Mineral rights to human rights:
mobilising resources from the Extractive Industries for water, sanitation and hygiene

Case study: Zambia

WaterAid

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Glossary and abbreviations

COP	Conference of Parties
DA	Development Agreement
DHID	Department of Housing and Infrastructure Development
DRM	Domestic Resource Mobilisation
DSA	District Situational Analysis
EI	Extractive Industries
EITI	Extractive Industries Transparency Initiative (EITI)
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GoZ	Government of Zambia
ITCZ	Inter-Tropical Convergence Zone
LAs	Local Authorities
LME	London Metal Exchange
MDGs	Millennium Development Goals
MEWD	Ministry of Energy and Water Development
MLGH	Ministry of Local Government and Housing
MoF	Ministry of Finance
NGO	Non-Governmental Organisations
NWASCO	National Water Supply and Sanitation Council
SDG	Sustainable Development Goal
SIDA	Swedish International Development Agency
SNDP	Sixth National Development Plan
7NDP	Seventh National Development Plan
SWF	Sovereign Wealth Fund
TDs	Tailings Dams
UNFCCC	United Nations Framework Convention on Climate Change
ToR	Terms of Reference
ZCCM	Zambia Consolidated Copper Mines
ZCCM-IH	ZCCM Investments Holdings
WASH	Water, Sanitation and Hygiene
WRM	Water Resources Management
WSS	Water Supply and Sanitation

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Cover photo: Children born after the installation of a well at Cheelo Village enjoy the water. Cheelo Village, Monze District, Zambia, 2016. WaterAid/Chileshe Chanda.

1. CONTEXT

The United Nations (UN) Addis Ababa Action Agenda, the outcome of the Third Financing for Development Conference in 2015, states that "for all countries, public policies and the mobilisation and effective use of domestic resources, underscored by the principle of national ownership, are central to the common goal of sustainable development, including achieving the sustainable development goals."[1] Domestic Resource Mobilisation (DRM) is often at relatively low levels in developing countries, and in the current economic context, marked in particular by the volatility of commodity prices, there is an increasing focus on how DRM can better support and finance national efforts to reduce poverty and achieve shared prosperity.

Mineral-rich countries paradoxically have some of the highest number of people living in poverty. The World Bank estimates that for more than 80 countries non-renewable mineral resources play a dominant role in the economy, and that these countries include nearly 70% of people worldwide living in extreme poverty. High international commodity demand has offered the opportunity for substantial benefits, but these benefits are not always sufficiently shared at national or local levels, or used effectively to reduce poverty. Poor management of natural resource wealth is also a cause of corruption, environmental damage and conflict.

While progress has been made during the Millennium Development Goal (MDG) period in reducing poverty in its different forms, a large proportion of people in mineral-rich countries still face extreme poverty, malnutrition, lack of access to clean, safe water and sanitation, and remain vulnerable to natural disasters and preventable diseases. Despite the availability of domestic and international finance, including revenue from the EI, there are still major financing gaps to address these development challenges and achieve the Sustainable Development Goals (SDGs).

Improving DRM can bring multiple benefits: strengthening the government fiscal position, capacity and accountability, reducing exposure to the volatility of Official Development Assistance (ODA) and achieving greater development impact countrywide. In mineral-rich countries, effective DRM for sustainable development, including SDG 6, which focuses on clean and safely-managed water and sanitation, depends on a strong and positive contribution from the EI sector.

Since 2010, the UN General Assembly explicitly recognised the human rights to water and sanitation and acknowledged that clean drinking water and sanitation are essential to the realisation of all human rights. Therefore, it is important to assess whether governments in mineral-rich countries are doing enough *vis-à-vis* their responsibilities towards the EI sector, and whether there is an opportunity to capture and channel increased resources from the EI for sustainable development.

2. SCOPE OF THE STUDY

This study examines the extent to which the EI sector, through its contribution to the economy and government revenues, has enabled socially-productive spending and investment in the Water, Sanitation and Hygiene (WASH) sector in Zambia.

This was achieved through analysis of the EI contribution to government revenue and its resultant impact on the capacity of government to spend, invest and extend coverage in the WASH sector.

As stated in the Terms of Reference, the study includes data collection, research and analysis covering the following areas:

[1] http://www.un.org/esa/ffd/wp-content/uploads/2015/08/AAAA_Outcome.pdf

- Government budget and spending data, segregated by sector; past and current data in regard to the budget allocated to the WASH sector from government revenue, development partners, non-governmental organisations, and communities;
- Assessment of the fiscal space granted to government by the EI for spending and investment on WASH and other social sectors. This includes an assessment of historical and current budget deficits or surpluses and in particular how this affected planned spending and unplanned government responses to unanticipated WASH or other sector needs;
- Past and current allocations and expenditure to the WASH sector, how successful this has been in extending WASH coverage, and whether the current spending and investment path is likely to be adequate for achieving SDG 6 and national WASH targets. This includes assessment of national WASH plans, allocated budgets, funding flows, implementation arrangements and capacity;
- The transparency of the EI sector, including information on whether the country is compliant with the Extractive Industries Transparency Initiative (EITI), and an assessment whether joining the EITI programme contributed to improvements in natural resource management and administration;
- Assessment of the strengths of government institutions and systems at national and local levels, and the effectiveness of the administrative regime for the EI; study of the impact of the EI on the environment, including water resources, and, where relevant, on conflict; and assessment of the short, medium and long-term outlooks for EI, taking into account key domestic and international factors, including commodity supplies, demands and prices, national sustainable development needs, ongoing or planned diversification of the economy and the climate change agreement of Paris (COP 21); and
- Development of recommendations for governments, EI and civil society groups, which will help strengthen the contribution of natural resource wealth to sustainable development and the achievement of SDG 6 and national WASH targets.

3. KEY CHALLENGES OF THE STUDY

The availability and quality of data is the main constraint to conducting an evaluation of the EI's contribution to DRM and progress on sustainable development and the WASH sector. Relevant data are often sensitive and not available in one location, but rather held in several different ministries and institutions.

The revenues derived from the EI sector are part of overall government budgetary revenues, which collectively fund government spending and the delivery of services and outcomes: there is no specific part of EI revenue which can be directly linked to government budgetary allocations and spending on WASH. This evaluation is therefore based on the identification of the main trends in the contribution of the EI sector to government budgetary revenue, the trends in government spending and investment in the WASH sector, and any significant changes in policy and impact.

4. APPROACH AND METHODOLOGY

4.1 Countries for study

WaterAid requested that three countries be selected as case studies. The assessment and the selection criteria include: (i) resource-rich countries (ii) at least two of the countries in Sub-Saharan Africa, and (iii) a WaterAid presence in all selected countries. Based on these criteria, it was agreed to select Zambia as one of the case-study countries.

4.2 Methodology

The impact assessment was undertaken in five main stages for each case study, and deliverables were produced according to the Terms of Reference (ToR).

Table 1: Five stages of the methodology

1. Baseline/inception	- Collection of baseline data - Review of EI and WASH sector policies, statistics and relevant documents - Correspondence with authorities - Reports from other sources
2. Desk review/monitoring	The team carried out a desk review of available country-level documentation, following up on specific issues before starting the fieldwork.
3. Stakeholder interviews	When necessary, further data were collected through structured interviews, with a questionnaire sent to key stakeholders.
4. Validation of findings with stakeholders	The draft country report was circulated to national stakeholders for comment. It was amended on the basis of feedback received.
5. Reporting	The country case study provides information on a consistent set of parameters. This enables a cross-comparison with other case studies and relevant lessons to be learned as part of the overall three-country evaluation.

5. CONTEXTUAL INFORMATION ON THE EXTRACTIVE INDUSTRIES SECTOR

5.1 Overview of the Extractive Industries (EI)

5.1.1 Mining sector overview

Copper and cobalt are the key minerals produced in Zambia. The Copperbelt and North-Western provinces have abundant copper and cobalt deposits and are the main focus of mining activities. Additional minerals produced include coal and gold. Oil and gas exploration is also underway in the country.

Zambia is the world's 8th largest producer of copper and the 6th largest producer of cobalt. According to the EITI 2015 report, the EI sector accounts directly for 10% of Gross Domestic Product (GDP) (6% in 2014) and 44% of exports (77% in 2014). Indirectly, the mining sector may contribute as much as half of GDP. Government revenue from the EI was ZMW 9.95 billion in 2014 (US$ 1.6 billion and 32% of total government revenue) and ZMW 9.07 billion in 2015 (US$1.1 billion and 18% of total government revenue). This reflects lower commodity prices: in 2011-2013, the Zambian Government's revenue from the EI was around USD 1.5bn annually, representing 30% of total government revenue (EITI). The sector has attracted significant Foreign Direct Investment (FDI): in 2012 this was more than US$ 4 billion. However, despite the major role of the EI in terms of GDP, exports and government revenue, the sector provides direct employment for only 1.7% of the population.

Copper production in Zambia began in the years following the establishment of the British South Africa Company (BSAC) at the end of the nineteenth century. When Zambia gained independence in 1964, the country was already producing 12% of the world's copper (Sklar, 1974). Seeing the potential for mining to finance the country's development, the Government nationalised the industry, and in 1969, the share of state ownership reached 51% (Adam and Simpasa, 2011).

By 1979, it had increased to 60%,[2] and in 1982, the Zambia Consolidated Copper Mines (ZCCM) was created to amalgamate the State's control of the copper sector. In subsequent years the sector experienced financial difficulties as global copper prices fell and debt levels increased. In the mid-1990s, the Government—in order to meet conditions attached to financial support from the International Monetary Fund (IMF) and World Bank—reversed earlier policies and began the privatisation of ZCCM.

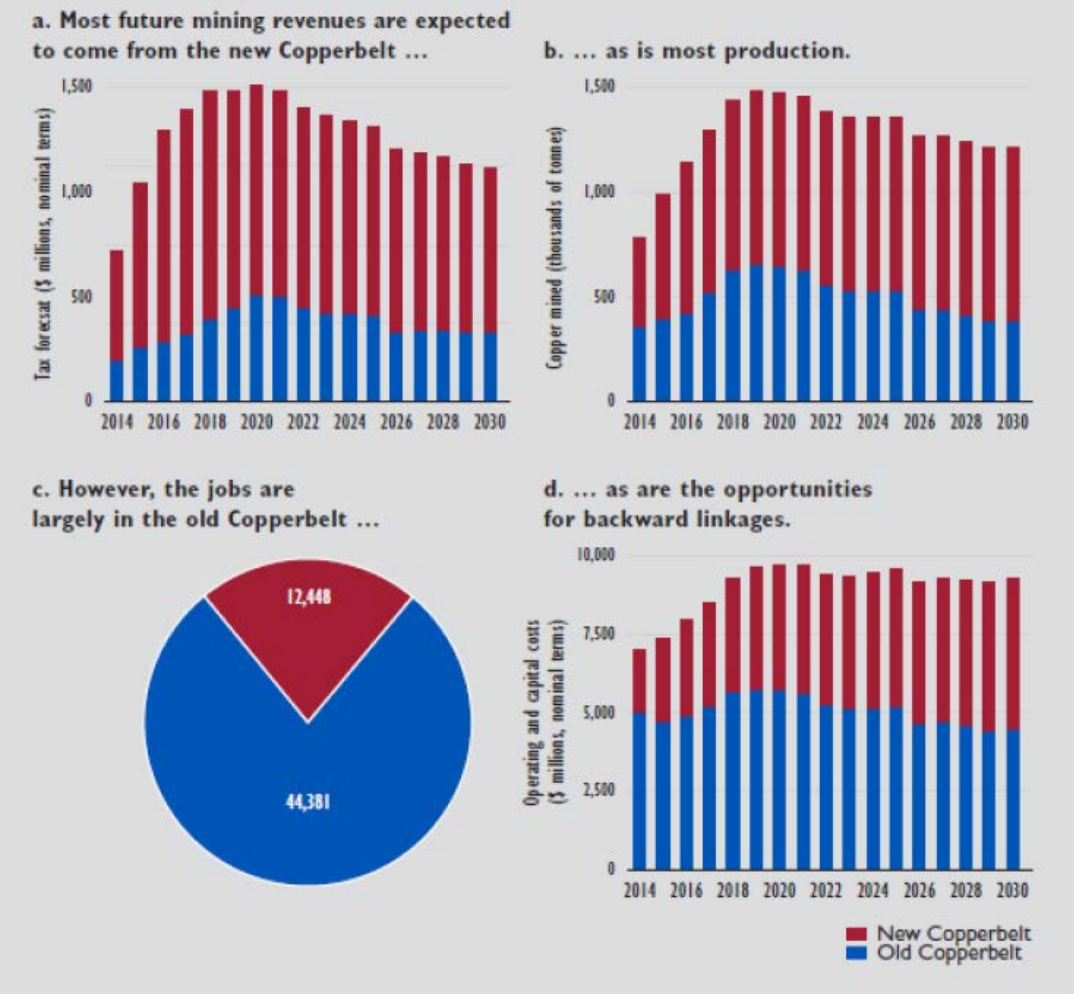
Privatisation led to over US$8 billion of new investment, allocated to new and existing mining operations, including the modernisation of the "legacy" mines on the Copperbelt. Substantial new investment went to the Northwest Province, dubbed "the New Copperbelt". The early years of the twenty-first century saw a large increase in copper production from 257,000 metric tonnes in 2000 to over 700,000 metric tonnes in 2013. Total output reached 774, 290 metric tonnes in 2016 and is forecast to fall to 753, 992 metric tonnes in 2017, mainly as a result of lower output from Konkola Copper Mines. The Zambia Chamber of Mines has stated that output increases depended on the consistency of power supply, infrastructure and the stability of the fiscal and regulatory regime.[3]

Underground mines in the Copperbelt have been the principal source for Zambian copper, but since 2000 increasing amounts of new mining and associated infrastructure has been targeted in the Northwest Province of Zambia, using capital-intensive open-cast mining techniques. As a result, the old Copperbelt is becoming less important in terms of revenues and output, even though it remains the largest source of employment.

[2] Lanchovichina and Lundstrom, "What Are the Constraints to Inclusive Growth in Zambia," World Bank
[3] http://www.openzambia.com/2016/01/zambias-2015-copper-production-remains-below-800000-mt/

According to the UNU-Wider Working Paper, *Can mining promote industrialization*[4], the current global environment of lower commodity prices has had a more adverse impact on the old Copperbelt underground mines, which are more labour-intensive and dependent on a wider range of domestically and imported manufactured inputs. Conversely, the costs of opencast mines are largely based on imported earthmoving machinery, spare parts, and diesel fuel, the latter reflecting lower oil prices globally. However, rising domestic electricity costs and unstable supply in recent years have impacted the smelting operations of both open cast and underground mines. The older, more vulnerable, and currently less profitable underground mines of the old Copperbelt offer greater potential for using mining sector procurement expenditure to deepen domestic manufacturing.

Figure 1: Zambian mining sector—Old Copperbelt (underground mining) and New Copperbelt (open cast)



Source: World Bank (2015) – a, b, and c: World bank calculations – c: derived from Chamber of Mines of Zambia (2014)

Nevertheless, the value for money of the privatisation of Zambia's copper industry remains a contested issue: mining companies were protected from existing ZCCM financial liabilities, received tax holidays and incentives and were exempted from some national environmental laws.[5]

5.1.2 Oil and gas exploration

In addition to its exploitation of solid minerals, Zambia has increasingly engaged in a quest for its petroleum reserves. The Zambian Government started to pursue this policy in the early 1970's as a

[4] UNU Wider Working Paper, 2016/83, Can mining promote industrialization? Judith Fessehaie, Zavareh Rustomjee and Lauralyn Kaziboni.
[5] The World Bank and IMF's long shadow in Zambia's copper mines, Eurodad, 2008.

result of the rise in the price of crude oil on the international markets and the dwindling revenue from the country's copper exports.

Historically, the country has had two major exploration programmes, involving the international oil companies (IOCs) Mobil and Placid Oil and undertaken between 1986 and 1991. Although these programmes did not lead to exploitation, other exploration has revealed littoral and continental sediments underlain by carbonaceous rocks with oil-generating potential in both the Luangwa and Mid-Zambezi Valleys. Recent exploration work covering parts of North-Western, Western and Eastern Provinces of Zambia indicated that the Okavango and North Luangwa basins have potential for oil and gas. In 2013 the Government tendered the oil blocks for oil and gas prospecting by the private sector. In August 2017, the Government announced that the IOC Tullow Oil would begin exploration in Northern and Luapula provinces.

5.2 Governance and transparency

5.2.1 Identified past challenges

The World Bank cites "weak governance and in particular poor government effectiveness as factors behind the coordination failures observed in Zambia, and major obstacles to inclusive growth."[6]

The 2016 Ibrahim Index lists Zambia as 16th out of 54 African countries in terms of overall governance quality. Constraints within government service delivery reduce government effectiveness and impede progress by facilitating waste and corruption, precisely where most Zambian citizens interact with government institutions and where the most essential and basic services are provided. Corruption disproportionately penalises the poor in Zambia, according to surveys conducted in 2003 by the University of Zambia.

Zambia is ranked 87th out of 175 countries according to the 2016 Corruption Perceptions Index reported by Transparency International. Zambia's position in the index has remained relatively stable over the recent period, averaging 88.1 from 1998 to 2016. Its lowest position was 123rd in 2007 and its highest was 52nd in 1998.

Zambia's Sixth National Development Plan (SNDP) links governance to development outcomes: "Good governance remains the cornerstone for prudent management of public affairs and ensuring that development outcomes benefit the people of Zambia." The SNDP supports enhanced integrity, accountability, and transparency in public and private bodies.

The National Anti-Corruption Strategy, launched in 2007, identifies the roles and responsibilities for participating public agencies. Zambia has a wealth of law enforcement and oversight institutions, which include: the Anti-Corruption Commission (ACC), the Anti-Corruption Task Force (ACTF), the Drug Enforcement Commission (DEC), the Director of Public Prosecution (DPP), the Office of the Auditor General (OAG), the Electoral Commission of Zambia (ECZ), the Commission of Investigation and the Public Accounts Committee (PAC) of Parliament.

Transparency International's assessment of Zambia's progress in tackling corruption over recent years was summarised in the following terms. The country has made considerable progress in the fight against corruption in the last decade, as reflected by major improvements recorded in main governance indicators. The legal and institutional frameworks against corruption have been strengthened, and efforts have been made to reduce red tape and streamline bureaucratic procedures, as well as to investigate and prosecute corruption cases, including those involving high-ranking officials. In spite of progress made, corruption remains a serious issue in Zambia, affecting the lives of ordinary citizens and their access to public services.[7]

[6] Ianchovichina and Lundstrom, "What Are the Constraints to Inclusive Growth in Zambia," World Bank
[7] See, https://www.transparency.org/

5.2.2 Extractive Industries Transparency Initiative

The Extractive Industries Transparency Initiative (EITI) is a global standard to promote open and accountable management of natural resources. It seeks to strengthen government and company systems, inform public debate, and enhance trust. In each implementing country it is supported by a coalition of governments, companies and civil society working together. Zambia became an EITI Candidate country in May 2009 and was declared EITI Compliant in September 2012. To date, Zambia has published seven EITI Reports, covering the years 2008-2015. The 2015 report is the most recent and was published in December 2016.

EITI Reports disclose the revenues and other information on the extractive sectors of its member countries. As part of these publications, companies report payments to government (taxes, royalties, etc.) and the government reports what it has received. These two sets of figures are compiled and reconciled by an independent administrator and published in the EITI Report. The reports also address the availability and transparency of contracts, licences, legal and fiscal frameworks as well a summary of the sector specific figures (EI contribution to the economy, exports, total revenues, etc.). Before the EITI process, mining activities in Zambia were opaque especially under the Development Agreement (DA) fiscal regime.[8] The EITI process has generally been judged as successful in several areas: improving the monitoring and management capacity of relevant government agencies and officials, strengthening the ability of Non-governmental organisations (NGOs) to hold the government and companies to account, and to some extent improving the understanding of the general population in Zambia of EI operations, taxation, accounting, audit and controls.[9] It has helped contribute to increased interest in getting detailed information and explanations on the mobilisation and use of mining revenue. Through these activities, EITI complements other capacity development efforts in Zambia, especially those relevant to public financial management.

In its Validation report, published in October 2017, the EITI Board found that Zambia had made meaningful progress in ensuring transparent management of the EI sector, with a satisfactory performance against most of the EITI Requirements. The Board emphasised that Zambia had provided valuable information along the value chain, identified gaps and opportunities for strengthening monitoring of production and generated improved public understanding of the revenues generated from EI activities. The Board concluded that this work was critical to tackling corruption and addressing tax evasion. It also recognised that the Zambia EITI was seeking Government agreement to include provisions related to beneficial ownership in ongoing government reforms. The areas that will need to be addressed by Zambia in the coming months related to clarity in the access to information on licensing, the government's policy on contract transparency, production data, and following up on recommendations from EITI reporting.

5.3 Institutional and legal framework of the Extractive Industry

5.3.1 Institutional framework

Table 2 sets out the institutional and legal framework governing the EI.

Table 2: Institutional framework

Entities	Mission
Ministry of Mines and Mineral Development	The Ministry of Mines and Mineral Development is responsible for policy frameworks and guidance for six different departments namely: the Department of Geological

[8] The legally binding Development Agreements (DA) negotiated between the government and the mines lay out all the conditions and responsibilities of the mines, as well as the government for the duration of the Agreement. See Zambia: Governance and Natural Resources Karolina Werner, 2016.
[9]Source : Evaluating the impact of the Extractive Industries Transparency Initiative (EITI) on corruption in Zambia; 2017, Paul Fenton Villar, Elissaios Papyrakis.

Entities	Mission
	Survey, the Department of Mine Safety, the Department of Energy, the Department of Planning and Information, and the Department of Human Resource and Administration.
Mines Safety Department (MSD)	MSD within the Mines and Minerals Department under the Ministry of Mines and Mineral Development is responsible for monitoring and enforcing compliance to regulations on the conservation and protection of the environment and protection of human health and safety during prospecting, exploration and mining operations in the mining sector. It is the delegated authorising agency for issues arising from mining licences. MSD draws its mandate from the Mines and Minerals Development Act, 2008.
Zambia Environmental Management Agency (ZEMA)	ZEMA is responsible for enforcing compliance to the provisions of the Environmental Management Act (EMA)[10] and any legislation which promotes environmental protection. It is responsible for ensuring sustainable management of natural resources and protection of the environment, and the prevention and control of pollution. It is mandated to perform its functions as provided for in EMA with regards to environmental protection and the management of natural resources.
ZCCM-IH	ZCCM Investments Holdings (ZCCM-IH) is a state-owned enterprise in which the Government of the Republic of Zambia (GRZ) holds 87.6% of the shares while the remaining 12.4% are held by private investors. ZCCM-IH shares held by private investors are listed on the Lusaka Stock Exchange, Paris Euronext and London Stock Exchanges. Although the mines are now operated by private companies, ZCCM-IH maintains an equity stake of between 10 and 20 per cent in most large mines.[11] ZCCM-IH also has an informal oversight role, as the organisation is represented at board-level in decision-making where the government has shareholdings in mining companies. In 2015 the Government transferred its shares held in ZCCM-IH to the Industrial Development Corporation (IDC). The IDC was created and given direct mandate and authorisation by the Government to oversee performance and accountability of all the Government Owned Enterprises (SOE'S). The IDC is mandated to maximize the value of government shareholdings and ensure that SOE'S contribute to the Sovereign Wealth Fund (SWF). The SWF focuses on stimulating investment in strategic non-mining industries to increase exports.

5.3.2 Legal framework

The Ministry of Mines and Mineral Development is responsible for enacting legislation for the mining sector in Zambia. The Mines and Minerals Act (1995) simplified licensing procedures significantly, placed minimum reasonable constraints on prospecting and mining activities and created a favourable investment environment. The Act also allowed international arbitration to be written into development agreements, if deemed necessary.

This Act was replaced by the Mines and Minerals Development Act 2008, which ruled that no special agreements should be entered into by the government for the development of large-scale mining licenses. The Act annulled the development agreements concluded under the previous Act.

Mining companies now operate under a common legislative framework regulated primarily by Act No. 7 of 2008 (the Mines and Mineral Development Act of 2008). Uranium exploration and mining are regulated by the Mines and Minerals Development (Prospecting, Mining and Milling of Uranium Ores and Other Radioactive Mineral Ores) Regulations of 2008.

In December 2014, the Act was amended to the Mines and Minerals Development (Amendment) Act (No. 11 of 2015) and became effective on 14th August 2015.[12] Further amendments led to the Mines

[10] http://www.zema.org.zm/index.php/environmental-legislation
[11] http://www.zccm-ih.com.zm/
[12] See http://www.zamlii.org/zm/legislation/act/2014/11

and Minerals Development (Amendment) Act (No. 14 of 2016 419), which became effective on 1st June 2016.

Investment in most types of mineral operations are covered by the Zambia Development Agency Act of 2006, although minerals produced for the construction industry such as clay, sand, and most types of stone, are excluded.

Zambian Government policy is not to participate directly in exploration or other mining activities, but to focus on shareholding and a regulatory and promotional role. The right to explore or produce minerals is authorised by a licence granted under the Mines and Minerals Act.

5.3.3 Fiscal regime

Since the privatisation of Zambia's mining sector, the Government has applied five tax regimes. These are set out in Table 3 below.

Table 3: fiscal regimes covering the EI

Fiscal regimes	Key contributions
The Development Agreements (DAs) negotiated with individual mines during privatisation (1997 to March 2008).	Soon after the privatisation process was complete in the early 2000s, global demand for base metals, including copper, rose sharply. Even after the impact of the economic slowdown induced by the global financial and economic crisis in 2008, the price of copper increased between 2003 and 2011 to above US$ 8,000 per tonne. Investments also increased: gross capital formation averaged 23 percent of GDP between 2003 and 2009.[13] In the same period, Foreign Direct Investment (FDI) in the mining sector increased to more than 60% (US$4.5 billion) of total FDI (GRZ, 2010). Despite the price and output booms, weak revenue generation for the government continued even in the post-privatisation period. This was a direct consequence of the contractual agreements and generous incentives granted to private foreign mining companies.[14] During the privatisation process, the sale of ZCCM assets was negotiated bilaterally between the government and the mining companies, and became part of the DAs. Each DA contained a fiscal stability clause. The Foreign Investment Advisory Service (2004) of the World Bank argued that, due to the incentives granted to the mining sector, the marginal effective tax rate[15] was in the region of 0%. The subsidy granted to the purchase of mining machinery, at 18.3% represented the largest in any sector for any asset. Adam and Simpasa (2011) estimate that the positive shock from price increases generated a permanent income stream in excess of 5% of pre-boom GDP, translating into a potential saving of US$1.4 billion (39% of 2002 GDP) in net present-value terms. However, the private mining companies, through profit repatriation, appropriated the bulk of this windfall and made dividend pay-outs to foreign shareholders.[16]
The "2008 regime" (April 2008 to March 2009)	The 2008 reforms stipulated that no special agreements should be entered into by the government for the development of large-scale mining licences and rendered the development agreements void. A new tax regime with higher tax rates was introduced by this reform.

[13] http://www.zccm-ih.com.zm/
[14] For instance, in the project document outlining the proposed development of Lumwana Copper Project operated by Equinox (Equinox Minerals Ltd, 2011), it is indicated that the provisions of the Development Agreements would apply to the project, despite the revocation of the instruments in 2008
[15] The marginal effective tax rate is designed to measure incentives for investment, is a calculation that takes into account effects of measurement and timing of income in determining the impact of a tax applied to an additional dollar of capital income. The marginal effective tax rate on capital income is the expected pre-tax rate of return minus the expected after-tax rate of return on a new marginal investment, divided by the pre-tax rate of return.
[16] The price boom started in 2003 and peaked in the first half of 2008 before the global financial and economic crisis pushed the price of copper towards the 2003 levels, but remained above the long-run average. Thus, 2002 is used as a counterfactual while the end of 2008 represents termination of the boom when the prices were at all-time low in December 2008.

Fiscal regimes	Key contributions
The "2009 regime" (April 2009 to March 2012)	In response to the concerns of mining companies about the revocation of the DAs, some of the 2008 tax measures were reversed in the 2009 Budget. Details are shown in the table below.
The "2012 regime" (from April 2012)	Further reforms were made to the mining tax regime in the 2012 budget. The two main changes for the mining industry were: (i) the increase of the mineral royalty rates for copper and cobalt and (ii) hedging and operating income were again to be treated separately for income tax purposes.
The "2015 regime" (from January 2015)	The 2015 budget introduced major changes to the mining fiscal regime. It moved away from a system comprising a flat royalty rate (6%), corporate income tax and a variable income tax, to a royalty-only system with differentiated rates for underground mining (8%) and open cast mines (20%). While Corporate Income Tax (CIT) was abolished on mining operations, it was retained for income earned from tolling (processing raw materials owned by another party) and from processing of purchased ores, concentrates and other semi-processed minerals.[17] The authorities estimated that the change would boost budget revenues from the mining sector by about 1% of GDP, based on an assumption that the change would have no adverse impact on production. However, and reflecting the negative impact on the sector's profitability, some mining companies announced plans to reduce operations and defer new investments. The Zambia Chamber of Mines (ZCM) estimated that annual production lost could reach 150,000 tons and about 12,000 jobs could be lost in 2015. Information from the first quarter of 2015 showed mineral royalties at 41% below the government's target.[18] This underperformance was associated with both the new fiscal regime and lower copper prices.
The "2015 regime" (from July 2015)	After several discussions with mining companies and a six-month standoff with miners over the proposed changes, the final royalties were set at 9% for open-cast mining, with underground operations remaining at 6%. CIT on profits earned from tolling was again introduced at 30%.
The 2016 regime (from April 2016)	On 13th April 2016, the Zambian Government tabled The Mines and Minerals Development (Amendment) Bill, 2016 to amend the Mines and Minerals Development Act, 2015 and reduce the mineral royalty payable by mining operators (with retroactive effect to 1 April 2016). In addition, the Income Tax Amendment Bill removed the variable profit tax. The Bill also made significant changes to the mineral royalty regime relate for copper, setting levies in the range of 4% to 6% depending on copper prices. The previous rates were 6% for underground mining and 9% for open-cast mining. Also with effect from 1 April 2016, the 2016 Income Tax (amendment) Bill removed the variable profit tax on income from mining operations. Companies conducting mining operations became subject to corporation tax at the 30% rate.

Table 4 below contains the key tax changes over the last decade.[19]

Table 4: key changes in tax regimes

[17] As per the original 2015 budget: an 8 percent royalty for underground and 20 percent for open-cast mining operations as final tax; 30 percent CIT on income earned from tolling, and 30 percent CIT on income earned from the processing of purchased mineral ores, concentrates and any other semi-processed minerals, previously taxed as income from mining operations. Income from industrial mineral is taxed at the variable tax rate (30 percent to 45 percent). A mineral royalty of 20 percent is charged on a person possessing minerals where the supplier to that person has not paid mineral royalty tax.
[18] http://mines.org.zm/zambian-mining-sector-expresses-serious-concerns-with-the-2015-zambia-national-budget/
[19] Source : 6th Zambia International Mining and Energy Conference and Exhibition - PWC (Zambia)

Period	Key changes
2008	Introduction of a windfall tax, increase in mineral royalties to 3%, introduction of variable profits tax and reduction of capital allowances.
2009	Windfall taxes removed.
2012	Mineral royalty increased from 3% to 6%, hedging income taxed separately.
2013	Property transfer tax of 10% applied to the transfer of mining rights.
2014	Export duty on semi-processed minerals applied at 10% and a customs duty on copper blisters (an intermediate stage of refining) at 15%.
1 Jan 2015 – 30 June 2015	A single tier regime for mining companies: mineral royalties for open pit mines applied at 20%, mineral royalties for underground mines at 8%, CIT for mineral processing and tolling operations at 30%.
1 July 2015	Mineral royalties set at 9%, CIT on mining operations at 30% and 35% on processing.
1 June 2016	Variable mineral royalties on copper between 4% - 6%; mineral royalties of 5% on other base metals.

According to the Zambia EITI reports, government revenues from the EI sector increased from ZMW 1.72 billion in 2008 to ZMW 9.07 billion in 2015.

Table 5: Government revenue from the EI sector

Years	Government revenues from the EI sector[20] (US$ bn)	ZMW bn
2008	0.50	1.72
2009	0.52	2.57
2010	0.68	3.79
2011	1.27	7.53
2012	1.28	8.02
2013	1.16	8.20
2014	1.62	9.95
2015	1.05	9.07

5.4 EI involvement in transfer pricing, tax avoidance, tax evasion or corruption

Transfer pricing (TP) is the mechanism by which prices are chosen to value transactions between related legal entities within the same multinational enterprise (MNE). These are also referred to as “controlled transactions” and may include the purchase and sale of goods or intangible assets, the provision of services, financing, cost allocation, and cost-sharing agreements.

Since 2006, the Zambian Revenue Authority (ZRA) has relied on Section 97A, B, C and D of the Income Tax Act (ITA) as the legal basis to assess and adjust non-arm’s length transactions.[21] Section 97 was amended in 2014 to bring the language into line with international standards and to empower the Finance Ministry to develop transfer pricing regulations. In particular, Section 97 specifies the documentation that must be kept by taxpayers and the penalties for non-compliance. The amendment established the legal basis for the Ministry to draft updated transfer pricing guidelines, expected to come into force in 2018. Currently, there are no specific penalties for non-compliance with transfer pricing regulations, and instead the standard penalties in the ITA are applied.[22] The Mines and

[20] Source: EITI Reports 2008-2015
[21] This can be defined as a transaction that takes place between two parties which are completely unrelated. It also implies that the transfer of assets or services will be at market value. See also KPMG, Zambia review. https://home.kpmg.com/content/dam/kpmg/pdf/2015/10/tp-review-zambia-v3.pdf
[22] The standard penalties are as follows 17.5 percent of the amount for negligence, 35 percent for wilful default, and 52.5 percent for fraud.

Minerals Development Act (MMDA) of 2015 includes penalties relating to the preparation of documentation, however they are relatively general.

For many years there has therefore been an absence of detailed rules and guidance on transfer pricing in Zambia. This is precisely what some companies have exploited. Some mining companies in Zambia are alleged to have avoided a part of their tax liabilities to government by using various transfer mispricing arrangements. Such allegations have been made frequently in the local and international media and by some Non-Governmental Organisations (NGOs). [23] In 2011, five NGOs filed an OECD complaint against Glencore International AG and First Quantum Minerals for violation of OECD guidelines.[24]

The allegations have been taken seriously and the government has responded by commissioning special forensic audits, financed by the Norwegian Development Assistance agency NORAD. This included audits of three mining companies to determine whether their transfer pricing practices were in line with international standards. Mining income to the Zambian government more than tripled from US$ 313 million to over US$1 billion in one year as a result of these audits.[25] The large increase was partly due to tax arrears arising from the changes that were introduced in 2008 and that the mining companies had previously refused to pay, and partly due to the increase in the negotiated royalty rate from 3% to 6%. As well as funding special audits, Norway has supported the renegotiation of contracts between the Zambian government and large multinationals in the mining sector.

A 2012 report by the NGO Global Financial Integrity (GFI) concluded that there were illicit financial transfers out of Zambia of US$8.8 billion between 2001 and 2010. The GFI report employed a methodology based on a World Bank approach that relies on the standard components of the balance of payments identity to calculate a residual discrepancy that can be associated with illicit outward flows. The report estimated that US$4.9 billion could be attributed to trade mis-invoicing, a type of trade fraud used by commercial importers and exporters around the world.[26]

Similarly, a 2013 study by the International Centre for Tax and Development (ICTD) analysed average tax collections from the mining sectors in several countries during the period 1998 to 2011.[27] By comparing with Botswana and Chile over the same period, it found that tax receipts were very low in both Tanzania and Zambia. The lost revenue for Zambia was estimated to be US$ 316 million a year on average over the 14-year period reviewed in the paper.

Another study carried out by the United Nations Development Programme (UNDP) provides a summary of some of the events surrounding the use of DAs as part of the privatisation process, and of the contents of DAs themselves.[28] It then goes on to develop a counterfactual model of the potential fiscal revenues that might have been collected in the period from 1997 to 2012 assuming an earlier introduction of higher rates of taxes and royalties. Throughout that period, the study estimates that the annual average revenue share actually achieved was 1.8% of GDP. However, it is estimated that 5.5% of GDP could have been achieved with higher rates, implying that the foregone revenue was equal to 3.7% of GDP (US$1.6 billion) each year.

An interim report on the forensic audit of Mopani—Zambia's second largest copper mine, acquired by Glencore in 2000—was leaked into the public domain.[29] The auditors raised questions principally over one issue – the pricing of Mopani's copper sales. Three main points were raised:

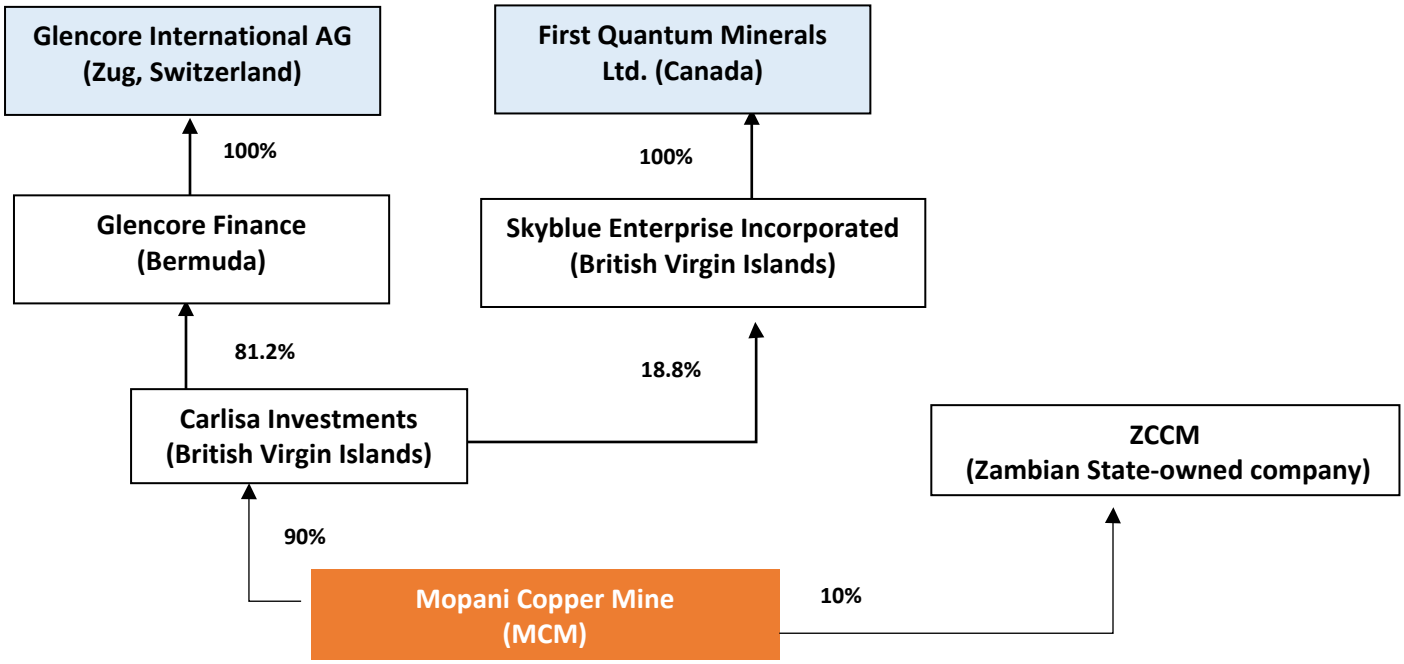
[23] See for example Bloomberg 2012. Zambia says tax avoidance led by miners costs US$2 billion a year.
[24] OECD Watch 2011: Tax evasion in Zambia: five NGOs file an OECD complaint against Glencore International AG and First Quantum Minerals for violation of OECD guidelines. 12 April. http://oecdwatch.org/news-en/tax-evasion-in-zambia.
[25] Norad, Tax for Development, (Oslo: Norad, October 2012), 18, http://www.norad.no/globalassets/import-2162015-80434-am/www.norad.no-ny/filarkiv/vedlegg-til-publikasjoner/tax-for-development.pdf.
[26] https://financialtransparency.org/zambia-lost-8-8-billion-in-illicit-outflows-from-2001-2010-according-to-forthcoming-report/
[27] Lundstøl, Raballand and Nyirongo 2013 : Low government revenue from the mining sector in Zambia and Tanzania: fiscal design, technical capacity or political will? ICTD Working Paper 9.
[28] http://www.un.org/en/land-natural-resources-conflict/pdfs/capturing-mineral-revenues-zambia.pdf
[29] https://www.asso-sherpa.org/the-mopani-affair-tax-evasion-in-the-copper-mines-of-zambia

- a difference between the prices realised by Mopani and the London Metal Exchange (LME) average price;
- a difference in total income from copper sales between Mopani's figures and a modelling exercise; and
- the calculation of the transport costs involved in the offtake contract – the contract that governs the sale of Mopani's output to Glencore.

It is worth noting that according to a note published by the European Investment Bank (EIB)[30], Glencore and Mopani have disputed the conclusions of the leaked Draft Report including to a UK Government Select Committee in 2012, stating that the report was flawed.[31]

The Africa Progress Panel 2013 report "Equity in Extractives" presented the corporate structure of Mopani Mines, which includes the use of off-shore jurisdictions. The Panel's report states that the presence of off-shore registered companies in the ownership chain limits public disclosure requirements. Meanwhile the involvement of subsidiaries and affiliates as conduits for intra-company trade creates extensive opportunities for trade mispricing, aggressive tax planning and tax evasion, enabling companies to maximise the profile report in low-tax jurisdictions. The Mopani Mines structure is shown below.

Figure 2: Company structure of Mopani Mines



Source: Africa Progress Panel, 2013.

The Kansanshi mine, the largest copper mine in Zambia and Africa, is 20% owned by ZCCM and 80% owned by a subsidiary of First Quantum Minerals limited. First Quantum Minerals use the British Virgin Islands tax haven as part of this corporate structure, through FQM Finance Ltd. In 2017 a fraud case concerning FQM Finance Ltd. was held before the Lusaka High Court, with ZCCM-IH claiming that First Quantum wrongly borrowed US$2.3 billion from Kanshansi Mining PLC. The long-running claim

[30] http://www.eib.org/attachments/press/mopani_copper_mines_summary_of_the_main_findings_en.pdf
[31] Glencore and Mopani maintained that the report was based only on a desktop review, failed to take into account that only half of the copper produced is own-sourced, and was never publicly updated or finalised. According to the same note, EIB was informed that the Zambian Revenue Authority (ZRA) had completed an audit and that outstanding issues were satisfactorily resolved. The EIB has not been able to obtain further details on this matter from ZRA, Mopani Copper Mines Plc, or its parent company, Glencore.

by ZCCM-IH includes $228 million in interest on the loan as well as 20 percent of the principal amount, or $570 million. At the time of publication of this study, the case had not been resolved.[32]

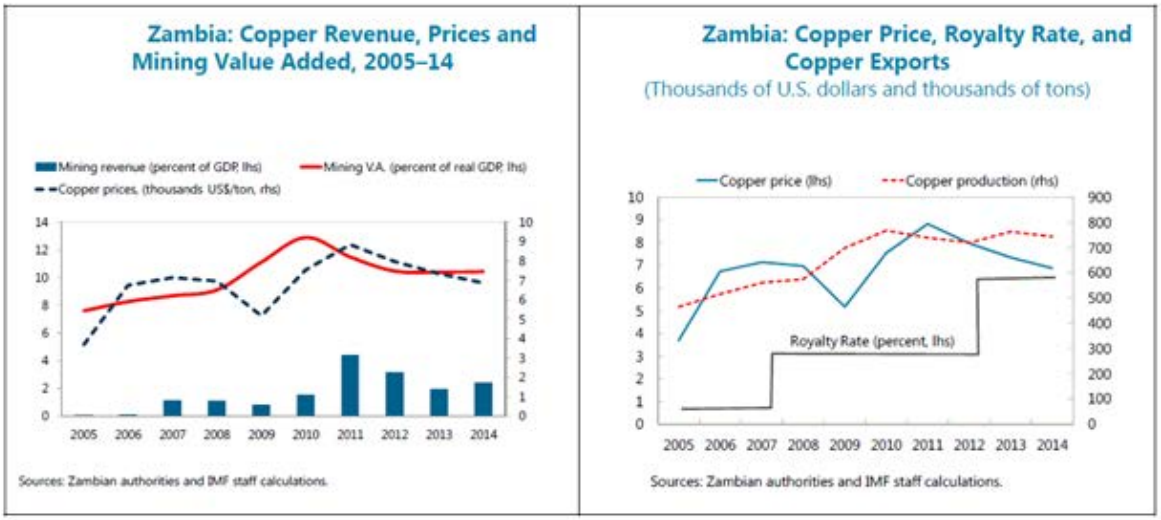
Press reports and research studies have identified how Switzerland has become a "major copper exporter" despite the copper originating from Zambia. Companies registered in Switzerland have benefited at the expense of their copper-producing subsidiaries in Zambia and the Zambian Treasury. According to research by UNDP officials, the financial model is along the following lines: the Zambian-based subsidiary sells copper to its Swiss-based counterpart at below-market price. The Swiss-based company then sells the same copper at global prices as if it originated from Switzerland, netting the price difference as profit whilst consistently reporting losses in Zambia.[33] The United Nations Conference on Trade and Development (UNCTAD) also highlighted the role of Switzerland in Zambia's copper exports. Between 1995 and 2014, Zambia recorded $28.9 billion of copper exports to Switzerland, more than half of all its copper exports, but, according to UNCTAD's research, these exports did not appear in Switzerland's national accounts.[34]

In order to tackle the problems relating to transfer mis-pricing the Government of Zambia is planning to introduce new regulations. The TP regulations to come into force in 2018 follow the Organisation for Economic Co-operation and Development (OECD) Guidelines for Multinational Entities and Tax Administrations. They require that taxpayers adopt the arm's-length principle in each specific transaction. The arm's-length standard mandates that transactions between controlled or related parties take place under terms and conditions similar to those that would have been agreed upon by uncontrolled parties participating in similar transactions.

5.5 Contribution of the EI sector to the Zambian economy

During 2000 to 2007, on average, the EI sector contributed less than 0.1% of GDP to government revenues while accounting for about 6.2% of GDP (Figure 3). This low contribution is a combination of low international copper prices, depressed production, low profitability (due in part to large capital investments made to restore production resulting in significant tax credits), and the concession agreements granted to mining companies. Revenues have increased in line with increasing copper production, higher sector value-added, rising prices, and changes to the fiscal regime (Figure 4).

Figure 3 and 4: copper revenue, prices, value added, royalty rate and exports



[32] See for example, Reuters 2017: https://www.reuters.com/article/zambia-mining/zambias-state-controlled-investment-firm-wants-bigger-stake-in-copper-mines-idUSL8N1NZ51K
[33] UNDP, EU-UN Global Partnership on Land, Natural Resources and Conflict, 2013.
[34] http://unctad.org/en/pages/newsdetails.aspx?OriginalVersionID=1277

In 2008, the government introduced a variable income tax schedule and reduced the depreciation rate for capital expenditure for non-exploratory activities. Royalty rates were increased in 2012. Along with higher production, these tax changes increased the mining sector's direct contribution to revenues from an average of 0.7% of GDP in 2005–09 to close to 3% of GDP in 2010.

During the period 2010-2014, copper accounted for an average of 66 percent of total exports, the mining industry contributed 11 percent of GDP, and mining companies paid 16 percent of the taxes and other revenue that the government collected (see figure 3, panel b and panel c). According to the EITI 2015 report, the EI sector accounted for 10% of GDP, 44% of exports and 18% of Government revenue.

On the basis of estimates from the 2012 labour force survey, the mining industry accounted for 21% of formal private sector employment in Zambia.[35] The sector provides direct employment for only 1.7% of the population, however.

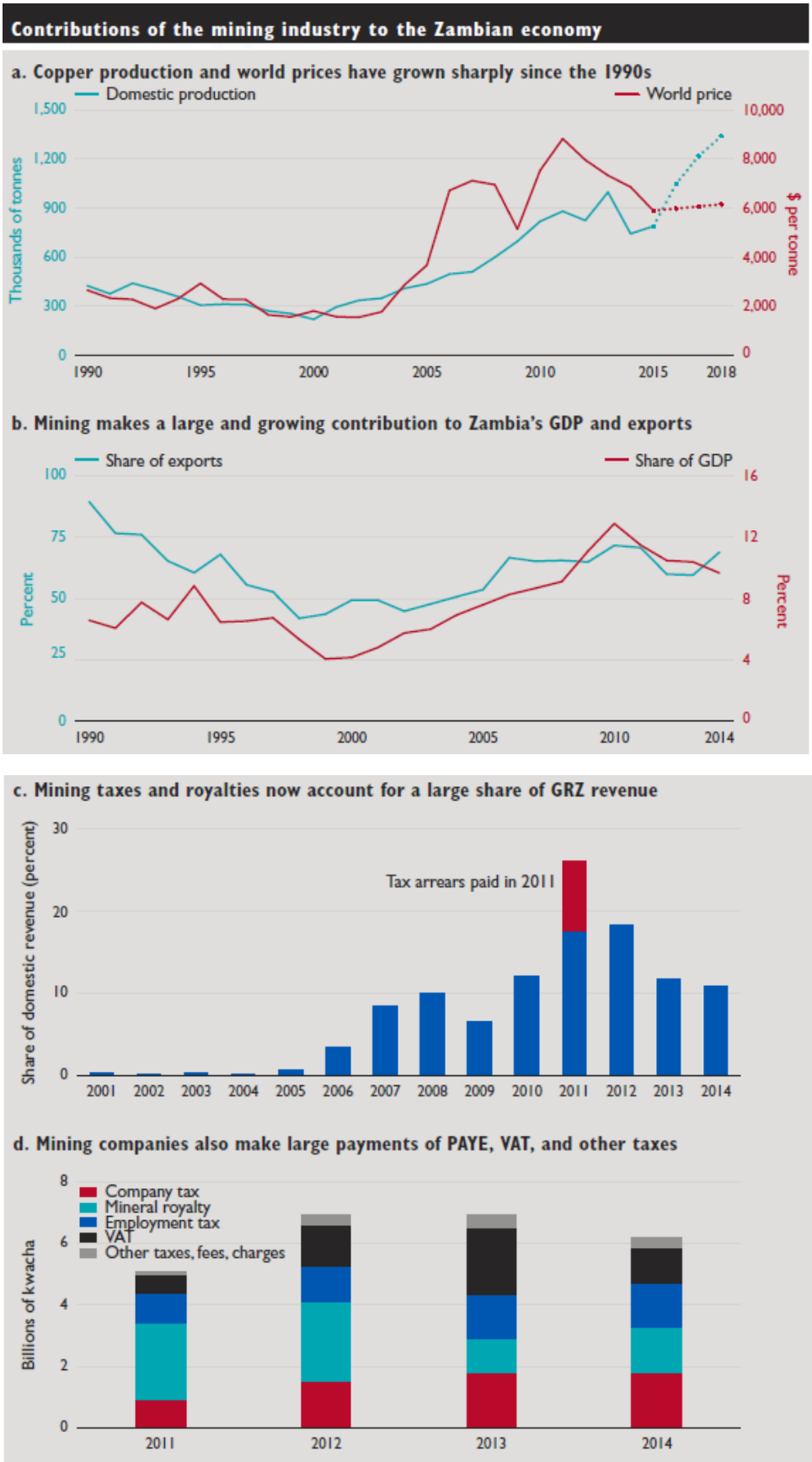
The mining industry also contributes to the economy through mining companies' procurement from firms in other parts of the economy and, to a lesser extent, through downstream processing of mining output. On the basis of the International Council of Mining and Metals (ICMM) estimates, the mining industry spent around $1.8 billion in 2012 on goods and services produced in Zambia (7% of GDP).[36]

The volume of annual copper production in Zambia grew by 350% between 2000 and 2013—an average of 12% growth each year. These statistics together with other historical data on the sector's contribution are illustrated below in Figure 5.

In terms of investment, the period from the end of the 1990s was associated with a significant rise in Zambia's ability to attract FDI. Total FDI increased from around US$90–200 million from 1970 through to the end of the 1990s, to over US$600 million annually by 2006, and rising to over US$2 billion by 2012. FDI flows have shown significant volatility, however, and have fallen in recent years (see Figures 6 and 7). FDI in mining has been estimated to be equivalent to almost 70% of Zambia's total FDI stock.[37]

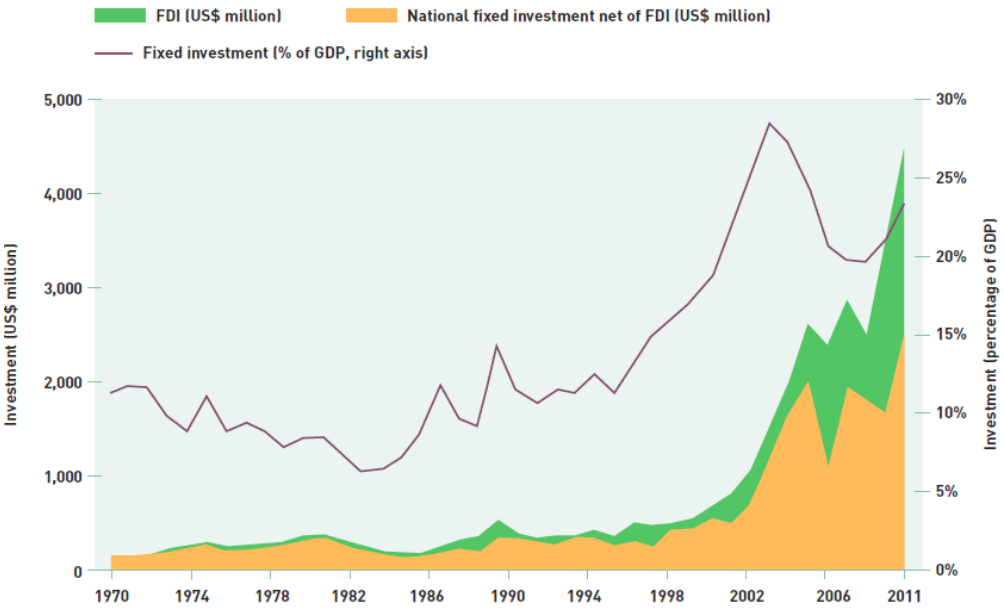
[35] Source: Zambia Chamber of Mines (Sikamo 2014), CNMC 2012, ZCCM-IH 2014 website, Wood Mackenzie 2014 (cited in Sikamo 2014).
[36] http://www.icmm.com/document/7065
[37] This figure is from the FDI numbers reported by the Zambia Development Agency and so does not include the locally-financed elements of new mining investment. See International Council on Mining and Minerals (ICMM), The Role of Mining in National Economies, 2014.

Figure 5: Contribution of the mining industry to the Zambian economy



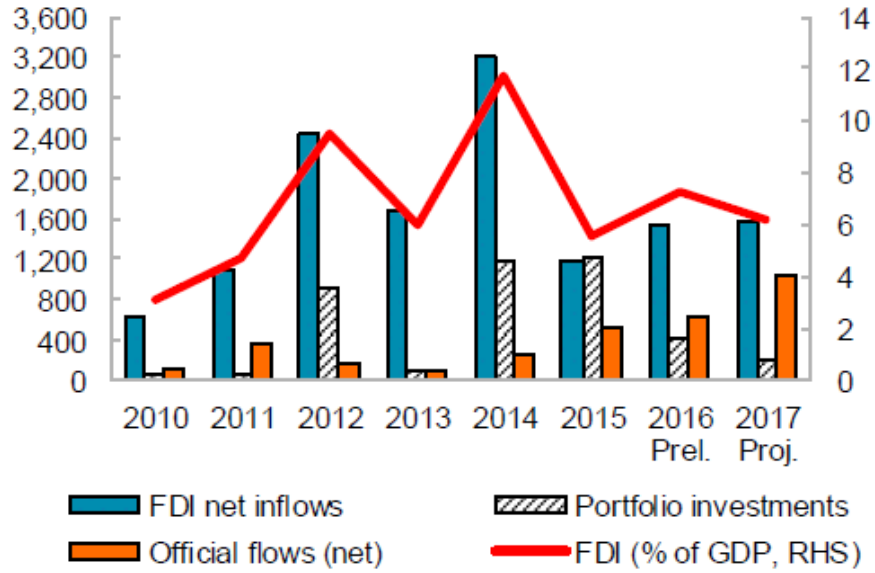
Source: a: Bank of Zambia, Ministry of Finance, World Bank; panel b: Bank of Zambia, Central Statistics Office; panel c: ZIPAR 2013, Zambia Revenue Authority; panel d: Zambia Revenue Authority.

Figure 6: Total capital investment and FDI (1970–2011)



Source: UN Statistical Office and UNCTAD

Figure 7: FDI inflows 2010-2017 (US$ millions)



Source: IMF Article IV report, 2017

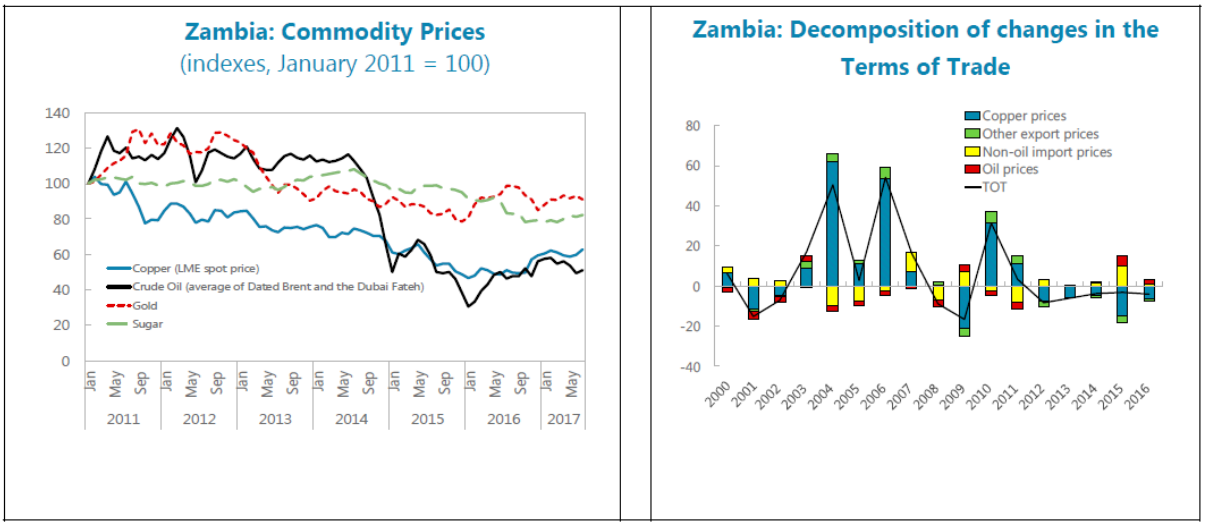
5.6 Implications of lower oil and commodity prices

The IMF concluded an Article IV Consultation with Zambia in October 2017. The Board's assessment was that the near-term outlook for the Zambian economy had improved in recent months, driven by good rains and a rising world copper price. The economy had been in near-crisis from 2015 through 2016, reflecting the impacts of various shocks, including low copper prices, poor rainfall and severe power rationing.

The decline in copper prices by almost 30 percent during 2012–16 adversely affected Zambia's external position. With copper accounting for about 70 percent of export earnings. On the import side, oil prices have fallen significantly since early 2014. The terms of trade nevertheless deteriorated every year during 2012–16.

The lower copper price (US$ 4,860 per tonne in 2016) affected mining profitability and overall activity in the Copperbelt Province, the traditional mining area. The mining industry in North Western Province fared better due to lower cost structures.[38]

Figure 8: Commodity prices and Terms of Trade



Source: IMF Article IV surveillance, October 2017.

Economic performance is expected to improve moderately in the medium term. The IMF estimates GDP growth of 4.0% in 2017, with GDP growth of 4.5% in 2018 and growth continuing at around this level until 2020. Copper output is projected to increase by 16% in 2017 and by 8% in 2018.[39] The agriculture season has started with good rains. The projections assume sufficient electricity will be available to increase copper production while weather conditions remain conducive with a limited effect from army worms for a good harvest. Zambia's 2017 copper output is expected to be between 800,000 and 850,000 tonnes, an increase from 774,290 tonnes in 2016, underpinned by more stable power supply and higher copper prices.[40]

Table 6: Zambia: selected economic indicators, % change unless stated.

	2014	2015	2016	2017	2018	2019	2020
GDP growth at constant prices	4.7	2.9	3.4	4.0	4.5	4.5	4.5
Mining	-2.3	0.2	7.0	7.0	5.0	5.0	6.0
Non-mining	5.6	3.2	3.0	3.6	4.4	4.4	4.3
GDP at market prices (ZMW millions)	167,052	183,381	216,826	243,284	274,845	310,305	349,546
GDP at market prices (US$ billion)	27.2	21.2	21.0	25.6	27.3	28.2	29.5
Central government revenue (%GDP)	18.9	18.8	18.2	17.3	18.4	18.4	18.9

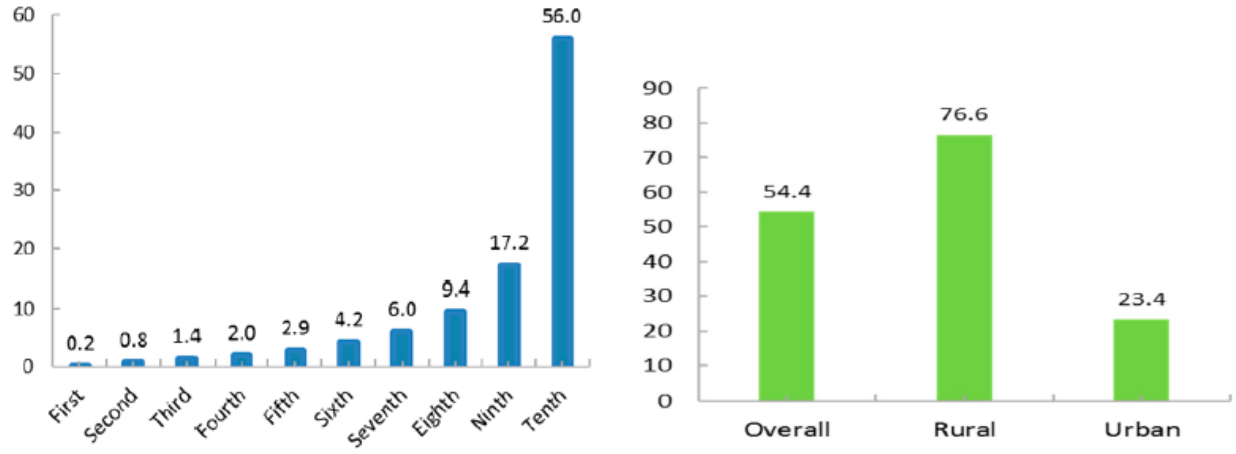
Source : IMF Article IV surveillance, October 2017.

As shown in the table above, central government revenue is relatively stable at 17-18% of GDP. The IMF is forecasting only a very slight rise to 19.6% of GDP by 2022, leaving the government little room

[38] Africaneconomicoutlook.org (Zambia)
[39] Ibid.
[40] See Reuters, December 2017, Zambia sees 2017 copper output rising.

for manoeuvre for improving key public services and investment. The Government of Zambia is seeking an IMF programme, with the possibility of an IMF loan agreed in the first quarter of 2018.

Figure 9: Zambia share of income by decile and population living in poverty, 2015 (%)



Source: CSO Living Conditions Survey 2015

Zambia's Article IV surveillance report also highlights worsening levels of inequality in the country. Income distribution is highly skewed and poverty remains high. The 2015 Living Conditions Monitoring Survey (LCMS) showed that the top 10 percent of households accounted for more than half of total national income, while the bottom 50 percent of households accounted for less than 10 percent of national income (Text Figure 9). The Gini coefficient is estimated to have worsened from 0.65 in 2010 to 0.69 in 2015. The LCMS also reported an overall poverty rate of 54 percent in 2015, with a sharp divide between rural (76 percent) and urban (24 percent) areas.

5.7 Impact of EI at local level: comparing economic, social and environmental outcomes in mining and non-mining districts

A study was conducted by ICMM to compare socio-economic outcomes in mining districts to non-mining districts in Zambia. The main outcomes of this study are as follows:

The mining districts across the Copperbelt and North-Western Provinces perform better than non-mining districts when assessing economic outcomes, whereas social outcomes show fewer differences;

Population growth has been higher in Solwezi, the capital of North-Western Province, where copper mining is the main industry, than in the non-mining districts of the province. Population growth in the Copperbelt mining districts has increased in recent years, following a decline in population in these districts between 1998 and 2006.

Subjective poverty ratios (i.e. people's own perception of their poverty status relative to the society surrounding them) have decreased more rapidly in mining districts than in non-mining ones, across both provinces.

There are large differences in the level of development between the Copperbelt and North-Western Province. The Copperbelt is the province with the highest human development indicators. By contrast, indicators for the North-Western Province show that it remains one of the poorest and least developed parts of Zambia, even after several years of new mining investment.

Despite the large and long-standing differences between the two provinces, both have experienced faster growth in real per capita income and larger reductions in poverty than the country as a whole in the period of copper's resurgence since 2000.

Access to improved water sources shows similar levels and trends across mining and non-mining districts in the North-Western Province. However, access to water and electricity services is higher in the Copperbelt mining districts compared to non-mining districts.

Infrastructure development (as measured by proximity to schools, hospitals as well as financial institutions) is better in mining districts compared to non-mining districts in the Copperbelt. In the North-Western Province, by contrast, mining and non-mining districts have similar levels and trends.

The country is facing a significant challenge in managing the trade-offs between the positive externalities of mining sector development, including economic growth, employment and revenue generation, and its unaddressed negative externalities, including air, land and water pollution.

A number of serious environmental impacts are directly linked to past copper mining operations in the regions of Mufulira, Chingola and Kitwe municipalities in Copperbelt Province. Copper smelters have been responsible for substantial amounts of sulphur dioxide (SO_2) emissions, causing acid rain, soil erosion, crop damage and air and water pollution. Most of the Copperbelt has 50 times higher concentrations of copper in surface soil than in subsurface samples[41], while SO_2 concentrations in the air range between 500 and 1000 µg/m, well exceeding the Zambian national guidelines of 50 µg/m3.[42] The Kafue River has shown highly elevated concentrations (<0.45 µg/m3) of dissolved copper and cobalt within the mining areas.[43] Leaves and roots of cassava and sweet potato grown in the contaminated areas of the Copperbelt are known to contain elevated metal concentrations[44], while backyard vegetable gardens are affected by necrosis due to accumulation of heavy metals in the soil and SO_2 on plant leaves.[45]

The old mining town of Kabwe has shown harmful levels of lead in the soil resulting from past lead mining in the area. High lead concentration in soil is reflected in high Blood Lead Levels (BLLs) of Kabwe residents. The pathways of lead exposure are mainly through ingestion of lead-contaminated soil or food, but also through inhalation and penetration through the skin, causing acute and chronic intoxication. Lead is a silent killer, which results in non-specific clinical conditions such as abdominal pains, neurological symptoms, seizures, anaemia and headaches. While there is lack of systematic data on health impacts, local health officials in four critically contaminated catchment areas in Kabwe reported high numbers of such clinical conditions, especially in children under 15 years of age.[46]

There have also been continuing reports of dangerously high pollution levels in the communities surrounding the Vedanta-owned Konkola Copper Mines (KCM), with sulphuric acid and other toxic chemicals released into the surrounding rivers, streams and underground aquifers. The villages of Shimulala, Hippo Pool, Hellen and Kakosa are seeking compensation in the courts in the United Kingdom for loss and damage to their land and health. The primary sources of water for drinking,

[41] Air Pollution on the Copperbelt Province of Zambia: Effects of SO_2 on Vegetation and Humans: Ncube et al; School of Mines and Mineral Science, Copperbelt University, 2012.
[42] Towards better environmental management and sustainable exploitation of mineral resources: Joanna Lindahl; Geological Survey of Sweden, July 2014
[43] The Kafue River is the longest river lying wholly within Zambia at about 1,600 kilometres (990 mi) long. It is Zambia's principal river and is the most central and the most urban. More than 50 percent of Zambia's population live in the Kafue River Basin and of these around 65 percent are urban dwellers. In the Copperbelt, water is taken from the river to irrigate small farms and market gardens. At Kitwe it changes course to the south-west and flows through forests and areas of flat rock over which it floods in the wet season, keeping to a channel about 50m wide in the dry season.
[44] Lindahl: Czech Geological Survey 2007.
[45] Necrosis is caused by factors external to the cell or tissue, such as infection, toxins, or trauma which result in the unregulated digestion of cell components. The affected plant tissue usually turns brown to black in colour. Necrotic symptoms could appear in any part of the plant such as in storage organs, in green tissues, or in woody tissues
[46] Lead poisoning in children from townships in the vicinity of a lead-zinc mine in Kabwe, Zambia. Data from questionnaires of children from Chowa, Kasanda and Makululu townships: Yabe et al, 2014.

washing, bathing and irrigating farms are surface water and shallow wells next to the Nchanga copper mine, which is operated by KCM.[47]

5.8 Collection and distribution of revenues from the EI

5.8.1 Collection of EI revenues

Once minerals are monetised, the revenues due to the Government have to be collected through the revenue collection framework. Under the current regime, all payments are made in cash (rather than in-kind). Payments are made by mining companies to various government entities, but it is the ZRA which receives the vast majority of payments. The ZRA has two operating divisions: Customs Services Division and Domestic Taxes Division, which together collect over 98% of all Zambia's taxes from the mining sector.

Payments from the mining sector are also made to local councils, where mining companies are based, to the Ministry of Lands, Natural Resources and Environmental Protection and to the Ministry of Mines and Mineral Development (MMMD).

The Ministry of Finance and ZCCM-IH are also part of the revenue collection framework through investments held in some Zambian mining companies.

As a government-owned company, ZCCM-IH pays tax to the government in accordance with existing laws as well as paying dividends to the government as a shareholder. The company is entitled to dividends from the private companies in which it holds shares as well as price participation fees from companies, under arrangements dating back to the privatisation of the industry.[48]

In 2015 the Government of Zambia transferred all its shares in ZCCM-IH to the Industrial Development Corporation (IDC). The IDC was created and was given direct mandate and authorisation by the government to oversee performance and accountability of all State Owned Enterprises (SOEs). The IDC is mandated to work to maximise the value of government shareholdings and ensure that SOEs contribute to the Sovereign Wealth Fund (SWF). The SWF focuses on stimulating investment in strategic non-mining sectors with a view to increasing exports.

At present Zambia has no stabilisation scheme or futures fund (such as those established by other mineral-rich African countries) to help manage revenue volatility, which is caused principally by changes in copper prices.

The ZRA is responsible for assessing and collecting all tax and non-tax revenues from the mining sector, including royalties. The MMMD is responsible for prescribing royalty rates and for collecting and verifying production data to provide to the ZRA.

One of the major coordination challenges in the mining sector in Zambia has been conflicting accounts of copper production and export volumes from the Central Statistical Office, the Bank of Zambia, and the Ministry of Mines and Mineral Development. In 2010, the Central Statistical Office reported 767,008 tons of copper produced, while the Bank of Zambia reported 852,566, a difference of 85,000 tons; again in 2012 there was a reported discrepancy of 103,000 tons.[49] In most instances, the discrepancy can be explained by the double counting of the intermediate production as both intermediate and then finished product, however it places the ZRA in the difficult position of having to navigate three different figures on production and export volumes as it seeks to assess tax and non-tax revenues.

The Government assessed the low rate of revenue collection from mining production to be as a result of the self-reporting regime applied to mining companies as well as the dependence of the system on manual inputs. These also contributed to poor harmonisation of data. The Ministry of Finance

[47] See for example https://uk.reuters.com/article/uk-vedanta-zambia-court/london-court-hears-vedantas-challenge-to-zambian-villagers-pollution-claim-idUKKBN19Q26F
[48] According the 2015 ZEITI report, no participation fees were carried over for the fiscal year 2015
[49] Samarenda Das, and Miriam Rose. Cooper Colonialism. (Foil Vendata, 2014), 24

therefore tasked the Zambia Revenue Authority (ZRA) to spearhead the implementation of the Mineral Value Chain Monitoring Project (MVCMP). The objectives of the MVCMP are as follows:

- Review the mechanisms for the monitoring of the mining and mineral value chain from exploration to exportation;
- Develop and implement the mechanisms for monitoring and facilitating the movement of the minerals within and out of Zambia; and
- Institutionalise the framework in other Government institutions and agencies through effective change management.

The Norwegian Government is supporting the project. In 2017, the MVCMP established the Mineral Data Analysis Centre (MIDAC) whose aim is to provide accurate mining production and export statistics.

5.8.2 Distribution of EI revenues

Part III (13) of the Public Finance Act of 2004 of the Republic of Zambia stipulates that a Consolidated Fund should be set up, into which all general revenues and other public funds accruing to the Treasury shall be credited. The amounts payable to the Consolidated Fund under subsection (1) shall be deposited into the Treasury Account which shall be maintained at the Central Bank of Zambia."

The receipts from mining companies therefore lose their identity once they are deposited into the consolidated fund. Their use cannot therefore be directly tracked to public investment and expenditure or to expenditure units and cost centres or projects.

5.9 Revenue management and expenditure

Public spending in recent years has been largely recurrent expenditure rather than new investment. Expenditure on large public transfer schemes such as the public pension fund, government subsidy programmes (maize subsidies and the fertilizer programme) and a higher-than-planned increase in basic salaries (2012 and 2013) have continued to restrict the budgetary margin for growth-inducing investments such as infrastructure, expanding productive sectors such as agriculture and basic social services such as water supply, sanitation, health and education.

At national level, the government uses the Seventh National Development Plan (7NDP) as a medium-term policy framework to guide the country's development, including addressing inequality and reducing poverty.[50] The 7NDP aims to use an integrated approach to create an environment for the domestication of SDGs, African Union Agenda 2063, Regional Indicative Strategic Development Plan (RISDP) and other international, regional, multilateral and bilateral development strategies. The Plan aims to accelerate economic growth and job creation and diversify the economy to reduce "over-dependence on the extractive industries, especially copper mining". The plan prioritises the modernisation of agriculture as the bedrock of transitioning to an industrialised economy.[51]

A National Decentralisation Policy was approved in 2002 (officially launched in 2004) to devolve decision-making and service delivery to local authorities. In 2010 the Government introduced a formula-based grant system, with the dual aim of making local government funding more predictable and transparent, and allowing government to track more effectively the use of grants by councils. However, little fiscal decentralisation has taken place in practice and the low capacity provided by the current system for councils to raise revenue and the lack of a well-defined framework for local

[50] The Seventh National Development Plan (7NDP) for the period 2017- 2021 is the successor to the Revised Sixth National Development Plan, 2013-2016 (R-SNDP) following its expiry in December 2016. The Plan, like the three national development plans (NDPs) that preceded it, is aimed at attaining the long-term objectives as outlined in the Vision 2030 of becoming a "*prosperous middle-income country by 2030*". It builds on the achievements and lessons learnt during the implementation of the previous NDPs.

[51] 7NDP, page 8.

government financing have made it very difficult for the current decentralisation reforms to attain results.[52]

The slow pace of fiscal decentralisation is also reflected in the distribution of mineral royalties and revenues. In accordance with Section 136 of the Mines and Minerals Development Act 2008, the Minister of Finance consults with the Minister responsible for Mines to "establish a mineral royalty sharing mechanism for distributing royalty revenues". However, there is no provision within the legislation as to what this mechanism should be, leaving a legal vacuum in the modalities and percentages of the transfer by the central government.[53]

As a result, local government agencies remain weak. The low absolute size as well as the volatility of transfers typically prevents local authorities from dealing effectively with the full range of public service demands (and indeed the statutory obligations under the 1991 Act) in mining areas. For example:

- local administrations have struggled to provide the required public services in the aftermath of privatisation to deal with fast-growing populations in the North-Western Province, and to undertake public service provision previously undertaken by ZCCM in the Copperbelt;
- the lack of predictable funding has resulted in local authorities having weak fiscal positions, further undermining their ability to collect and manage revenue. This is evidenced by the build-up of aggregate uncollected revenue in the average council. As a result, most councils are underfunded and some struggle to even pay their administrative staff on a regular basis; and
- service delivery at district/sub-district level is still provided predominantly through the structures of central line ministries (e.g. in the health sector through district health boards and district health management teams) rather than through a committed devolution to autonomous, fiscally empowered and locally accountable local authorities (as planned in the spirit of the National Decentralisation Policy).

Therefore, the delivery of public goods and services in Zambia remains highly centralised. The budget does not show expenditure by urban or rural areas, but rather by line ministry, making it difficult to track where funds were actually spent on a disaggregated basis. However, public expenditure reviews generally find a bias in favour of urban and against rural areas in functional areas such as education and public works (e.g. water and sanitation and road projects).[54] As a result, there are large service provision inequalities between urban and rural areas of the country.

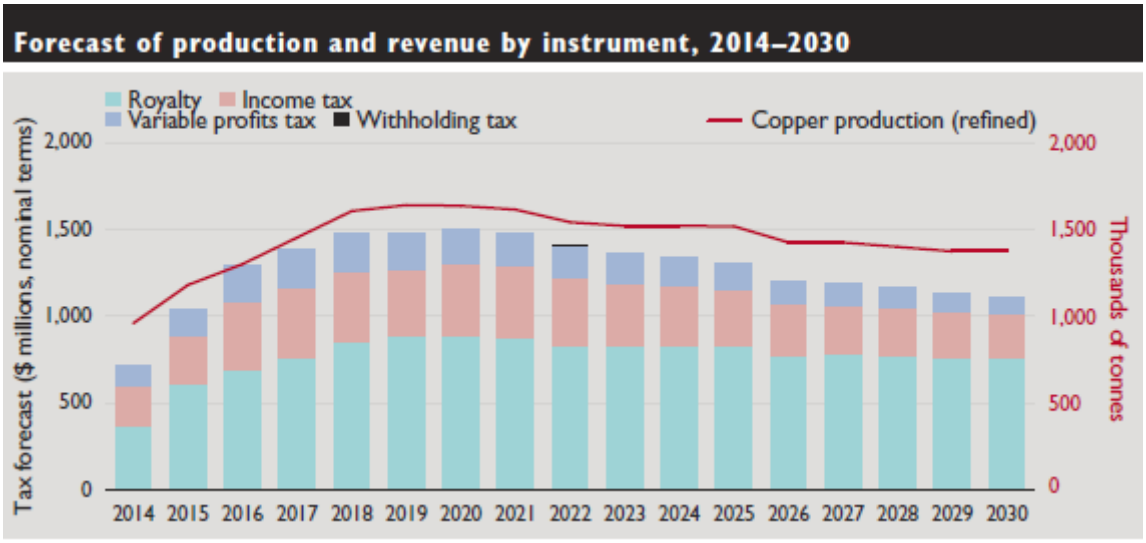
5.10 Assessment of the short, medium and long-term outlooks for EI

The low copper price, uncertainty about the mining fiscal regime and the government strategy to diversify the economy to reduce dependence on copper mining are amongst the trends that will affect the outlook for the EI and the Zambian economy in the medium-term. The low copper price, on which the economy and government depend for revenue and foreign reserves, will put pressure on fiscal and current account balances, and uncertainty about the fiscal regime could reduce investment production in the mining sector.

Based on the tax regime which entered into force in July 2015, the World Bank has established a forecasting model. The model incorporates information about the tax provisions the government applies to each mine, along with detailed financial data about the largest mining companies' cost structures as they are likely to evolve over the life of each mine.

Figure 10: Forecast of production and revenue by instrument, 2014-2030

[52] http://theredddesk.org/sites/default/files/zambia_national_decentralisation_policy_1.pdf
[53] It is worth noting that this section has been removed from the Act of 2015, without having put new arrangements in place.
[54] See for example the Swedish International Development Agency, SIDA 2012.



Source: World Bank
Notes: Projections for 2015 assume that the July regime is in force during the entire year. Nominal copper prices of LME-grade copper cathode used in the analysis are taken from the World Bank's January 2015 commodity price forecast.

Looking towards the future, the model projects revenue to level out at around US$1.5 billion in 2020 before gradually falling back to around US$1.1 billion by 2030. The increase through to 2020 includes growing revenue collected from profits-based taxes, which proved disappointing in the initial years after privatisation for reasons discussed above. After 2020, government revenues, mining industry jobs, and foreign exchange are all forecast to decline.

Zambia has historically been exposed to extreme weather conditions such as droughts and floods and in recent years, these events have become more frequent and severe, with droughts in 2000/01, 2001/02, and 2004/05 and floods in 2005/06 and 2006/07.[55] Zambia is affected by the movement of the Inter-Tropical Convergence Zone (ITCZ) and El Niño Southern Oscillation[56], both of which can influence patterns of rainfall and subsequently water recharge and the drying of water tables, boreholes and rivers, as well as potentially inundating water points and destroying sanitation facilities.

Zambia has been experiencing the effects of climate change resulting in extreme weather conditions, such as droughts, rising temperatures and unpredictable rainfall patterns. The frequency and intensity of climate events is expected to rise in future, with negative impacts on the economy and consequently people's livelihoods. It is estimated that the impact of climate change will cost Zambia approximately 0.4 percent of annual economic growth. It is further estimated that without action, rainfall variability alone could lead to losses of 0.9 percent of GDP growth over the next decade, thereby keeping a significant section of Zambia's population below the poverty line.[57]

Although climate change presents major risk and uncertainty for Zambia, its direct impact on the mining industry is expected to be limited, as regulations and management strategies are already in place to manage factors such as water usage and environmental issues relating to rehabilitation. While a lack of access to water may affect some mining projects, most mining activity processes do not generally require potable water. Where high-quality water is required, some mines are already installing treatment plants.

Changes in the frequency and intensity of storms have the potential to impact on mining operations (e.g. tailing dams, sediment and erosion control). However, these impacts can be addressed as part of the mine's water management plan.

[55] WaterAid (2010) Draft WaterAid Zambia Country Strategy - 2011-2015.
[56] McSweeney, M. New and G. Lizcano (2008) UNDP Climate Change Country Profiles: Zambia. Accessed 12 July 2011, available at http://ncsp.undp.org/document/undp-climate-change-country-profile-3.
[57] See 7NDP page 36.

The highest risk to the mining industry from climate change is most likely to come from meeting growing community and national concerns over environmental issues. Water consumption and pollution through mining is likely to come under increasing public scrutiny during drought conditions, such as those experienced recently in the region. This is likely to increase difficulties in obtaining approvals for mining projects.

Moreover, many mining companies are not compliant with the requirements of the Environmental Protection Fund (EPF). The EPF is the financial mechanism to ensure funding is in place to close mines safely if a company is unable to do so.[58] Rehabilitation of mining sites is also delayed due to investor hopes that the low concentrations of metal that remain in tailings dams (TDs) could be economically feasible one day with the right prices and right technology.[59] Licence holders want to maximize the "option value" associated with the TDs in the future and since there is little cost to an investor to hold a mining license, and since enforcement of environmental regulation is weak, licence holders indefinitely defer remediation of old TDs and mining sites. Development of the TDs is also seen as an opportunity for job creation, and so the preservation of the "option value" often has political backing.[60]

Additional constraints on mining may also affect the economic viability of individual mines, leading to knock-on effects to communities, through job losses and a decline in regional revenue. Work to develop clean technologies may reduce this risk to some extent.

However, the actual process of mining is likely to face increasing community pressure particularly given the participation of Zambia in the United Nations Framework Convention on Climate Change (UNFCCC) and the increasing international focus following the 21st and 22nd sessions of the Conference of Parties (COP 21 and 22).

[58] Reasons for non-compliance vary. In some instances, the cash component is too onerous for marginal and small companies. In others, the requirement to obtain a local Zambian bank guarantee for assessed liability value is not possible due to the large nature of the liabilities and modest size of local banks. The project will seek to address policy barriers to compliance.
[59] TDs are the materials left over after the process of separating the desired/valuable product from the run of the mine ore. TDs are often the most significant environmental liability for a mining project
[60] This is despite the fact that mining and the processing of tailings dams is not job-intensive.

6. FINANCING OF WATER SUPPLY AND SANITATION IN ZAMBIA

6.1 Sector Governance

The early 1990s saw several reforms take place in the water and sanitation sector, including the 1994 National Water Policy in 1994 (later revised in 2010).[61] The National Water Policy set out seven key principles: 1) the separation of water resources management (WRM) from water supply and sanitation (WSS); 2) the separation of regulatory and executive functions; 3) the devolution of authority from central government to local authorities (LAs) and private enterprises; 4) the achievement of full cost recovery of the water supply and sanitation services through user charges in the long run; 5) the human resources development leading to more effective institutions; 6) the use of appropriate technologies for local conditions; and 7) increased Government priority and budget spending to the sector.

The National Water Supply and Sanitation Council (NWASCO) acts as national regulator of water and sanitation provision. Until 2016 the Ministry of Energy and Water Development was responsible for water resource management and overall responsibility for the water sector while the Ministry of Local Government and Housing (MLGH) was responsible for water supply and sanitation policy and programmes.[62] This changed with the creation of the Ministry of Water Development, Sanitation and Environmental Protection (MWDSEP) in October 2016, which brought together all water-related issues under one ministry.[63] The Ministry is responsible for the development of WASH policy, the implementation of WASH projects and programmes and monitoring and supervision in the sector. It will play a key role in the delivery of the water-related aspects of the 7NDP alongside utilities and local government.

Local authorities and private sector entities have the ability to implement water sector programmes and strategies with the devolution of authority from the central government to the local level, which is mandated under the Water Supply and Sanitation Act of 1997.

6.2 Trends in WASH coverage

Zambia has made only limited progress in realising the human rights to water and sanitation over the past decade and the country faces major challenges if it is to achieve universal access by 2030, consistent with SDG targets. It did not achieve either the water or the sanitation Millennium Development Goal (MDG) targets, with the WHO/UNICEF Joint Monitoring Programme (JMP) assessing the country as having made moderate progress towards the water MDG target but “little or no progress” towards the sanitation MDG target.[64] Access to basic water increased from 49% of the population in 2000 to 61% in 2015, with an increase from 83% to 86% in urban areas and 30% to 44% in rural areas. Access to basic sanitation increased from 26% of the population in 2000 to 31% in 2015, with a decrease from 51% to 49% in urban areas and an increase from 13% to 19% in rural areas. A quarter of the rural population practised open defecation in 2015. Baselines for safely-managed services have not yet been established across the different sub-sectors, with the exception of urban safely-managed water, which decreased from 49% to 47%. National levels of access to

[61] AMCOW (2010) Draft Water Supply and Sanitation in Zambia: turning finance into services for 2015 and beyond. AMCOW Country Status Overview 2010.
[62] MEWD also undertakes some water supply activities including borehole drilling.[62] The Department of Housing and Infrastructure Development (DHID) in MLGH provides technical support to water and sanitation service providers and oversees infrastructure development and rehabilitation. See USAID, Zambia Water and Sanitation Profile, 2009.
[63] Parliament approved the establishment of four new Ministries. These were the Ministry of Housing and Infrastructure, the Ministry of Water Development, Sanitation and Environmental Protection, the Ministry of National Guidance and Religious Affairs and the Ministry of Presidential Affairs.
[64] In 1990, 49% of the population had access to an improved water source and this had risen to 65% by 2015. It made “little or no progress” in increasing access to improved sanitation, however: 44% of the population had access in 2015 compared to 41% in 1990.

safely-managed services will be significantly lower than access levels to basic services, underscoring the challenges ahead in achieving SDG 6.

Government policy for the WASH sector is set out in the National Urban Water Supply and Sanitation Programme (NUWSSP 2011 to 2030) and the National Rural Water Supply and Sanitation Programme (NRWSSP 2007 to 2015). The NUWSSP covers water supply, sanitation, solid waste management and drainage infrastructure and services in the urban areas of Zambia.[65] The NRWSSP sets out priorities and approaches for rural areas, including the Government's vision for universal coverage. A subsequent NRWSSP covering the period through to 2030 will be developed following the evaluation of current programmes.

For urban areas, the regulator NWASCO regards individual household connections, communal taps, water kiosks and public tabs served with treated water from the service provider's network as acceptable water points. For sanitation, NWASCO considers service by offsite (main system/network) and septic tanks only for onsite as acceptable. For rural areas, the Central Statistics Office (CSO) provides the following assessment: protected wells, boreholes and taps are seen as safe sources of water supply, whereas unprotected wells, rivers and lakes/streams are considered unsafe sources of water supply.[66] For sanitation, the national definition of "adequate" sanitation facilities includes pour-flush latrines, pit latrines with sanitation platforms or other concrete platforms, traditional pit latrines with a smooth floor surface, ventilated improved pit latrines, septic tank latrines (aqua privy) and EcoSan latrines.[67]

It is also important to keep in mind that the figures above underestimate the true scale of the WASH problem. Crucial aspects such as drinking water quality, continuous availability and distance to facilities are currently not measured. Also, the numbers showing increased access over the years do not take into account the number of facilities that have deteriorated and are broken because of a lack of proper maintenance.

6.3 Financing the WASH sector[68]

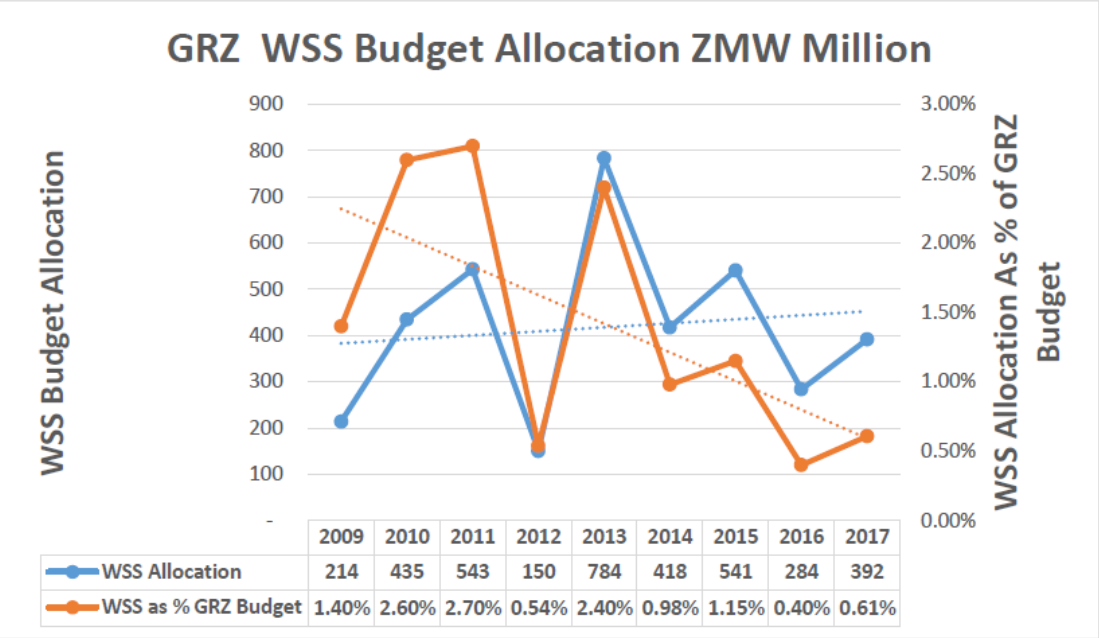
Despite the importance of water and sanitation, the sector has received relatively low budget allocations and prioritisation from the Government, and has experienced budget cuts in recent years. The UN-Water Global Annual Assessment and Analysis of Sanitation and Drinking Water (GLAAS) 2017 provided detail on several aspects of Government budgets and spending on WASH. In 2016 the Government WASH budget was US$39 million, which is less than 0.2% of GDP. This level of public finance departs significantly from commitments made under the eThekwini Declaration (2008) and Ngor Declaration (2012), in which the Zambian government agreed to commit a minimum of 0.5% of the country's gross domestic product for sanitation and hygiene.

Figure 11 illustrates recent trends in WASH budgetary allocations by the Government of Zambia. It shows for example a sharp fall in the WASH budgetary allocation—46.8%--between 2013 and 2014, significantly impacting on service delivery and access. Volatility in the budget continued through to 2017, with the 2016 budget for water and sanitation 48% lower than the Kw 0.54 billion in the previous year, before recovering in 2017.[69]

[65] NWASCO regards individual household connections, communal taps, water kiosks and public tabs served with treated water from the WSS provider's network as acceptable water points. For sanitation, NWASCO considers service by offsite (main system/network) and septic tanks only for onsite as acceptable.
[66] WHO and UNICEF categorise drinking water sources into improved or unimproved sources rather than safe or unsafe. CSO adopted the WHO definition for the first time in the 2006-2010 LCMS Report. Improved drinking water sources include protected well, borehole, piped water, public tap, protected spring and rainwater.
[67] WHO and UNICEF disaggregate facilities into improved or unimproved facilities which include the national definitions, as well as, flush toilet, piped sewerage system, pit latrine with slab and composting toilet.
[68] Budget allocation figures in the section cover water and sanitation only
[69] The 2016 Ministerial budget speech set out Government activities and plans in the WASH sector. The Government constructed in 2016 944 boreholes and rehabilitated 400 existing boreholes. Further, 11 small water schemes are under construction. These interventions have given 341,500 people access to a safe and clean water supply. In addition, Government continues to promote community-led approaches to sanitation which has resulted in about 760,000 people in rural districts having access to improved

In addition to budget cuts, for the past two years, there has been a wide variance between budget and actual releases suggesting that there are constraints related to the capacity to spend and improve the sector. In fact, the government has released less than 40% of WASH resources to the relevant agencies.

Figure 11: Zambia's water and sanitation budget allocations[70] from 2009-2017 (K-Millions)[71]



Sources: Compiled from GRZ Yellow Books – 2009 – 2017

Based on current trends and evidence, 75% of Zambians will have access to improved water in 2030, and only 44% will have access to improved sanitation.[72]

Table 7 below provides more detail on the man financial issues affecting the WASH sector in Zambia.

Table 7: Zambia: selected financial characteristics of the WASH sector

Issue	Sanitation		Water	
	Urban	Rural	Urban	Rural
Operating and basic maintenance costs are covered by basic tariffs	Covers over 80% of costs	Covers less than 50% of costs	Covers over 80% of costs	Covers less than 50% of costs
Absorption of external funds (% of official donor capital commitments spent (three-year average)	Over 75% absorption.			

sanitation. In 2017, Government will target to increase access to clean and safe drinking water from the current 51 percent to 55 percent and access to sanitation from 44 percent to 47 percent in rural areas. This will be done through construction of 2,000, and the rehabilitation of 1,000 water points. Government will also continue to promote community-led approaches to sanitation and will construct 300 sanitary facilities. http://www.cuts-international.org/ARC/Lusaka/pdf/Budget-Address.pdf

[70] National budget allocations to sanitation and drinking water
71 Yellow Books and Budget Statements 2015
[72] Data are sourced from WASHwatch.org

Absorption of domestic funds (% of domestic commitments spent (three-year average))	Less than 50% absorption.
Sufficiency of financing to reach national targets	Less than 50% of what is needed.
Government defined financing plan published and agreed	Agreed, but not sufficiently implemented. Applies also to hygiene (nationally).
Expenditure reports available and accessible	Government, ODA, and non-ODA expenditure reports are available.
Government WASH budget (US$ millions, constant 2014 US$)	US$ 39 million (2016)
Annual WASH expenditure (US$ millions, constant 2014 US$)	US$ 154 million (2016) Households US$ 62 million, Government US$31 million, External US$ 61 million.

It is encouraging to see a high level of transparency in the availability and accessibility of expenditure reports. The table shows that financial sustainability is a greater challenge in rural areas than in urban areas. In rural areas tariffs cover less than 50% of costs. The table also shows that current levels of financing fall significantly short of what is required to achieve national targets. This is confirmed by World Bank analysis which estimates the cost of achieving SDG 6. Achieving universal access to basic WASH is estimated to cost US$186 million a year through to 2030. However, achieving SDG targets 6.1 and 6.2, safely-managed services, is estimated to cost US$1.55 billion a year, or 6.1% of GDP.[73] This compares with total WASH expenditure of US$154 million, consisting of US$62 million from households, US$61 million from external sources and US$ 31 million from Government. The report estimated that total WASH expenditure represented US$10 per capita in 2016.

In theory, a good proportion of the financing gap could be plugged from extractives revenue which is forecast to contribute over US$ 1 billion per year to the government's treasury over the next fifteen years.[74] However, given other priorities for government expenditure, as well as the fact that much of the revenue is already effectively tied up means that this could prove challenging to achieve in the short to medium term.[75] In the longer run, and taking into account the expected growth of revenues, there may be opportunities for securing significantly higher financing allocations for the WASH sector. Furthermore, by addressing some of the weaknesses in the governance of the sector (such as tax avoidance and smuggling) the government could create further opportunities for increased revenues from the sector in the future.

6.4 External financing and ODA

Zambia received an annual average of US$ 96 million of Official Development Assistance (ODA) for financing the water and sanitation sector between 2014 and 2016. The largest donors during this

[73] The costs of meeting the 2030 Sustainable Development Goal targets on Drinking Water, Sanitation and Hygiene, World Bank, January 2016.
[74] See Figure 7
[75] The budget process is transparent but long. A concern is the change (2011) in the budget cycle to follow the calendar year. This means that the process has to start early in the current year for the budget release . By October of the preceding year the budget should be presented to Parliament and failing any problems funds should be available by January of the year in which it should be implemented. This was done to avoid ministries having no funds at the beginning of the implementation year. The challenges this brings are significant even as it solves other problem; It means that ministries spend the budget preparation year tied up preparing the budget.

period were the USA (US$31.7 million), Denmark (US$18.1 million) and Germany (US$ 13.2 million). The largest multilateral donors/creditors were the International Development Association (IDA, US$7.5 million) and the African Development Fund (US$6.5 million). Table 8 provides more detail on Zambia's external financing.

The external (donor) contribution to WASH financing over the period 2007-2014 was over 70%[76] of the total national budget allocation to the sector. Such a level of funding is currently required to achieve set goals and is indispensable for the improvement of technical skills and to plug critical gaps. It is certainly politically beneficial as foreign assistance boosts the credibility and reach of the national programme.

However, significant dependence on external donors also comes with its own challenges. This is especially critical when foreign assistance becomes hard to maintain and donor policies may change and affect future resource flows. Volatility harms the planning process, implementation of programmes and delivery of results.[77] A higher budget allocation from the Government would not only help address the financing gap facing the sector, but would also reduce some of the risks linked to high aid dependency.

Table 8: ODA to water and sanitation in Zambia, 2014-2016, US$ millions (constant 2015)

Donor	2014	2015	2016	2014-16 average
All donors, total	**94.9**	**92.5**	**99.2**	**95.5**
DAC donors, total	73.7	70.1	79.7	74.5
Denmark	35.3	18.8	0.1	18.1
Germany	13.3	17.9	8.3	13.2
Japan	1.8	3.5	4.6	3.3
United Kingdom	8.5	6.0	6.0	6.8
United States	14.1	20.7	60.2	31.7
Multilateral donors, total	21.2	22.4	19.5	21.0
EU Institutions	3.8	2.8	3.7	3.4
African Development Bank (Fund)	10.2	9.4	0.0	6.6
World Bank (IDA)	6.4	3.4	12.7	7.5
UNICEF	0.8	1.1	1.1	1.0

[76] Source: Ministry of Finance, Ministry of Local Government and Housing,3WWW.WASHwatch.org/southernafrica/ Zambia with reference to WaterAid Zambia.

[77] Dependence on external finance can also lead to concentration on high-profile activities at the expense of essential ones and at the same time promote the introduction of costly and unsustainable externally-driven technologies at the expense of traditional and tested solutions.

7. CONCLUSIONS AND RECOMMENDATIONS

Zambia's national and local governments face multiple challenges in delivering their commitment to ensure all of the country's citizens have access to safely-managed water and sanitation services by 2030 (SDG targets 6.1 and 6.2). The 2017 WHO/UNICEF JMP estimates that 61% of the population had access to basic water services in 2015 and 31% had access to basic sanitation services. Although there is currently no estimate, access to safely-managed services is likely to be significantly lower than these levels, underscoring the challenges ahead in achieving SDG 6. Achieving universal access to basic WASH is estimated to cost US$186 million a year through to 2030. However, achieving SDG targets 6.1 and 6.2, safely-managed services, is estimated to cost US$1.55 billion a year, or 6.1% of GDP.[78] This compares with total WASH expenditure of US$154 million (from households, government and external financing). The GLAAS 2017 report confirmed that Zambia has less than 50% of the necessary financing required to meet its national targets in all four subsectors of rural and urban water supply, and rural and urban sanitation.

Given the size of the EI sector in Zambia, there is scope to meet part of this financing gap from domestic resource mobilisation linked to the EI. The various studies discussed in this report indicate that Zambia is not receiving value for money from its EI sector in terms of revenues to the Government. The Government has provided exceptionally favourable incentives in the form of low taxes, low royalty rates and long stability periods, which lock mining companies into favourable conditions. This contributes to low levels of government revenue. General government revenue as a percentage of GDP was 17.3% in 2017, only slightly above the threshold estimated to be necessary to fund even basic state functions.[79] Improving DRM will require action from Government, business and civil society across several fronts to strengthen transparency and revenue mobilisation in the public finances and the EI. Success in these areas also requires continuing and enhanced international support and cooperation from countries and institutions outside of Zambia.

Strengthening governance and transparency in the EI sector is a crucial part of tackling public and private corruption. International NGOs and academics have raised concerns that Zambia may be losing up to US $500 million per year due to illicit transfers by mining companies. Former vice-president of Zambia, Guy Scott, suggested that this figure might be as high as US$2 billion per year.[80] The legal structure of key international mining firms in the copper industry, which rely on off-shore tax havens, together with statistics that show Switzerland as Zambia's largest export market for copper, reinforce the impression that privatisation has brought few if any benefits for the ordinary Zambian. Zambia's recent Article IV surveillance report highlights the worsening levels of inequality in the country.

An essential element for progress is implementation of the recommendations of the EITI Board. The Board emphasised that Zambia's work to provide information along the value chain, strengthening monitoring of production and improving public transparency of revenues generated from the EI are critical to tackling corruption and addressing tax evasion. The Government also needs to include in legislation the requirement for disclosure of beneficial ownership of companies. Since 1st January 2017 this has been a requirement for compliance with the EITI standard. The hidden ownership of companies in the EI sector is wide open to abuse, and in addition to legislation, there is a need for Zambian institutions and officials to be trained to deal with beneficial ownership.

The Government should conduct forensic audits of the EI sector on a regular basis. When these were carried out with the support of the Norwegian Development Assistance agency NORAD to check whether transfer pricing practices were in line with international standards, mining income to the

[78] The costs of meeting the 2030 Sustainable Development Goal targets on Drinking Water, Sanitation and Hygiene, World Bank, January 2016.
[79] Gaspar, Vitor, Laura Jaramillo and Philippe Wingender, (2016). *Political Institutions, State Building, and Tax Capacity: Crossing the Tipping Point*, IMF Working Paper WP/16/233.
[80] Transfer Pricing in the Mining Sector in Zambia– NRGI (March 2016)

Zambian government more than tripled. These audits should be publicly available to enable scrutiny by local communities and civil society.

The Government could increase the incentives for the repatriation of illicit funds and the capture of increased funds from the EI through a ring-fenced fund, dedicated to resourcing the SDGs, including SDG 6. With oversight from the central and local government and civil society, it could act as a powerful mechanism and incentive for capturing additional revenues, improving public financial management and spurring sustainable development in Zambia through to 2030.

These steps can make a major contribution to strengthening Zambia's DRM, raising much-needed funds for WASH and sustainable development, consistent with SDG 17.[81] Several international initiatives support the achievement of SDG 17, and they offer opportunities for Zambia to strengthen capacity in this critical area. They include the Addis Tax Initiative, Tax Inspectors Without Borders, Base Erosion and Profit Shifting (BEPS) and the Platform for Collaboration on Tax.[82]

Finally, it is important that the government plans on the basis of a long-term horizon in terms of its management of the EI. Countries that have successfully managed their EI sector, such as Botswana or Norway, have shown the ability to put in place effective governance, transparency and long-term planning. A failure to regulate the EI effectively will cause the country long-term environmental problems and ultimately undermine development. The report details examples of unacceptable levels of contamination to critical water resources. The Government should ensure that its management of the EI sector, whether it is from an economic, social or environmental perspective, is done so in the long-term interest of Zambia and its citizens.

[81] SDG target 17.1 includes a commitment to strengthen domestic resource mobilisation, including through international support to developing countries, to improve domestic capacity for tax and other revenue collection.
[82] See also, http://www.africa.undp.org/content/rba/en/home/presscenter/articles/2017/08/stopping_illicit_financial_flows_to_boost_growth_in_africa.html