had declared no profits, despite many years of operation, the way in which this was done simply brought Tanzania into disrepute. The government did not make available to Barrick the assay tests it had used to make its allegation and refused to make these results public. The rules that had been imposed on Tanzania in the 1990s meant that Barrick gold was exempted
from any changes in Tanzanian law that affected profitability, therefore, to achieve an agreement on a revision of benefit-sharing, great pressure was needed. Reform of the tax regime, therefore, necessitated considerable pressure on Barrick but the refusal to comply with the most basic precepts of the rule of law i.e. that evidence is made available to those accused has meant that investors’ perceptions of the country have been exacerbated. In Ghana, the government has pursued a far less aggressive approach towards transnational investors and has seen a growth in gold production and foreign investment despite the tightening of rules and tax rates over the last decade.

The issue of industrialisation in Africa is never far from the lips, if not the actions, of policymakers. It is an area replete with policy pronouncements about the direction of industrial policy but the reality is that African countries have done almost nothing to make use of the mining activities to diversify their economic base away from mining. Two issues, beneficiation of Africa’s gold through the production of gold jewellery and the creation of backward linkages in Africa to develop a capital and intermediate goods sector to supply the mines. These are frequently discussed in national and international policy fora but in retrospect, African states, with the exception of South Africa, have done almost nothing to use the gold boom to diversify their economies either through backward or forward linkages.

In the case of beneficiation of gold through jewellery production, only South Africa has had a consistent and supportive policy framework. The rest of the gold-producing sub-Saharan states produce almost no gold jewellery except small volumes of artisanal jewellery. There remains a common myth espoused if not actually held by policymakers that having a mineral in the ground provides a source of commercial advantage for those further down the value chain. Nothing could be further from the truth as it takes often courageous and costly policy measures to effect such a translation of resource abundance to commercial advantage further down the value chain. If the existence of mineral abundance were sufficient to assure a commercial advantage to jewellery production then South Africa as the world’s largest producer of gold, diamonds, and platinum for many decades and with a pre and post-apartheid industrial policy which supported down-stream processing should have a major internationally competitive sector. This is not the case and South Africa has been unable to develop a globally competitive jewellery sector. Given the decreased global demand for jewellery, along with the pre-eminence of India and China in global gold jewellery manufacturing, means that the possibility of
an African country successfully entering the global jewellery market is very
slim indeed.

While the commercial prospects of successfully beneficiating gold into
jewellery in Africa on a large scale appears limited, indeed the potential of
backward linkages to capital and intermediate goods sectors is at least more
commercially propitious but only if African countries agree to co-operate
and create markets large enough to justify domestic production of mining
feedstock. This, in turn, requires a level of cooperation amongst African
states to create such a common market for mining feedstock that is far and
away above what has been observed in terms of regional cooperation to
date. While African countries continue to talk of such options, there are few
practical measures implemented that would move Africa in this direction.
There is simply no political will to make such substantial policy changes.
With regard to gold being used as a resource for African transformation,
the continent is caught between an economic rock and a political hard
place. Without change, policymakers condemn a generation of Africans to
their current position in global value chains which remains, as it has long
been, at the very bottom and in this case at the very bottom of mines.

The last policy matter of significance considered was the taxation of
mining. The notion that gold production in small scale mining is largely
positive for Africa is flawed. As discussed in Chaps. 3, 6, 7, 8 and 13, the
external effects of ASGM mean that the net economic benefits may not
exist. ASGM may be profitable to the financier, the smuggler, and some
miners, however, this is not the case for the state or the people at large.
Smuggled gold does not go through the domestic banking system and
therefore has only limited benefits in terms of increased foreign exchange
earnings. Furthermore, almost no taxes are accrued from the informal sec-
tor. Large scale mining may transfer price and commit other acts of mal-
feasance; however, financial benefits are accrued by the state and the
people of the country. Of significant concern is that not only do African
countries gain almost no tax revenue from ASGM, but their tax take from
large scale mining is also under assault from base erosion and profit shift-
ing. The international community recognising the magnitude of the prob-
lem has poured considerable resources into the issue in Africa. There have
been estimates of tax evasion by mining transnationals by organisations
such as UNCTAD and UNECA that are based on the weak models that
produce large numbers but are of the most limited reliability. There is no
doubt that BEPS exists in the mining sector in Africa, but the estimates
that have been made by international organisations such as UNCTAD do
not inspire any confidence. Transfer price manipulation is a complex and
sophisticated strategy used by firms globally, and they are invariably seeking ways to assure that tax authorities cannot readily detect their activities. The analysis that is so widely used by economists of under-reporting of exports based on differences between export and mirror data simply fails to capture the complex and sophisticated nature of BEPS. Only through detailed forensic work can this be detected.

Dealing with BEPS, the smuggling of gold and the failure of both small and large miners to pay appropriate levels of tax needs an international approach not dissimilar to that required to facilitate the development of backward linkages in the mining sector. The development of regional capacity through regional economic communities to deal with mining and its taxation would greatly enhance the capacity of individual countries. There is also a need for a regional scientific and technical capacity to be able to assist countries with assessing whether the volumes being exported are accurately reported. Most countries do not have mandatory provisions of refinery out-turns and so without the development of such capacity, most countries are left at the mercy of miners as to the precise volume of exports. As mentioned earlier, in West Africa, there is a Mining Directive that was issued by ECOWAS in 2009 that requires countries to co-operate to harmonise their various mining provisions. Yet there is no obligation to harmonise tax rates and this has led to a ‘race to the bottom’ where Guinea has pushed the effective tax rates of gold taxes on production and trade to zero. Without international agreements to fix tax rates, tax competition will completely erode the gold tax base as countries move to attract trade at the expense of revenue.

The final question that bears worthy of further consideration is the matter of the so-called ‘large mine bias’ in Africa. This bias in government policy appears from an economic, environmental, social, and taxation perspective as being completely justified. This is not to suggest that large scale mines do not come with a range of social, economic and environmental problems, but most of these are at least potentially subject to regulation from the various ministries in national governments. The activities of the ASGM sector, where there are often hundreds of thousands of miners in many geographically dispersed locations in any given country, creates a multiplicity of social, environmental and economic problems. In this case effective government regulation is not administratively feasible as most of those engaged in the sector are not even legal miners. We have argued above that those in the international community i.e. the World Bank amongst others, who created this sector by imposing legalisation of ASM
on near bankrupt African countries in the 1990s have not attempted to weigh the benefits of poverty alleviation against the costs imposed on society. This has not been done because of small scale mining, even if it were found that social costs outweigh benefits, it would not be politically possible to dismantle a sector that employs an estimated 8 million Africans. The international community has for nearly 25 years aimed, through financial and technical support to formalise the ASGM sector and in Africa the policy has largely failed.

**NOTES**

1. Even with the dispersion of gold production to virtually all parts of the continent, recent gold production estimates have not surpassed the peak production of 1970. See: World Gold Council, Gold supply and demand statistics, Retrieved from https://www.gold.org/download/file/14137/gdt-q2-2019-statistics.xlsx.

2. It is worth noting that from 1998 to 2001, the gold price was on average US$ 281 per troy ounce and as low as US$ 271 in 2001. See: World Gold Council, Gold supply and demand statistics, Retrieved from https://www.gold.org/download/file/14137/gdt-q2-2019-statistics.xlsx.

3. It is however, worth mentioning that these calculations vary as per the assumptions made. This is further illustrated as on average the benefits illustrated in Annex 2 of Chap. 3 range from as low as US$ 7.98 per week to US$ 85.26 per week.

4. It is however worth noting that the World Bank in ‘Mining in Africa: Are local communities better off’ have done some analysis. However, their analysis focuses on LSM than on ASGM and did not go further to quantify externalities, and in turn, whether nets social benefits are derived from mining, particularly ASGM See Op. cit. Endnote 102 Chuhan-Pole, Punam, Andrew L. Dabalen, and Bryan Christopher Land. 2017. Mining in Africa: Are Local Communities Better Off? Africa Development Forum series. Washington, DC: World Bank. https://doi.org/10.1596/978-1-4648-0819-7. Retrieved from: https://openknowledge.worldbank.org/bitstream/handle/10986/26110/9781464808197.pdf?sequence=6.

5. Bordo, M. (1993). ‘The Gold Standard, Bretton Woods and Other Monetary Regimes: A Historical Appraisal’ NBER Working Papers 4310, National Bureau of Economic Research, Inc.

6. See Op. cit. Witwatersrand Gold Deposits. (2019). 911 Metallurgist: [Online] Available: https://www.911metallurgist.com/blog/witwatersrand-gold-deposits. However, according to the Chamber of Mines South Africa Database, South Africa was on average the source of some 60% of the world’s gold in the 1960s.
REFERENCES

ARTICLES/JOURNALS
Bordo, M. (1993). The gold standard, Bretton woods and other monetary regimes: A historical appraisal. NBER Working Papers 4310, National Bureau of Economic Research, Inc.

REPORTS
Punam, C. P., Dabalen, A. L., & Land, B. C. (2017). Mining in Africa: Are local communities better off? Africa development forum series. Washington, DC: World Bank.

WEBSITES
Witwatersrand Gold Deposits. (2019). 911 Metallurgist. Retrieved from https://www.911metallurgist.com/blog/witwatersrand-gold-deposits.
World Gold Council. (2019). Gold supply and demand statistics. Retrieved from https://www.gold.org/download/file/14137/gdt-q2-2019-statistics.xlsx.