

COPPERFIELDS

A HISTORY OF THE IMPACT OF THE FIRST DECADE OF A MINING BOOM

IN NORTH WESTERN PROVINCE, ZAMBIA, CIRCA 2002-2015



BY

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Margaret O'Callaghan, author, 1945-

Copperfields. A History of the Impact of the First Decade of a
Mining Boom in North Western Province Zambia

Description and analysis of what happened to a largely rural area when a mining boom occurred.

Africa, Zambia, mining, history, economic and social development

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1. North Western province Zambia, 2002 plus.
2. Mining impact history
3. Africa.

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Cover Photographs: (L) Top (L) Typical village along T5 roadside. (R) School children touring Kansanshi mine. (Centre) Typical landscape Mumena area (Bottom) Traffic illustrating impact of the mining boom. All photos by author, 2012.

DEDICATION

This publication is dedicated to the people of North Western Province who, over the past decade, have had to cope with developments which have turned many of their lives upside down and woken the province from its slumber.

PREFACE

The Zambian and the Congolese Katanga region which are part of the same copper 'belt' (see Map 1) have been major global copper producers for many decades and the subject has been well studied. This document describes the first decade of a different and later mining boom in an area of copper *fields* – that which occurred in the North Western Province of Zambia, commencing, approximately, in 2002. The associated events made this the most transformative period in the province's history and gave it, for the first time, national recognition and a position of importance in the country.

A century earlier, at the commencement of the mining boom across the border in the Congo, Monsignor de Hemptinne, the Bishop of Katanga, had '... feared a profound social and demographic crisis ...' (1926). In a later period the Rhodes-Livingstone Institute's Director, Godfrey Wilson (1942), was reported by Ferguson (1999) as sensing in 1941 that the Zambian Copperbelt region was heading for '... an epochal transformation' - which indeed happened.

I was familiar with North Western province before the mining boom began because of my UN programme work there in the early 2000s. Observing the beginning of the changes before leaving the country in 2005, I felt concerns similar to those expressed by the Bishop and Director about the potential impact of large-scale mining on what had largely been a quiet, rural backwater. I often wondered in subsequent years what had happened and I finally started researching to find out the answer.

I also realized, for historical reasons, that these changes ought to be documented - in order to place them within the context of North Western province and Zambia's mining history. By doing so I also hoped that it might help major players reflect on the impact of their actions during the first decade. An additional motivation was to respond to the urgings of colleagues and acquaintances in the North West to tell their story for they were desperate for the truth about mining impact to be brought out into the open. They felt that the introduction of mining had been a traumatic experience for their people. There was also reported to be much confusion and a lack of clear information about what had been going on and they welcomed any clarification of the situation. With my background in international development, research, history and my prior knowledge of the province¹ they felt that I was the right person to tell the story. Chief Mumena even charmingly said in 2014 that I '... was heaven sent to undertake the task.' A national level government official told me that they knew what the problems were but couldn't speak out, but that I could do so. Another urged me to tell the story *as it* was i.e. frankly, even though he knew it would not necessarily be positive for some, including his own department.

This then is one version of the story of how, in about a decade, traditional farming fields and forests were transformed into *copperfields* and parts of a previously undeveloped province were economically invigorated – and socially disturbed. While the main focus is on the impact of the three major mines, other elements which played a role in the developments are also described.

¹ For an author profile see end of document.

ACKNOWLEDGEMENTS

I am most grateful for the contributions made by numerous people during my research, including some who cannot be named. In particular, I wish to acknowledge:

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Twa santa Mwane

Nasakilili nankashi

Ngunasakwilila cikuma

To you all

It has been a privilege to compile this North Western story for you.

And in special memory of the following who are deceased: H.E. Levy Mwanawasa S.C. (who appreciated the importance of planning), Hon. Peter Matoka, Wila Mung'omba, Harry Michael, Professor Cherry Gertzel and Tim Curtin. Also, Ison Mubanga Tiza, Labison Kalilombe, Beauty Mubagwe, Charles Rae and Patrick Sapallo. It is of immense sadness to me that they did not live long enough to see the fruits of this research to which they contributed in various ways or were interested in its findings.

Notes:

The main focus is on the period 2002-2015, i.e. the first decade of the mining boom, but some earlier and later information is also included.

It is to be noted aspects of the situation in the North West have evolved in various ways since 2015.

It is to be appreciated that individual elements of the story need to be understood in context i.e. recognizing the stage developments were at and the external influences which were affecting matters.

The major mines are referred to by their common names i.e. Kansanshi, Lumwana and Kalumbila and the main focus is on copper although gold, nickel and other minerals are also mined.

For convenience and because it experienced name changes, the Ministry of Mines and Mineral Development is referred to in short as the Ministry of Mines and that the term 'NGO' is taken to include Civil Society and Faith Based Organizations.

Photographs are those of the author unless otherwise acknowledged.

Districts are named as they were when the research was undertaken. Changes occurred later when three new districts were created.

The spelling of local languages varies between different informants, so what is used is only one version, to which not all would agree.

Distances vary between reports. The ones used here were recorded during research by Dr Dick Jaeger or are from GRZ maps.

The Chiefdom boundaries were drawn up during the colonial era as per the map of 1958 (Republic of Zambia, the North Western Province Chiefs' Areas) and disputes about them are quite common in Zambia – and probably even more so in a mining era.

This research was solely funded by the author, as a labour of love, a gift to the province which had become an important part of her life from 2001.

The document was mostly written between 2014 and 2016, with subsequent editing and some photographs and small points added later.

Explanatory Note Regarding The 'Copperbelt' and the term 'Boom'.



Map 1: The Central African Copperbelt. Credit: Taylor, C.D., Schulz, K.J., Doebrich, J.L., Orris, G.J., Denning, P.D., and Kirschbaum, M.J. Geology and nonfuel mineral deposits of Africa and the Middle East, USGS, 2009. Open-File Report 2005-1294-E.

It is to be appreciated that the North Western *copperfields* are a somewhat different entity from the Central African Copperbelt which runs through both the Democratic Republic of Congo (Congo DR) and northern Zambia in a *belt* formation (see Map 1). The Zambian part of the 'Copperbelt' is located about 200 kms east of North Western province and began to be worked seriously from the 1920s. It became one the largest copper producing areas in the world in the 1950/70s, with five major mines clustered around the same *belt* of rich copper mineralization. Private companies managing the area developed thriving modern towns with all amenities and services and the area became the most urbanized in Africa. The industry was the backbone of the Northern Rhodesian economy and enabled the country to achieve middle income status - until it experienced a major downturn from the 1980s. Both areas were reliant for their success on the progress of the building of the *Cape to Cairo* railway which arrived in Broken Hill (Kabwe) in Zambia in 1905 and in Elizabethville (Lubumbashi) Katanga in 1910. Similar mining developments occurred over the border in Katanga area of the Congo DR run initially by the Belgians.

How the North Western province is different, being '*fields*' rather than part of the '*belt*', is discussed under the section on 'Not the New Copperbelt'.

The term 'boom' is used because, firstly, of the speed at which the changes occurred and secondly, the extent of those changes, including the establishment of the three large (by global standards) mines and the associated developments, including a population surge.

OVERVIEW of MAIN AREAS of RESEARCH



Structure

The schematic opposite provides an overview of the areas examined in this research.

The manuscript contains the main aspects of the story. Other related information is available online at margocall.wordpress.com. It is hoped that readers will see the document as a whole, with parts connected in various ways and not just hone in on specific aspects without taking into account the broader context..

Part One provides the background to this mining boom, including the history of mining in the province and notes how it was different from the situation of the well-known *Copperbelt* 200 kms to the east.

In Part Two, an overview is provided of the three large mines and their impact on their local communities. The Kansanshi development involved a major expansion of an old mine situated on the edge of the provincial capital, Solwezi town. In contrast Lumwana and Kalumbila (Trident) were *greenfields* and located in lightly populated, un-developed rural areas over 80 kms from town. All three mines were situated in Solwezi district, therefore all (initially) came under the auspices of the Solwezi Municipal Council. The major mines were open pit and large by global standards. Copper is the most common product but gold, cobalt and nickel are also mined, along with other minerals in minor quantities. Minerals mined in some places are radiation-bearing. While the experiences of each mine and their impact on local communities had some similarities there were also distinct differences because of their locations, the nature of the Chiefdoms, the capacity and style of management of the companies and their approaches to social matters, and the extent of involvement of government (both local and national). A number of issues generic to all major mines are also discussed.

Part Three describes the other mining related developments which impacted less intensely but more widely, including a large increase in exploration, and to a lesser extent, smaller scale mining all over the province, but mostly in Solwezi District. This proliferation was a form of 'mining fever', many overly excited about the possibility of cashing in on the increased price of copper and gold. Also discussed in Part Three are other developments such as mining related infrastructure and the expansion of businesses and employment opportunities which also boomed in direct response to the opening of the big mines. Table 1 provides a summary of the major developments and their timing.

The mining boom also impacted on particularly important aspects of life, including government, and culture as described in Part Four.

Part Five provides overall reflections on the overall impact of the mining boom on the province.

To reduce printing costs other related material will be available online when ready: margocall.wordpress.com The additional material includes short papers on sectoral issues and overview of Meheba Refugee Settlement; publications related to this research and two bibliographies (NWP General and Agriculture/Forestry/Bee-Keeping/Fishing).

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ACRONYMS

AGIP Azienda Generale Italiana Petroli—General Italian Oil Company, now Eni

AIDS Acquired Immune Deficiency Syndrome

AIF Annual Information Form

AMT Artisanal Mining Licence

ARVs Anti-Retrovirals (drugs)

AMT Artisanal Mining

ANU The Australian National University

AU African Union

BA Bidding Area

Boma – actually not an acronym but the common name for an administrative centre

BSAC British South Africa Company

c circa (about)

CAD Community Affairs Department (Kalumbila)

CAP College of Asia and Pacific

CCA Community-Company Assessment (process)

CDD Climate Compatible Development

CDF Community Development Fund

CEC Copperbelt Energy Company

CES Coastal and Environmental Services

CF Conservation Farming

CEJ Centre for Environmental Justice

CEO Chief Executive Officer

CHAMP A not for profit organisation conducting corporate HIV /AIDS programmes in Zambia

COGEMA Compagnie Générale des Matières Nucléaires, an industrial group majority owned by the French State through the French Atomic Energy Commission, now known as Areva

CRS Catholic Relief Services

CSO Central Statistical Office

CSPR Civil Society for Poverty Reduction

CSR Corporate Social Responsibility

Cymax Cyprus Amax Zambian Corporation

DA Development Agreements

DDCC District Development Coordinating Committee

DHS Demographic Health Survey
 DRC Democratic Republic of Congo (or Congo DR)
 ECZ Environmental Council of Zambia
 EIA Environmental Impact Assessment
 EIS Environmental Impact Statement
 EITI Extractive Industry Transparency Initiative
 ERM Environmental Resources Management Inc.
 FQML First Quantum Minerals Ltd.
 FRA Food Reserve Agency
 GBV Gender Based Violence
 GDP Gross Domestic Product
 GFC Global Financial Crisis
 GIS Geographic Information Systems
 GIZ A German international development agency
 GRZ Government of the Republic of Zambia
 Ha hectares
 HANSHEP Harnessing Non-State Actors for Better Health for the Poor
 HIV Human Immunodeficiency Virus
 IECC Inter-Agency Environmental Coordinating Committee
 ICMC International Council on Mining and Metals
 IDP Integrated Development Plan (GRZ)
 IFAD International Fund for Agricultural Development
 INGO International Non-Government Organization
 JCTR Jesuit Centre for Theological Reflection
 KHPL Kabompo Hydro Power Limited
 Km Kilometre
 KML Kalumbila Minerals Limited
 KMP Kansanshi Mining Plc.
 LIDP Lumwana Integrated Development Plan
 LMC Lumwana Mining Company
 LML Large-scale Mining Licence
 LSP Large Scale Prospecting Licence

LWF Lutheran World Federation
 MACO Ministry of Agriculture and Cooperatives
 M&E Monitoring and Evaluation
 MFEZ Multi-Facility Economic Zone
 MMMs Mining men with money
 MP Member of Parliament
 NAPSA National Pension Scheme Authority
 nd no date
 NAZ National Archives of Zambia
 NGO Non-Government Organization
 NGOCC Non-Government Organizations Coordinating Council
 NIPA National Institute of Public Administration
 NRC National Registration Card
 NWP North Western Province
 NWR North West Rail
 OHS Occupational Health and Safety
 PACRA Patents and Companies Registration Agency
 Phd Doctor of Philosophy
 PL Prospecting Licence
 PLc Public Limited Company
 PP Prospecting Permit
 PR Public Relations
 RAP Resettlement Action Plan
 SADC Southern African Development Community
 SC Senior Chief
 SGL Small Scale Gemstone licence
 SMC Solwezi Municipal Council
 SML Small Scale Mining Licence
 SNV Netherlands Development Organization
 SSMP Social Sustainability Management Plan
 STIs Sexually Transmitted Infections
 TLC Tanganyika Concessions Ltd. (or 'Tanks')

T5 highway from Chingola through Solwezi town and beyond to Mwinilunga

UN United Nations

UNDP United Nations Development Program

UNEP United Nations Environment Programme

UNESCO United Nations Education, Scientific and Cultural Organization

UNFPA United Nations Population Fund

UNHCR United Nations High Commissioner for Refugees

UNIP United National Independence Party

UNZA University of Zambia

VAT Value Added Tax

WHO World Health Organization

ZAMI Zambian Alternative Mining Indaba

ZARD Zambian Association for Research and Development

ZCCM-IH Zambian Consolidated Copper Mining-Investment Holdings

ZEHT Health Education and Communications Trust

ZEITI Zambia Extractive Industry Transparency Initiative

ZEMA Zambian Environmental Management Agency (previously the Environmental Council of Zambia)

ZESCO Zambian Electricity Supply Corporation

ZIMEC Zambian International Mining and Energy Conference

ZPPA Zambia Public Procurement Agency

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Local Terms:

Nsaka – outdoor grass roofed, open sided shelter used for small gatherings or cooking

Indaba – meeting for a specific purpose

Dambo – damp area

Induna – Sub-Chief

Chitenge – woman's skirt wrap

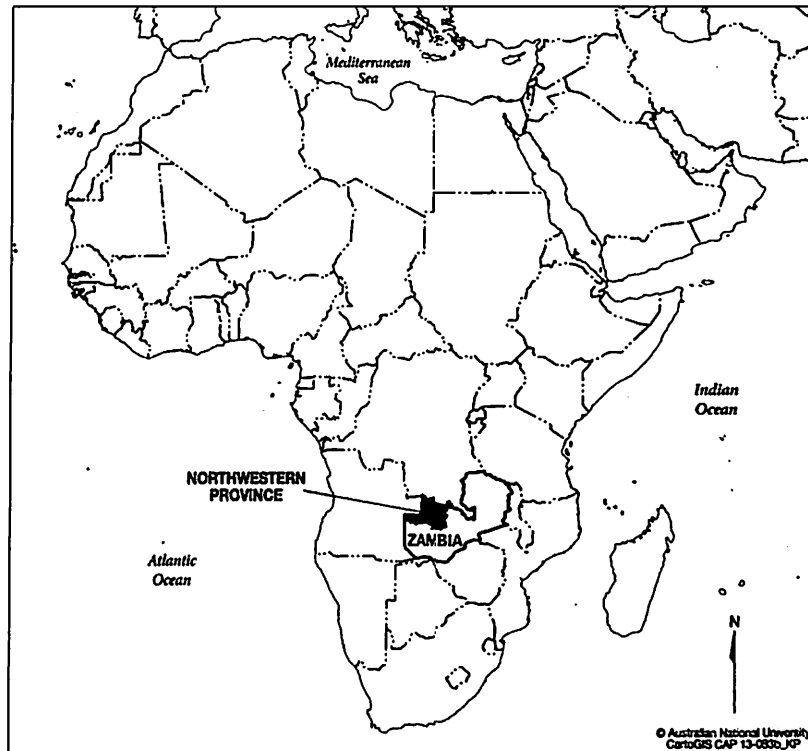
Boma – seat of government

Photographs are numbered within each section but are not listed.

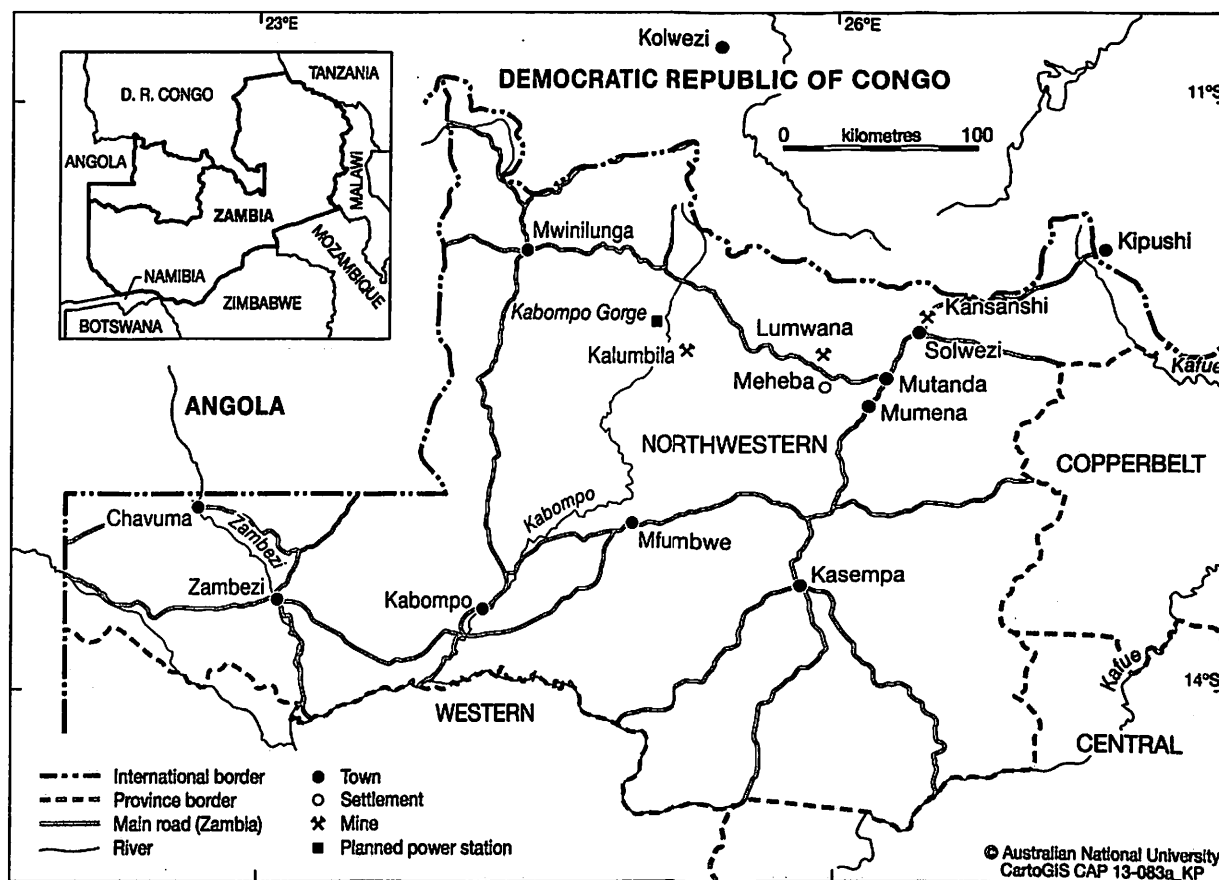
PART ONE

BACKGROUND

- The Province
- North Western Province's Mining History
- NOT The New Copperbelt



Map 2: Map of Africa with Zambia and North Western province marked. Credit: Carto GIS, CAP, ANU.



Map 3: NWP with major mines, district headquarters, and major roads and rivers locations plus new hydro. Credit: Carto GIS, CAP, ANU.

The Province

Zambia is a land locked country in southern Africa (Map 2). The North Western province is bordered by Angola and the Democratic Republic of the Congo (Congo DR) and three other Zambian provinces (Map 3). It is Zambia's second largest province covering an area of 125,826km² and well-watered with large rivers, many streams and dambos.³

The province is largely forested with flat or gently undulating countryside. (Figs 1, 2 and 3) The western part has sandy soils and includes the upper reaches of the great Zambezi river which flows south along its western border. The population was recorded as being 583,350 in the 2000 and 727,044 in 2010, constituting a 2.2% annual growth rate. There was and still is, a very low population density in most parts of the province, with 4.6 persons per km² recorded in 2000 and 5.8 in 2010. The majority of the population (77.4% in 2010) was still rural and widely dispersed in numerous small hamlets, many clustering along roadsides. Higher densities occur in the eleven district towns, with the largest population being in the provincial capital, Solwezi.⁴

Solwezi town is situated in Solwezi district, 577 kms north-west from the Zambian capital Lusaka which is the seat of government of the Republic of Zambia (GRZ). Travelling from Lusaka via the 'Copperbelt' which lies to the north of the national capital, it takes about ten hour's driving, in normal conditions, to reach Solwezi town. The T5 highway runs from Chingola on the western edge of the Copperbelt to Solwezi town then to Mwinilunga and shortly thereafter the Angola border. (Maps 3 and 10). Running north of Solwezi town an unsealed road leads to Kipushi, a busy trading centre on the Congo DR border. All districts are linked by main roads which are now sealed, although they are not necessarily in good order. The numerous side roads are unsealed.

Solwezi town is home to the provincial and local government offices as well as the Solwezi District Municipal Council. The other district centres (*boma's*) are minimally resourced and electricity has yet to reach some of them, diesel generators being the alternative (and expensive) source of power, but with solar panels increasingly being used.

Most non-urban people in the province live traditional lifestyles largely focused on subsistence farming, but increasing numbers produce some crops and forest items such as charcoal and wood for sale, and, seasonally, items such as honey, pineapples and mushrooms. Some sell their labour and/or engage in petty trading.

Crops grown include millet, sorghum, cassava, maize, pineapples, and vegetables, the latter usually being grown in dambos. This style of farming involves living away from the hamlets in temporary shelters in the fields during the preparation and harvesting seasons. There is also considerable seasonal movement to fishing areas. Some cattle are kept, mostly in the western areas. Honey has been a successful export, including to Europe.

The forests, dambos and streams are accessed for a variety of often seasonal natural products, including wood, honey, mushrooms and small fauna. The North West has a long and heavy wet season, usually from about November to April.

³ A dambo is a "seasonally waterlogged, predominantly grass covered, shallow, linear depressions ..." (Acres et al, 1985). When gardened they are called 'streambed gardens' and are suited to growing vegetables.

⁴ All population data from the 2000 and 2010 national censuses, mostly not reflecting the mining induced increase.



Fig.1: Gently rolling hills in parts, with large, south flowing rivers. East Lunga river, Kasempa District, 2012.

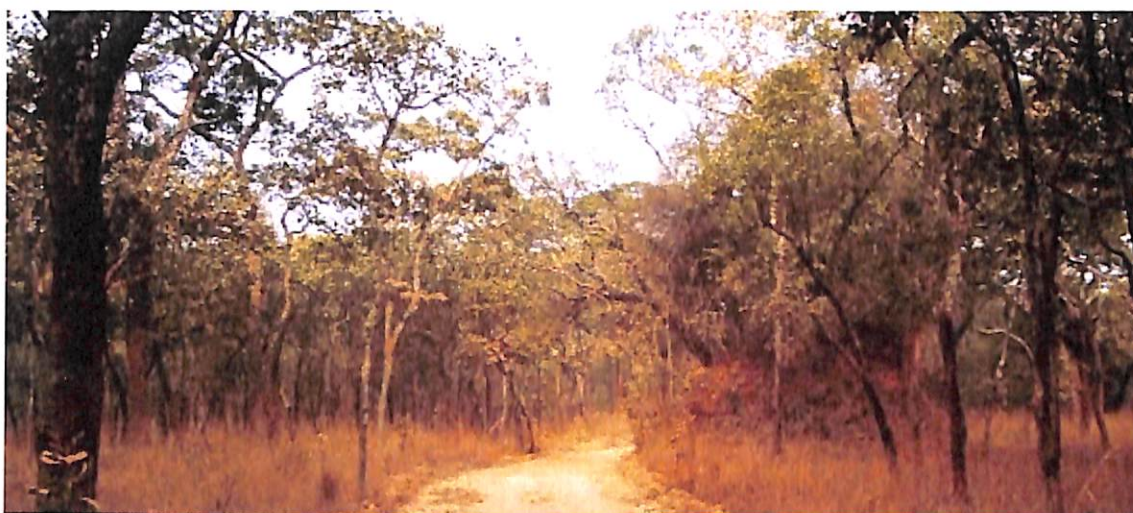


Fig. 2: Much of the province is flat, and still well covered with Miombo woodland, with tracks linking villages to the main roads, Kasempa District, 2012.



Fig. 3: Land partly cleared for small scale farming, with many large termite mounds. Mumena area, 2013.

Prior to the major upscaling of mining developments in the 2000s the Province was characterized as being remote and un-developed, poorly serviced and disadvantaged, with low levels of education and high levels of poverty. Crehan (1997) referred to it as being ‘... historically excluded from capitalist development’ – partly explaining its reputation for being unimportant and backward. Contributing to the province’s perceived disadvantages were its geographical isolation (Map 2) and that it had been largely a no-go-through area for two decades because of the presence of the bordering Angola and Congo DR civil wars which occurred approximately between the years 1980-2000.

The province was once home to indigenous communities, the Batwa/Twa, a hunting and gathering people, but they were assimilated by incoming Bantu migrations or pushed to remote corners like Lukanga swamps (Brelsford, 1965). It is now largely inhabited by Luba-Lunda migrants from Angola and the Congo who settled there between the sixteenth century A.D. and 1925 (Chabatana, 2009).

North Western rural communities, which are very small (six to twenty families), used to cluster along streams which are prevalent in the province, but with the advent of motorized transport many moved to roadsides (Jaeger, 1981). In the past communities tended to be only tenuously connected to modernizing Zambian society through occasional visitors, or family members coming and going for urban jobs. A few communities had been involved with large-scale ‘development’ projects such as those in the Kasempa and Mwinilunga areas in the 1980s, and NGO activities including the World Vision project in Kalumbila area. International church missions provided support to some health and education facilities. Meheba Refugee settlement was a hive of activity from 1971, with multiple agencies involved. Water points were widely distributed at one stage, mostly in the 2000s. Many communities had been exposed to religious groups and were actively involved with their churches (which were of varying degrees of formality, some being quite small). The number of different types of churches was large even before mining (e.g. twenty-four in about one km length west of Solwezi town area in 2003) and were said to have increased thereafter. Their proliferation has been commonly referred to as ‘a *salvation supermarket*.’ But because of the distances rural life was essentially quiet, mainly focussed on subsistence farming and fishing and accessing forest products.

Despite various attempts to initiate industries over the decades, such as the Mwinilunga pineapple factory, few persisted. Yugoslavians commenced work on establishing an iron and steel plant (Tika) at Kisasa in late 1970s, with an expected output of 60,000 tonnes per annum but the government reneged on the project and sued for breach of contract (Mucheleng’anga, 1993). More recently however, the production and sale of honey, cassava and pineapples, as well as fish, some timber cutting and a handful of erratically functioning medium and small-scale mining activities have been reasonably successful in some parts of the province. The constraints to the scaling up of agricultural production included difficulties in accessing markets because of the distances, the poor condition of minor roads and lack of transport. Inadequate provincial budgetary allocations contributed to difficulties in providing agricultural extension services and supplies, as did erratic government policies.

Access to other services such as health and education has also been problematic for similar reasons. Mission hospitals have provided a valuable addition to government services. Education levels have been low for historical reasons as explained by Wilkin (Wilkin, 1983). Because of the minimal services and facilities and its geographical isolation, the province had not, in the past, been regarded as a desirable posting for civil servants who were the major wage earners in the area.

Health-wise, communities were commonly affected primarily by malaria, respiratory infections and diarrhoeal diseases. Maternal mortality was high due to the lack of family planning and ready access to quality maternity and obstetric care and also to cultural beliefs which delayed accessing those services which did exist. Child malnutrition was high. Before the mining boom HIV prevalence in NWP had been amongst the lowest in Zambia (but was still high by global standards, at 8%). The highest levels occurred in urban areas, with some rural cases being due to people coming from towns to their home villages to die i.e. before Anti-Retrovirals (ARVs) were readily available from the early 2000s. (GRZ/National AIDS Council, 2014).

Traditional culture is still very strong in the province, with communities led by approximately⁵ thirty-three traditional Chiefs ruling three main tribal groupings, assisted by Headmen. Most communities are now quite mixed and include a few people from other provinces. The main local languages are Kaonde, Lunda and Luvale with English being spoken by those with higher levels of education, including those men who have worked on the Copperbelt or in Lusaka, which was a common practice for many decades.

Meheba Refugee Settlement

Meheba is situated about 75 kms west from Solwezi town on 720km² of land south of the T5 and close to Lumwana mine (see Map 2 and Figs. 4a and b). It used to be Zambia's largest refugee settlement, hosting some 55,000 people at its peak. It still houses a significant number of residents, having reduced significantly during the 2000s but increased again to 14,000 in 2019 due to regional disturbances (UNHCR, 2019 data). Meheba is mentioned here because of its proximity to the big mines, especially to Lumwana, and because of its size and history of agricultural productivity (more details appear on the author's website).



Fig.4a: The Meheba signpost at its entrance on the edge of the T5, close to the Lumwana mine.



Fig. 4b. Typical Meheba settlement scene, like a very large rural village. Credit: Caritas Czech Republic, nd

⁵ Approximate because some positions have been cancelled and some appealed against.

North Western Province's Mining History



Fig. 5: Copper croisette.

Box 1: 'In the past, copper extraction and casting was the prerogative of a mysterious guild called "the copper eaters", members of a sort of secret society, a "bwanga". They were the only ones who were able to remove the copper ore and work it. Production of this precious metal was surrounded by rituals, professional secrets, traditions and magic....' Credit: <http://www.nbbmuseum.be/en/2010/07/katanga>.



Fig. 6: Early colonial workings, Kansanshi mine, 1901. Credit: National Archives of Zambia Zambia (NAZ).

Mining also has an ancient history in parts of the North West, having been undertaken for many hundreds of years in a number of places. The Kansanshi site in particular was a regional centre for producing and trading copper products for varying periods over the centuries. In 1901, the Northern Rhodesian colonials initiated a new mining era at Kansanshi (Fig. 6). More information on that history follows.

With the coming of the colonials and their own tools and mining techniques the art of traditional smelting began to die out. But Musambachime reported (2016), that some interest was maintained as shown by the re-enactments of the smelting copper process at agricultural shows in the 1950/60s. He describes how at one such event in Solwezi a Kaonde named Ndungu demonstrated the skill, which the government Information Services filmed. Another film, *Kansanshi* (Malachite Films, 1971) and relates the story of the Kansanshi mining area, with local history and processes re-enacted.

Bisson (1980) reported that by 1971 Kansanshi was the only remaining major prehistoric mine site in the country, the others having been destroyed by modern mining. It is fortunate that the films and some early 1900s photos exist as nothing remains now of the ancient sites.

The Early Colonial Era

Various colonial District Notebooks (NAZ) reported that sporadic exploration was being undertaken from the late 1890s by would-be miners from many other countries, including the USA, Canada, Europe and England. Some relatively small-scale mining was reported as having taken place from the early 1900s, especially in the Kasempa area, but also at Kansanshi as described later.

Kasempa District Magistrate Melland (1967) who spent eleven years in the area (1911-1922), also reported that:

Mining has been the only industry; and at one time hopes were entertained that many mines would be working the industry... Various properties, mostly copper or gold, have been worked experimentally at different times on the south-east and on the north of Kasempa, especially in the area between Kasempa and Kaimbwe, but so far nothing really payable has been discovered. (p. 23)

The District Notebooks also include references to many having arrived, prospected and gone i.e. if they hadn't died of malaria or other problems. The grave markings in the old Kasempa and Kansanshi (Fig. 7) cemeteries attest that the latter happened quite frequently, with some being quite young.



Fig.7: Sign up at the Kansanshi cemetery. Credit: Geneological Society of South Africa.

An entry in the Mwinilunga District Notebook indicates the extent of the changes occurring in the North West in the early part of the twentieth century. It recorded that the 1921 Census of Europeans gave a figure of 2,262 males (and 1,372 females) in the area. This was a 142% increase over the number recorded in 1911, which must have at least partly been due to mining. The numbers of females being present seems remarkable given the very basic conditions prevailing at the time. Presumably they were the wives and female children of colonial officers, missionaries, a few would-be farmers and traders. South Africa Magazine (1914) reported that District Magistrate Melland's wife even gave birth in Solwezi in November of that year i.e. she hadn't left for the medical facilities available in Lusaka or another city in the region. Further illustrating what an intrepid woman she must have been, Melland recorded that she often accompanied him on a bicycle or in a hammock (*machilla*) on his duty safari's around the District.

Another aspect of the early history of mining in the region was that from as early as 1915 local men were recruited by labour agents to go off to work on the colonial mines on the Copperbelt, to Katanga over the border in Congo DR and even further afield (Daniel, 1979 and Perrings, 1979). Their recruitment usually related to having to earn cash to pay taxes, (a law which was introduced in 1904) (Daniel, 1979, p. 63), so such labour seeking was far from being voluntary, especially when recruiting agents were involved. Consequently, a century ago men from the region had become familiar with the nature of colonial mining and industrial life and brought home tales of the more modern world, as well as various household items and clothing (and paid their taxes).



Fig. 8: (L) Jifumpa workings 1972. Credit: D. Jaeger. Fig. 9: (R) One of the now unworked Jifumpa mine pits, with Jaeger reminiscing forty years later, with comparatively large-scale pits remaining, Kasempa, 2012.

There were negative social and economic impacts (just as there are now): The District Notebook quotes Chief Kapeshi at the April 1922 salt pan indaba⁶ as complaining that ‘My people go away to work but I get nothing...’. Chief Chinsengwe was also reported as saying that ‘A man who goes away for three years must expect to find his wife has left him if he sends her no money.’ (Kasempa District Notebook, p.150). Such complaints also resonate in more recent times.

Parkin (1980) noted that prospecting had also been undertaken over much of the province (which changed its name over the decades) between 1927-1940 by Rhodesia Congo Border Concessions Ltd; that the first geological map of the region had been prepared by Bancroft in 1940 and that geophysical and geochemical prospecting techniques were used in the 1950s, and identified for the first time, radioactive deposits (which included the Lumwana site).

He also pointed out that although the province was geologically part of the rich metalogenic zone which runs through the Copperbelt and Shaba (Katanga) province in the Congo there had only been two commercially successful mines (albeit both intermittently) as at 1980 i.e. Kansanshi and Kalengwa (in Mfumbwe District). However, Jifumpa (Kasempa) (Figs. 8 and 9) has also been profitable at times. Parkin explained that while various deposits existed all over the province, few were considered to be economically viable, for a variety of reasons (as discussed in the next section). The map (compiled in 1980) contained in Parkin’s article includes many names which are still current today including Luamata, Chifumpa, Jumbo and Buffalo - but few have proved to be economic for more than short periods, and many, not at all.

Pritchett (2007) described the mining situation in Mwinilunga district in the 1950s:

One international mineral survey party after another wrote glowing reports about the mineral potential of Mwinilunga throughout the 1950s.” (p. 132), and “Deposits of gold, diamonds, emeralds, copper, chromium, lead, and uranium have been located by mineral survey companies over the years. After the initial euphoria these companies came to realise that these deposits are too thinly dispersed and thoroughly intermingled to make commercial scale extraction commercially viable. Nevertheless, each new report sends the local imagination soaring. New roads and bridges were built to facilitate further exploration. (Notes, p. 246)

⁶ Indaba – meeting/gathering to discuss important matters.

It can be seen from these reports that exploration and some mining were quite common throughout the North West during the colonial era but despite the glimmers of hope, little of substance resulted. While medium sized mines such as Kalwengwa (with unusually rich ores), and Jifumpa, and for a short while the smaller Luamata, did make some profits, these activities did not add up to a mining *boom* for they were all relatively small scale, often functioned sporadically and so had limited and erratic local impact.

The influencing factors during those decades were low and erratic global prices, challenging geology, inadequate technology, lack of infra-structure and un-affordable transport options. The situation of government was another influencing factor. In more recent decades the proximity of the neighbouring Angolan and Congolese wars which persisted for some twenty years made the border areas a largely no-go space until the early 2000s. The major exceptions were refugees fleeing into Zambia and some gun-running and diamond smuggling. For mining to take off in the North West all of these constraints needed to be over-come, which they largely were, by the early 2000s.

The Enabling Factors for the North West Mining 'Boom' of the 2000s

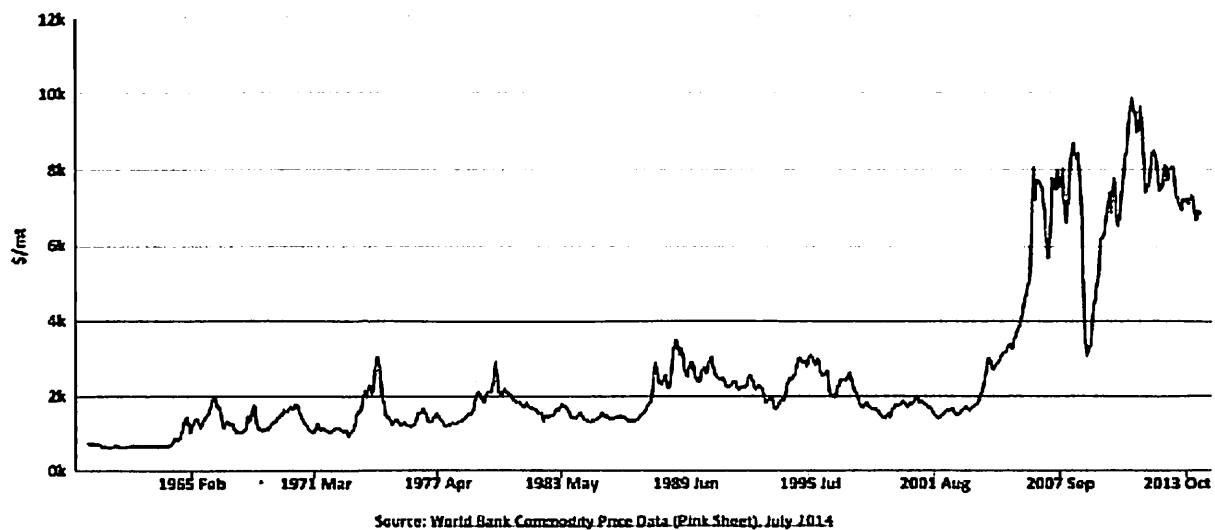


Fig. 10: Historical Copper Prices – US\$/metric tonne, 1960s-2013. Credit: 13th July 2017, Copper Investing News: '... spot COMEX copper prices have risen roughly 23 percent over the past year, but have gained 208 percent since 2000. Although this major increase doesn't account for inflation, it is still a sizable gain. What's more, copper prices were more or less on the rise during the latter half of the 20th century.'

The North West mining 'boom' was primarily enabled by a significant rise (a 'super cycle') in the global price of copper in the 2000s. This surge briefly reached the historically record-breaking price of just over \$9,000 per metric tonne in May 2006 (see Fig.10). Briefly affected by the Global Financial Crisis around 2008/9 the copper price then sank but recovered quickly and mostly stayed relatively high into the second half of the decade. In early 2011 it reached an even greater record breaking \$10,000 but again fell, to below \$8,000 where it stabilized for some time until it sank to \$4,330 in early 2015. By mid-2018 it had recovered to around \$6000 (Cotton, 2018). There were similarly record-breaking prices for gold and some other minerals, all largely driven by China's greatly increased demand for metals during the decade.

Such sudden and sometimes dramatic fluctuations in mineral prices like these are the harsh reality of the mining industry the world over. It is a situation which companies, governments and investors know to expect, and for which they need to plan.

But the high prices in this decade were enough to help them break through the barriers which previously stopped large scale mining in the North West from reaching fruition. Additional factors were new mining technology and enabling government policies which helped to over-ride the disadvantages of relatively low copper grades, the disconnected, fields-like spread of the deposits (as can be seen from Map 4) and the lack of existing infrastructure. That the country was relatively peaceful (compared to other countries in the region) and (more or less) politically stable, was also seen as an attraction to companies.

However, overcoming infrastructure constraints became part of the costs. Electricity required to run the mines had to be brought in and housing and related facilities had to be constructed. Unusual in mining history, this was also a boom without a railway. The latter would have had Cecil Rhodes rolling in his grave on the Matopos Hills. And yet the nearest rail system ended at Chingola on the Copperbelt, only 180 kms east of Solwezi town. Consequently, other forms of heavy transport had to be used, as discussed in Section Three.



Fig. 11: (L) City Square, Kitwe, well planned. Credit: www.panoramio.com nd. but circa 1950s. Fig.12. (R) Unlike Solwezi town in 2013 with one beautiful local tree (but since removed to make way for road widening).

NOT the 'New Copperbelt'

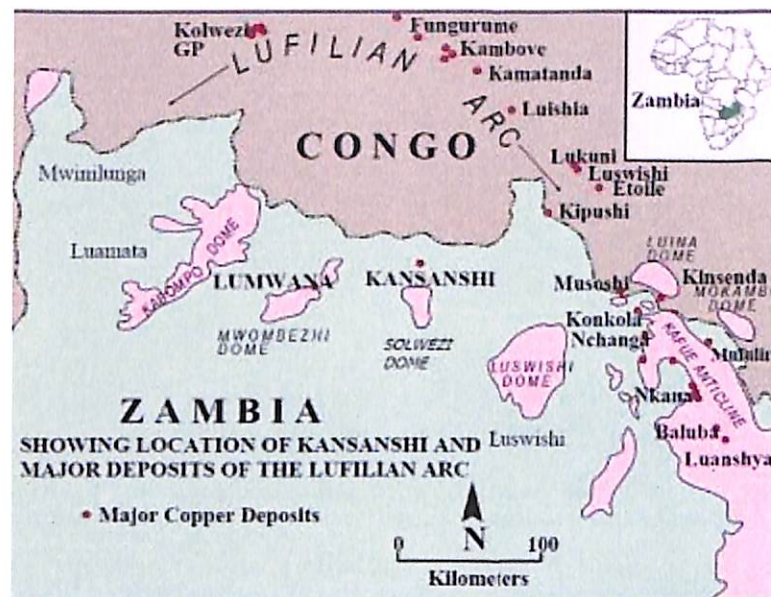
It has often been said by the public, academics and the media, that this mining boom made the North West The *New Copperbelt*. However, this title is very misleading for there are many differences and few similarities. The *Copperfields* would be a more accurate name, as explained below (O'Callaghan, 2019b).

This myth needs to be dispelled, especially as it creates expectations which are completely unrealistic in the current era. One of the few commentators astute enough to recognize this reality was the then Bishop of Solwezi, Dr. Alick Banda. He commented at the NGO-led First Mining Watch meeting held in Solwezi in 2008 that 'We cannot over-state the distinct situation of the mining sector and of local communities in North Western Province, as compared to the Copperbelt ... unique circumstances ...' He also added that we should '... yet not fail to keep one ear attuned to those lessons learnt from the experience of the Copperbelt that may be of assistance.' (CSPR/Caritas Solwezi, 2009).

An article by Matt Pascall, FQML Director of Operations (2016), helps to explain the primary reason why the North West is 'Not the New Copperbelt.' He began with the remark that 'There is a lingering sentimentality in Zambia which tends to see the "good old days" of the nationalized mining industry through rose-tinted lenses.' He also pointed out that those 'good old days' had in fact been very expensive for the country.

But those 'rose tinted' sentiments have flavoured attitudes in the North West over the past decade, with many who remembered the old days feeling angry that the current mining companies had not provided the same level of employment benefits, social welfare services and facilities which characterized the Copperbelt under ZCCM (and indeed some of the colonial physical legacy). There have been no 'cradle to grave' employment and social benefits, no subsidized food (excluding maize), nor the colonial inheritance of well-organized public housing estates, African Welfare Centres or beautiful broad, tree lined boulevards in this mining 'boom', as can be seen from Figures 11-15 above and below.

There are a number of other reasons why the North West is not the *New Copperbelt*. Most significantly is that, as Map 4 shows, the spread of mineralization is scattered and field-like, unlike the belt-like formation further east.



Map 4: Regional Distribution of the Central African Copperbelt Deposits. Credit: The Kansanshi Copper Project, NWP Zambia, Technical Report., Feb. 2003, Fig. 7, p. 19, illustrating the 'fields' rather than a 'belt' of mineralization as occurs on the Copperbelt pictured to the east (in pink).

Also, the province generally has low copper grades, factors (under 1%) which have implications both for the economics of starting a mine, for mine size and profitability. In contrast, the neighbouring Copperbelt/Katanga region, had grades of copper averaging 2-5%, being amongst the highest in the world.

Also, because two of the recent mine developments are new (*greenfields*) and Kansanshi was a major upgrade there were almost no heritage issues, unlike on the Copperbelt where old infrastructure and pollution plague the sites. The North West mines are different too, being open cut and consequently safer and cheaper to work than the underground Copperbelt mines. Consequently, working conditions are better and accident and death rates are likely to be much lower.

Another difference is that the modern technology used in the North West mines requires less workers and better educated/more skilled ones. In addition, the mining industry is now privatized and much labour is sub-contracted - consequently unions are weaker than they were on the Copperbelt.

Also, women now play a more active role in the industry and not just in traditional roles, and many of the senior positions are now held by Zambians. Conditions of service are different too, with much less certainty about longevity because of sub-contracting.

In the old days a very efficient police force limited entry to mining areas largely to workers and their families so there was little of the chaos which has resulted in recent times and the numbers of unemployed was minimal as they were meant to return to their villages. Such a situation was very different from that existing today where there has been no control of the influx, many people are un- or under employed and housing is informal and chaotic in many areas.

Perhaps the most significant difference is that in the Zambian Consolidated Copper Mines (ZCCM) era Copperbelt mines were run as a miniature welfare state, heavily subsidised and with many aspects of local life controlled by the company.

Mondoloka (2017) described the situation as follows:

The ZCCM era, which lasted from the 1970s until the commencement of privatization in the mid-1990s was a golden era for government largesse disguised as CSR. ZCCM paid no taxes but built the infrastructure, and provided practically all the social services, that were, ordinarily, the responsibility of the local authorities in the mining areas. The result has been a lingering confusion in the minds of the public as to the nature of CSR and the respective responsibilities of the government, on the one hand, and the mining companies, on the other.

He went onto say:

Mining companies in Zambia [today] are, therefore, faced with a massive expectations gap, which is worsened by the government's continuing failure to undertake the necessary development projects, and deliver corresponding social services, in mining communities.

Consequently, the Copperbelt experiences should not be used as a gauge as to how things should work and what expectations people should have of the North Western mining boom. To do so is very misleading and falsely raises people's expectations about what to expect. This has been a mining boom taking place under Zambian conditions, and all that implies.

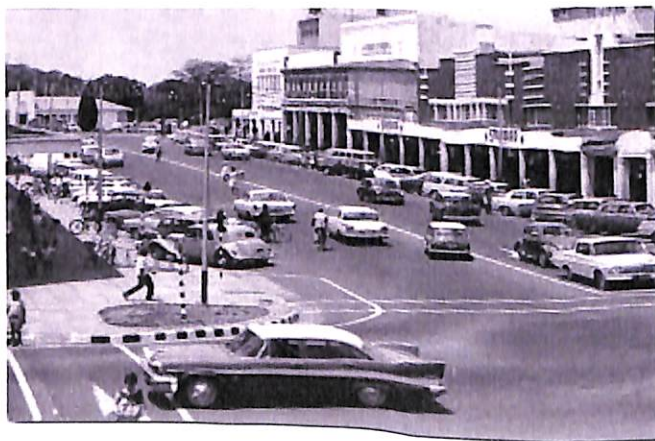


Fig. 13. (L) Kitwe 1955. Credit: British Empire Maproom/Northern Rhodesia. Fig. 14. (R). Ndola, c1930s.. Credit: Ndola.itgo.com



Fig. 15a: (L) In comparison, the main road through Solwezi town. Credit: Keywordsuggest.org nd. Fig. 15b: (R) The hardly impressive eastern entrance of Solwezi town, 2014. Update: Some Improvements occurred in later years, with a widening of Independence avenue, new sealing, a centre island and solar powered lighting.

Table 1 provides a summary of the developments which occurred in the new mining era.

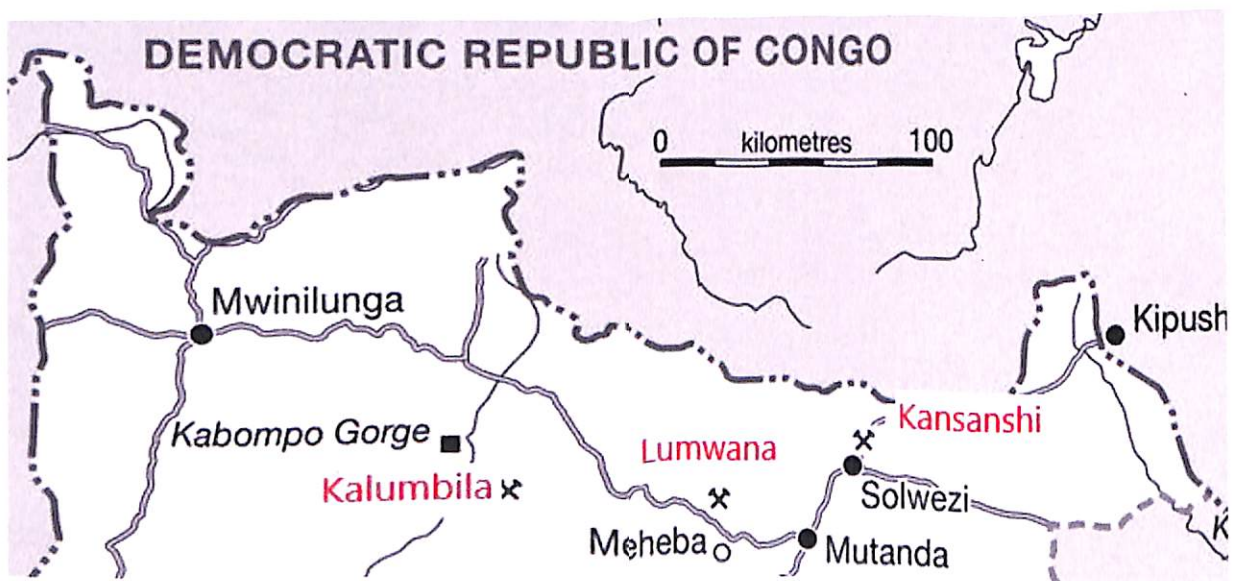
TABLE 1: SUMMARY AND TIMELINE OF MAJOR MINING RELATED DEVELOPMENTS IN NORTH WESTERN PROVINCE FROM 2002-2015				
Development and Company	Start Date	Location	Features	Chiefdom/ Responsibility
Kansanshi mine revival/expansion, FQML/ZCCM IH,	2002	Edge of Solwezi town	Urban, semi-urban and rural impact, series of re-settlements, loss of farmland, river and access to forests.	Kapijimpanga
Expansion of Solwezi town	2002+	Solwezi district	Large increase in population, much ad hoc housing of all types, loss of farming land, increase in commerce, boom in land sales, social inequality, services overloaded, demand for food.	Kapijimpanga, Mumena
Lumwana mine, Equinox, then from 2011, Barrick. New mine	2005	72 kms west of Solwezi town,	Rural impact, no resettlement, but some loss of farmland and access to forest and river.	Mukumbi, Mumena, Metebo
Growth of Manyama, Lumwana mine associated,	2005+	“ “	Large increase in population, much ad hoc settlement, social issues, lack of services.	Government
Kabompo Hydro, CEC	2009+ 2010	190 kms west of Solwezi town	Rural, large resettlement, loss of farmland, housing areas and access to forest and rivers	Sailunga/ Musele,
Two diversion of the Congo road, to accommodate expanded Kansanshi tailings facility.	2005/6 and 2013	East of Kansanshi mine site	Communities east and SW of mine site became more distant from town, including Mbonge, Kyafukuma and Kamatete, but Kabwela advantaged. Trip to New Israel and Congo border longer for all travellers	Kapijimpanga
Kalumbila mine (Trident), KML/FQML new.	2010	147 kms, SW of Solwezi town	Rural, large resettlement, loss of farmland, housing areas and access to forest and dammed river.	Musele
Growth of Kisasa, Kalumbila related	2010+	On T5, near mine	Rapid increase in population, with ad hoc housing, social issues, services over-stretched	Musele, Solwezi Council
Increase in prospecting, small scale and artisanal mining	2010+	All districts	Rural, small scale disturbances, some employment, poor work conditions	Various
Development/continuation of old/ new medium sized mines	Various	Kasempa, Mfumbwe, Mwinilunga	All in rural areas, variable impact, some poor standards, abuse, corruption, court cases	Various
EIA for NW Railway	2011/ 12	Copperbelt-Solwezi district	Community consultations Chingola to Solwezi, rural and peri-urban, expectations raised, disappointments	Various
Power line Mumbwa-Kalumbila	2012	Kasempa and Solwezi districts	Largely uninhabited rural, little movement of households/community structures required.	Various
Kansanshi housing estates: Kabitaka, Kipemba planning.	2013+ 2015+	Solwezi town, east of mine. West of town.	Minor resettlement required. Some loss of farm -ands and aggregate sources.	Kapijimpanga Mumena
Smelter Rd upgrading	2014/15	Kansanshi mine site	Loss of some farm plots and minor buildings. Smelter: not relevant as on mine site.	
Kalumbila town	2014+	Next to mine site	Loss of some farmlands and some forest.	Musele



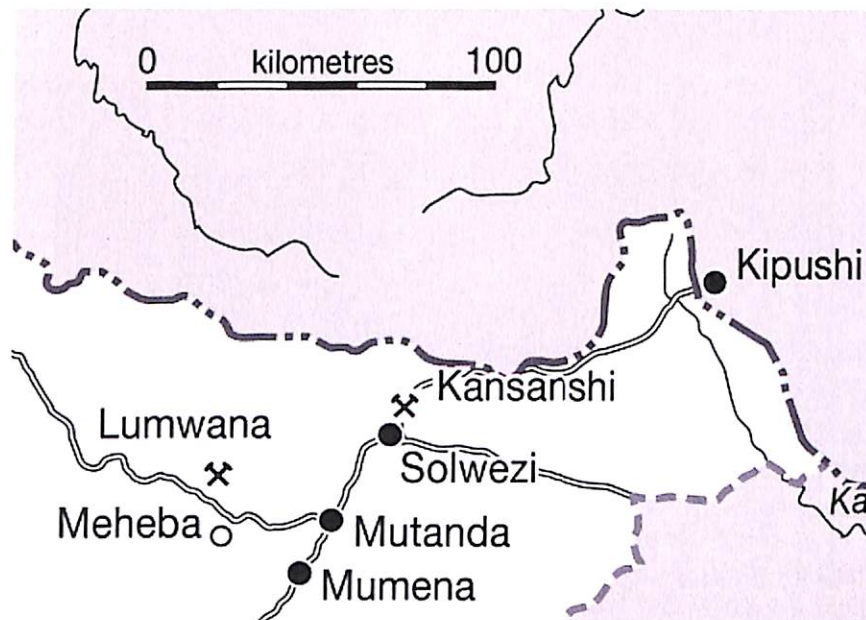
PART TWO

THE THREE MAJOR MINES AND THEIR IMPACT

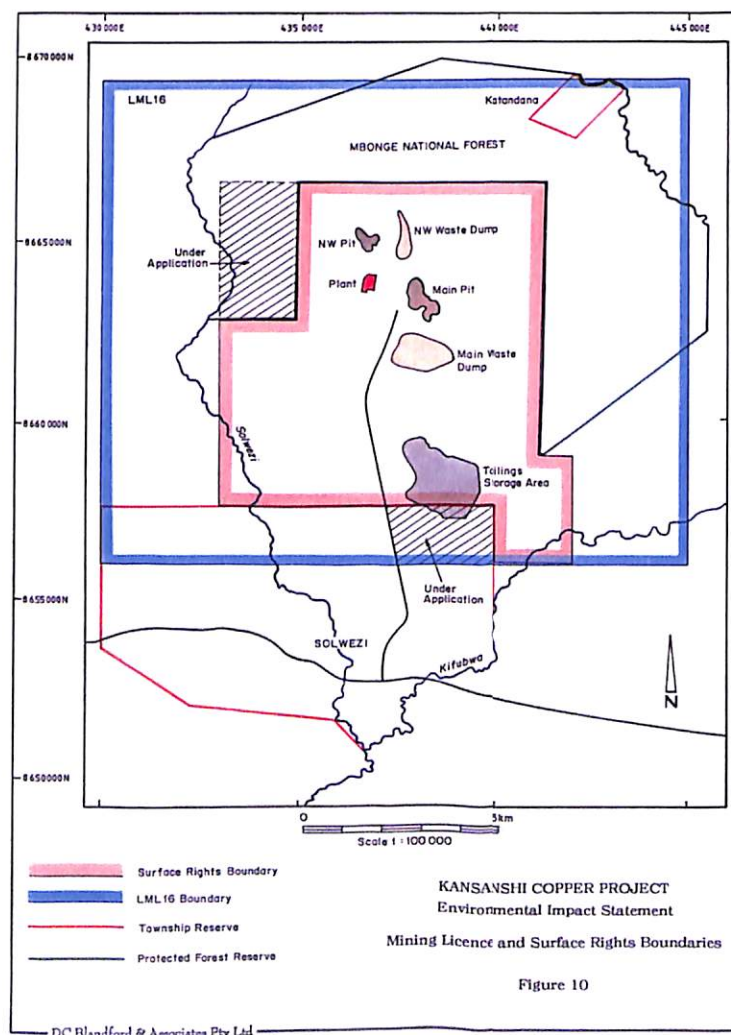
- Kansanshi
- Lumwana
- Kalumbila



Map 5: Part of North Western Province showing the three major mine sites: Kalumbila to the left, south of the T5 highway, Lumwana in the centre on its northern side and Kansanshi just north of Solwezi town, with the Congo DR border to the north. Kalumbila and Kansanshi are about 120kms apart as the bird flies and about 175kms by road. Kabompo Hydro site is also marked. Credit: Carto GIS, CAP, ANU, Extract from Map 3.



Map 6: Position of Kansanshi mine close to Solwezi town, and proximity to Democratic Republic of Congo to the north and Lumwana mine to the south west. Credit: Carto GIS, CAP, ANU, extracted from Map 3.



Map 7: Kansanshi project licensed area, as per 2002 Credit: D.C. Blandford and Assoc., EIS, 2002, p.24.

KANSANSHI MINE

Company: Kansanshi Mining Plc., (KMP), subsidiary of First Quantum Minerals Ltd. (FQML), 80% ownership, and ZCCM-IH, 20%. Copper, gold, silver and cobalt mined.

History

Kansanshi Mine is a *brownfield* mining site, meaning the site of an earlier mine, and in this case a revival and expansion. It is situated 180 kms west of Chingola on the western edge of the Zambian Copperbelt and 18 kms south of the border with Katanga province, in the Congo DR (Figs. 5 and 6). The mine site used to lie 10 kms north of and apart from Solwezi town, the provincial capital, but the spread of urban housing has now reached its boundary. It takes about ten hours by car to reach the site from Lusaka, the Zambian capital.

Situated in Kaonde Chief, Kapijimpanga's area, Kansanshi is the only current major North West mine which has a long known history, having been worked off and on using traditional methods since at least the fourth century AD (Bisson, 1980). Because of the ancient copper workings, Kansanshi was an important centre of trade and was socially and economically connected to similar activities in the neighbouring Katanga area. Bisson provides an overview of archaeological investigations undertaken over an eighteen-month period in the early 1970s in both the mining and smelting areas. The archaeology indicated that mining had been intermittent and with at least four different cultural groups exploiting the deposits over the centuries. The early diggings were found to be quite extensive, being over 100 feet deep and stretching for over half a mile in length. (see Figs. 17 and 18)) They were essentially still intact in 1971 but it is not clear how much was destroyed before FQML arrived on the scene as the Heritage assessment report was not located.

District Commissioner Short (1973) who served in Northern Rhodesia from 1950-1965, including the North West, reported being informed that the Kaonde had worked the mine under Arab slave traders at one period and that 'Heavy, rough Maltese [like] crosses of crude copper (Fig. 5) were still to be found in the villages; the price of a slave'. Coleman (1971) provides more information of the Arab presence in the Kansanshi area, including about a retired slaver, Chiwala, who lived there.

The modern Kansanshi mining era commenced in 1899 when the British South Africa Company (BSAC) secured (unspecified) mining concessions north of the Zambezi river. This included both the Kansanshi area, the future Zambian Copperbelt and Katanga (in the then Belgian Congo). Sarkka (2016) reports that the listing was made on the London Stock Exchange on 20th January 1899 and that, interestingly enough, the prospectus did not mention copper, the focus then being on gold.

This was at the same time that Cecil Rhodes, for business and imperial expansion reasons, was planning to progress the Cape to Cairo railway north of Bulawayo in Southern Rhodesia, the line having reached there in 1897. Such a development would put the enabling rail infrastructure within relatively easy reach of any new mines on the yet to-be established Northern Rhodesia and the Katanga *copperbelt* (although not as far west as Kansanshi). Gann (1969) reported that Robert Williams, a Scottish mining engineer and associate of Rhodes, was convinced that the Congo-Zambezi watershed had mineral potential.



Fig. 16: George Grey (centre) with his expedition team in April 1899, the day they set off from Southern Rhodesia Credit: NAZ collection.

Inspired by the rising price of copper⁷ Williams launched the company Tanganyika Concessions Ltd., (TLC) and was allotted an area within the BSAC concession. On 5th April 1899 he sent Englishman Captain George Grey from Bulawayo to explore the area allocated to them, some 850 miles to the north-west. Grey (1868-1911), was a younger brother of Edward, Earl Grey of Fallodon, later Britain's longest serving Foreign Minister. His party included five Europeans and thirty-five Africans from Southern Rhodesia and South Africa who had experience in working for Europeans, plus some others (see Fig. 16). They were armed with Martini-Henry rifles, mainly for hunting for food. Having investigated the Kambove in Katanga, they then proceeded south, arriving in the Kansanshi area and formally pegging the site on 6th September (Sarkka, 2016).

Grey has long been reputed to have been shown the ancient mine workings by Chief Kapijimpanga but this may have been a myth because the Chief lived further to the south. It is more likely that Grey had already been told about the location of the ancient workings because they were well-known in the region and situated on a distinctive hill. Grey might have met the Chief later when he continued his journey south and may have even returned to the site with him.⁸ But interestingly, no mention of meeting the Chief was made in Grey's 1903 report to TLC and his name is only mentioned briefly in the 1901 report along with those of other Chiefs. Sarkka (2016) quotes Farquhar, also with no mention of a meeting. The 1901 report even fails to mention any mining areas. Nor did Grey specifically mention any local communities living in the Kansanshi area. But the mine had not been worked for some time, the last overseers being Arab slave traders using Kaonde workers (Coleman, 1971). It was also known from various sources that the area was sparsely settled at the time. The omission of the Chief's name may have been colonial insensitivity or a purposeful effort to avoid having to undertake formal negotiations, but quite possibly they never met.

Grey reported back to Williams in Bulawayo on 24th November (1899) on the mining potential of both areas. He was then given the responsibility of establishing a settlement at Kansanshi. However, the mission to do so was delayed by the distractions of the Boer War (1899-1902) but a number of small groups finally departed in April 1901.

⁷ £52 per long ton in 1897 to £76.7 in 1899. Gann, 1969, p. 121.

⁸ There are various versions of this story, some with incorrect dates. What happened is not clear except for the date of the pegging. Discussions with Jaeger on this matter were helpful, as was Sarkka's paper.

Grey's report to *The Geographical Journal* (1901) describes how they used a large number of donkeys, horses and mules. Despite the Tsetse Fly risk he also had 120 oxen which, with foresight, he had obtained in Barotseland and trained up at Kalomo during 1900. He had correctly predicted that most would not all die before the journey was completed. Enroute they also picked up many porters.

Both journeys must have been an exhausting effort for all involved, presenting as they did major logistical challenges especially given the broad boggy areas and many wide rivers which they had to traverse with some 8,000 lbs weight of goods (Grey, 1901). However, parts of the routes taken would have included the existing network of well-worn tracks made by animals and local people which were commonly used all over the countryside (see Jaeger, forthcoming⁹). Such tracks would have enabled Grey (and slavers, explorers and colonial officers) to travel cross-country far more easily than they might otherwise have done. Milner-Thornton (personal correspondence, 2018) notes that Rockel (2006) and Fabian (2000) essentially argue that European traveller's African guides took them on these centuries old tracks and that the explorers then claimed to have found them. She also mentions in her own book (2012) about the British regularly encountering each other on such routes.

The facilities were duly established at Kansanshi by October 1901 (Figs. 17, 18 and 19). Soon after, Farrell, Williams' chief mining engineer, inspected and reported on the initial findings, including the mention of some gold being present. Grey also said in his 1903 report regarding the limited presence of the gold that 'I have little doubt that such gold as is extracted will amply cover the cost of exploiting the discovery, but no great profit must be expected' (Grey, 1903).

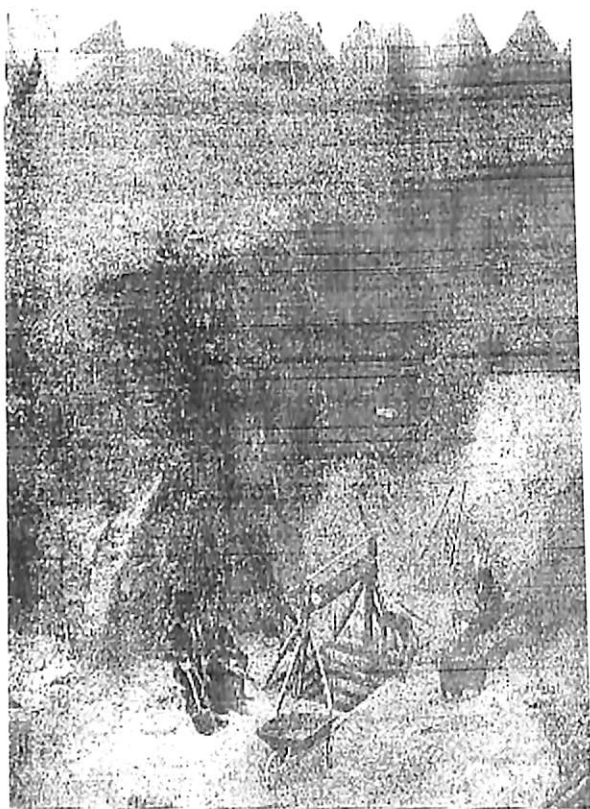
Because of the Tsetse fly risk native porters were mainly relied upon there-after, although their supply was erratic - which was not surprising given the nature of the task, the small populations in the area and the lack of familiarity that local people had with non-Africans - except slavers. However, there were also serious difficulties in supplying them with food, as occurred on the mine. Grey had attempted to obtain a licence for an expanded area of 60,000 acres in order to have enough land for farming to provide food for the miners and also for timber for pit props. But BSAC limited him to 12,000 acres, a size which did not allow for the farming component, hence labour payments being made in cloth which was exchanged locally for food - where it could be found, a far from satisfactory arrangement. Saarka (2016) describes the many serious issues associated with employment of workers.

Grey raised another issue in his 1903 report: 'As was to be expected, the greatest difficulty and hinderance to unlimited development and exploration is the organization of efficient transport...'. One could add that seasonal factors were also an inhibiting factor, activities being largely restricted to the dry season (hence the April start dates from Bulawayo). Another example of this constraint were the problems experienced on the site during 1901/2 when, not surprisingly, initial attempts made to deepen the existing pits at Kansanshi were hindered by technical difficulties caused by the heavy rainy season.

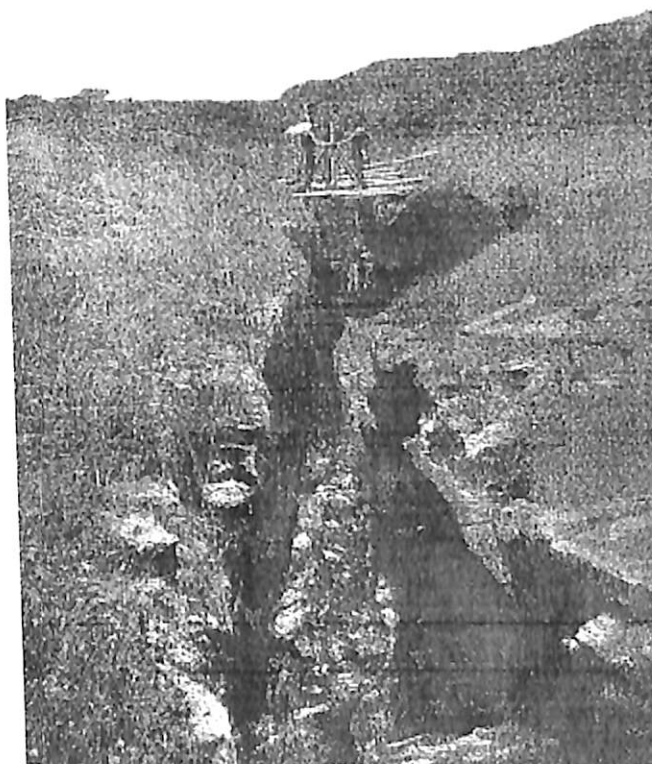
These two major journeys were significant feats which well justified Grey's reputation as a great bushman and logician - and the presence of his name on a current Kansanshi mine Golf Club estate road sign. His reputation was even further enhanced by an epic journey which saved the Kansanshi revival from being halted.

⁹ See related map 1A from the draft article on <https://davidwilkinwpzambia.com/>).

Photographs of Kansanshi's early Colonial era developments, most of which appeared to have used the old shafts as starting points.



KANSANSHI MINE, SHAFT "A"



KANSANSHI MINE, SHAFT "B"

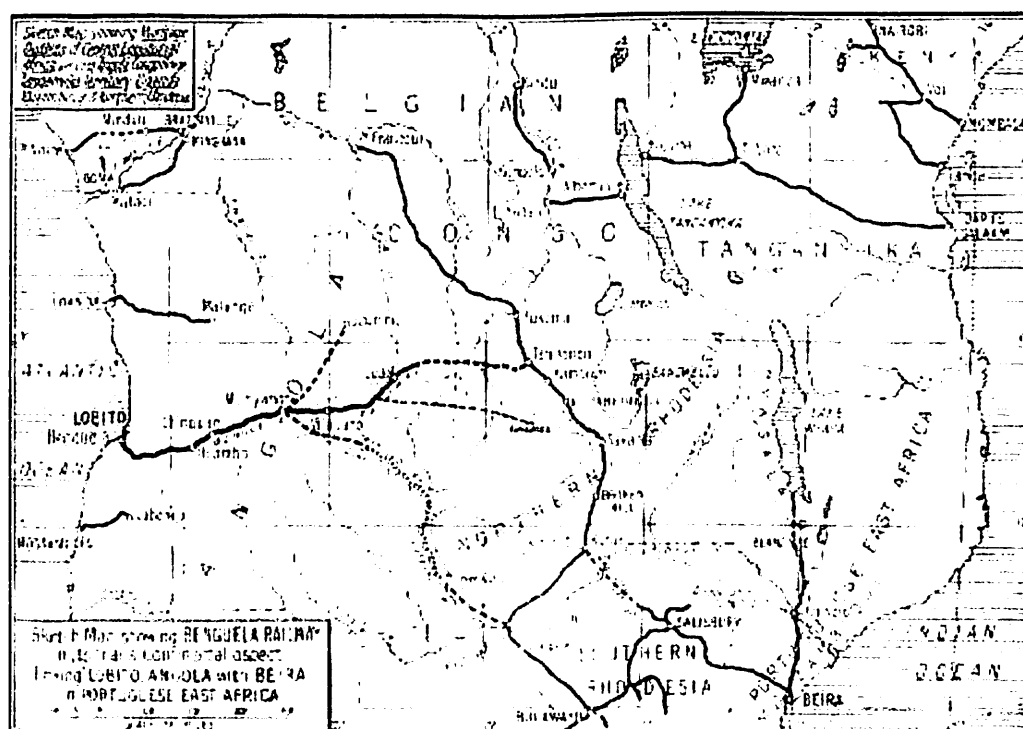


KANSANSHI CAMP, MAY, 1902.

Figs. 17, 18 and 19: Credit all photos: Tanganyika Concessions Limited. Reports on the Discoveries made by George Grey's exhibition in Northern Rhodesia and Congo Free State and Reports by Mr J.R Farrell, Mining Engineer. 5th January 1903. Acknowledging loan from Princeton University Library, 30354.

Thornhill (1915) recorded that during the wet season of 1903/4, Grey undertook a remarkable trip from the TLC Kambove concessions in the Congo, north of Solwezi. He had received word that the Directors in London wanted to close Kansanshi down for economic reasons. There had been three serious revolts of native troops in the Congo and it was feared that a widespread rebellion might take place and affect mining developments. Grey considered that Kansanshi provided the perfect fall-back position and he was determined to maintain the mine and its newly established facilities. Reportedly taking with him only a razor, a toothbrush and a tin of Plasmon biscuits he rode his special 'bush' bicycle 200 miles in the first two days, travelling south to Kasempa then to Ninja, undoubtedly enabled by using the local tracks. On the sixth day he arrived at Kalomo and travelled on to Victoria Falls and then south to the nearest Cape to Cairo railhead (which did not reach the Falls until 1905). He caught a train, presumably travelling south to Cape Town or to Durban, from whence he boarded a ship. He arrived in England thirty-three days after having left Kambove – a remarkable feat. He then obviously convinced the Directors of the company to keep Kansanshi open.

The lack of infrastructure would have concerned prospective companies eyeing off the North West in the early days of the twenty-first century – especially as the rail was over two hundred kms to the east. It reached Victoria Falls in 1905, Broken Hill (Kabwe) in 1906 and Elizabethville (Lubumbashi) in 1910. Grey said in his 1903 TLC report how delighted he was to hear that Williams was optimistic that rail would be available before too long. The possibility of using an alternative route from the Portuguese-held west coast was also considered. But while work on the challenging Lobito (Benguela) route did commence in 1908 it was not completed until 1932. Also, it was routed through the Congo, ending just north of Elizabethville where it joined the south-north line – by-passing Kansanshi which lay about 150 miles to the south. A westward leading trunk line of 300 miles to connect Kansanshi with the Lobito line just south of Luzo in the Portuguese territory was reportedly surveyed (according to Charles Rae's father as told to this author) and appears on at least one map (Tabor, 2003, p. 218) (Map 8), but never built.



Map 8: Sketch map of the Benguela Railway from Lobito to Beira via Congo, with the surveyed but never built connecting link from/to Kansanshi mine. nd but c 1930? Credit: Tabor, G., (2003), p. 213. (No original source).

In the early days of modern mining the ore or concentrate was sent south then east out of the area via steam traction engine to the nearest railway point, initially at Broken Hill (Tabor, 2003), a distance of 300 miles (Copeman, 1954). Copeman also reported ‘... that the copper ore contained a few pennyweights of gold, sufficient it was said to defray the cost of transport.’ The route was changed to the north-east when the rail reached (M)Baya in 1910 or 1911¹⁰ just south of Elizabethville reducing the distance to 100 miles. This form of transport was superseded by trucks when the mine closed during 1914 because of World War 1 (Beech, 1959 and Tabor, 2003). When the mine re-opened later (possibly in 1927) ‘... there was already a branch-line from the main line to the Chipushi (Kipushi) Mine just over the border in the Congo, which brought Kansanshi with-in sixty-six miles of the nearest railway line...’ (Beech, 1959).



Fig. 20: A restored steam engine at Kansanshi, Blandford (2002), p. 21, Plate 9.

This brief description does not do justice to the laborious effort it took to move the minerals through the bush to the nearest railway, and which required an efficient system which provided large stocks of wood and water supplies to be established at regular intervals along the route, with the necessary manpower. Indicating the importance of such transport and the skill required, engineers driving the engines were very highly paid (about £900 a year, much higher than a District officer received. This largesse caused considerable resentment amongst the colonial officers (Williams, 1913). One of the old engines has been restored and remains on the Kansanshi site (Fig. 20) and others can still be found around Zambia. In later years trucks were used to reach the Copperbelt smelters along what became the T5.

Originally an underground mine, Kansanshi was worked intermittently over the 20th century, producing from 1903. Ownership was transferred from TLC to the Rhodesia-Katanga Junction Railway and Mineral Company in 1909 (Perrings (1979). Beech (1959) reported that smelting (with ideas borrowed from local smithies) was undertaken between 1911-14 but it may have even started earlier. Gann (1969) reported that in 1913 eighty-five local and 778 non-local Africans were employed at the site. By 1930 ninety-four Europeans and 1,925 Africans were reported to be employed. They performed heavy, dangerous work. Sarkka (2016, p. 4) recognized their historically neglected contribution, noting that ‘The actual manual mining work undertaken by African labourers - such as the sinking of shafts and extraction of ore using axes, picks, shovels and wheelbarrows can hardly be appreciated without photographs.’ The ‘Kansanshi’ film (Malachite (1971) provides a re-enactment of working conditions in the narrow shafts. The labour conditions of the time, which were very poor, are discussed by others (e.g. Sarkka, 2016, Daniel, 1979 and Perrings, 1979).

¹⁰ Tabor (2003) mentions Makala, not (M)Baya, and that the rail had already reached Elizabethville in 1910. Beech, (1959) mentions 1911.

The mine closed again in 1932 because of the Depression and re-opened in 1952 for mine development, with production re-commencing in 1956. Due to major flooding in October the following year, it was forced to close yet again. Short (1973, p.) describes this particularly dramatic episode in his memoirs:

... in a barrage of rumour and counter-rumour, the mine-re-opened. [1952] The shafts were cleared and great engines thundered night and day to pump the water away. Electric light was installed, new houses built, the road improved to Chingola. Then disaster struck. A hidden steam or river, of much larger proportions than was thought possible, was broken open. The water flowed back into the mine with an irresistible force. No one was killed, but it was all over within two hours. The shafts were closed, the engines taken away, and Kansanshi stood alone once more. Nature had won again; the place was left to ghosts.

From 1969, mining but not processing, was conducted at the site until April 1986, including by Anglo American (information available is not clear on this), when work ceased yet again because of the prevailing economic conditions. GRDMinroc (2003) reported that mining resumed in 1988, with ZCCM constructing a small sulphide flotation concentrator to treat ore which was then transported to Nkanga on the Copperbelt for smelting. In 1998, ZCCM formally ceased operations at Kansanshi and initiated closure and reclamation activities. The licence was then acquired by Cyprus Amax Zambia Corporation (Cymax) in March 1997 and then by FQML in 2001. This document picks up the story after that period.

The erratic nature of the mine's functioning over the decades clearly illustrates just how dependent it was on global events, starting with '... the rising tempo of industrialization in Europe, North America and Japan.' (Sarkka, 2016, p. 7). This development resulted in increased demand and prices in the late 1890s enabling the TLC to introduce modern mining in the first place. It was again a 'rising tempo,' this time from China, which allowed its most active phase to commence a century after the original revival. World war, global economic events and the area's hydrology also played a role, as in the 1957 flooding episode.

Descriptions of Developments

The (Brief) Cymax Era – 1997-2001: In 1996 privatization was re-introduced in Zambia with FQML was outbid by Cymax which acquired the Kansanshi asset in January the following year. It bought an 80% share with Zambian Consolidated Copper Mining Ltd., (ZCCM), a government owned company, holding the remainder. Cymax commenced preparations to expand the mine in May 1997, carrying out an extensive drilling programme and metallurgy studies. A pre-feasibility study was undertaken but in 1999, during the process, Cymax was acquired by Phelps Dodge which decided not to proceed with any African developments, including Kansanshi.

In the meantime the Cymax activities had already impacted on the Zambian staff who lived on the mine site. As reported by Oxfam GB (1998) the company announced its intention to demolish the on-site staff housing, as well as the basic school, a clinic and a church. The majority of staff were declared redundant and told to leave, with August 1998 being the deadline, although demolition began in early 1998. About 930 people (150 workers and their families) were reported by Oxfam GB to be affected, along with their fruit trees and crops which were destroyed. Some were assisted with transport back to the Copperbelt or beyond but Oxfam GB reported that while some compensation was paid out, many spent it unwisely, failed to buy or build new houses in Solwezi town and ended up destitute.

But despite the rush to move people off the mine land, the site stood untouched for a considerable period of time - much to the dismay of the former miners. Presumably this was because of the change in ownership. Also, Oxfam GB reported that the company gave the materials from the demolished houses to 650 non-mine families who had been affected by very serious flooding in the town area in April 1999 and who were relocated to Kasamba, a new site and service area.

While the Oxfam GB report is the only brief and an incomplete description of the events, it appears that the rights of staff affected by the take-over had not been adequately protected. Nor had the workers been well supported although the Catholic church attempted to help them. Although the buildings had been on mine licenced land there were issues relating to the ownership of properties and the land on which the church stood which were not well addressed. These events created an uncomfortable legacy which FQML inherited.

The FQML/KMP Era, 2001+: The Cyprus feasibility report became available in April 2000 and was re-worked by FQML to show a more positive economic scenario (Pascall, 2018). In August 2001 Kansanshi Mining Plc (KMP) bought from Phelps Dodge the large-scale mining licence (21,655 ha) with an exploration licence for 21,843 ha. The nominal mine life was initially given as sixteen years and later extended to twenty-seven years i.e. until about 2024 (Blandford, 2002). The grade of copper was initially rated as 1.1% to 1.34% (but became lower as the years went by). Gold was also recovered, contributing to the mine's profitability. The revived and upgraded mine went into production in April 2005, with on-site smelting beginning in 2015.

The Development Agreement between GRZ and KMP was an amended version of the one which had been originally signed on 14th March 1997 by Cyprus Amax. This document was never made public (as was the national practice then). It is believed to contain no specific mention of social commitments, apart from staff training, small local business development and environmental care, but with nothing about local communities. This agreement was unilaterally terminated by the government in 2008 and has never been replaced (similarly with agreements for other Zambian mines).

In 2002 Kansanshi commenced preparations for the major revival of the mine. Studies were undertaken by consultants Blandford (2002) and GRDMinroc (2003) but their focus was largely on technical matters. Coverage of social aspects was brief and focussed on the potential impact on the town rather than the surrounding communities. Two earlier studies, including a social assessment for ZCCM in 1997 and the Cymax study of April 2000 were not located. The presence of some pre-existing environmental damage to the land from earlier mine phases, such as pollution of dambos, was noted by Blandford (2002).

A heritage study (not located) was undertaken and sites within the licence boundaries were identified and recorded, including the ancient diggings, or what was left of them after earlier colonial mining. But those sites were later consumed by the upgrading and expansion of the mine. Before that occurred the cemetery (Fig. 21) was relocated. Short (1973, p. 100) described how it had contained the graves of men with all kinds of names '... English, Greek, Norwegian, Afrikaner, who had almost all died of blackwater fever'[complications of Malaria]. There was also a cemetery for Africans, and reportedly, for Arabs. Some artefacts were rescued and a steam engine renovated and displayed for historical purposes as already mentioned.



Fig. 21: The Kansanshi cemetery. Credit: Genealogical Society of South Africa, contributed by PS and BS Moss, 2000.

A comprehensive social survey of affected communities should have been undertaken at this point to provide baseline data and a clear understanding of the situation. However, it was not carried out until early 2010 (KMP, 2010). Regardless of this omission, the extent of the influx would have confused the situation and made it difficult to obtain a clear picture.

The company then made a large number of physical changes and undertook other developments both within and outside the licenced area: the T5 from Chingola to Solwezi was re-sealed by 2002 and the road from the T5 to the mine was upgraded by 2004; the power line from Chingola to Solwezi was upgraded from 110KV to 330KV in 2004 and the mine site was fenced off in 2006.

Solwezi airport was rehabilitated and upgraded to accommodate the increase in number and size of flights (see Table 2) and the thirty-five housing units at Sakatengo, near Wisdom, which had been built in the 1990's, were refurbished in 2004. The latter were mostly used for new mine employees who came from outside Solwezi and needed temporary accommodation until they found their own. As well, the company golf club and housing estate, school and clinic were built outside the mine site in 2006 on what had been Mushitala land. In 2011 an additional tailings dam was built to the east, again outside the mine site. It was later enlarged further over the Kakasha farming area, events which resulted in the Congo road having to be diverted twice around the eastern side of the mine boundary.

In addition, the building of the Kabitaka housing estate and fee paying basic and middle schools commenced to the south east of the tailings dam in 2011/12 and the permanent town office and training and storage facility were established from 2013 outside the site on the road to the mine. A road to the new smelter on the western side of town was upgraded in 2013 in order to enable trucks from Kalumbila to avoid having to go through the centre of town. A state-of-the-art smelter was built inside the site during 2014/15. A secondary school was built within the mine site in 2014 and in 2015/16 the Kipemba housing estate on the western side of town was being prepared. The company was also involved in various other infrastructure projects, including off and on repairs of the T5 and other roads and the upgrading of Solwezi General Hospital.

The revived and upgraded mine came into production in April 2005, Concentrate was first produced on 31st December 2005 and the first cathode in April 2006.

Two massive open pits were eventually worked. The new smelter came into production in July 2015, considerably reducing mine costs as it was able to produce sulphuric acid instead of having to import it. As at 31st December 2011, 1,635 persons were employed (presumably excluding contractors). In December 2015 that figure was 2,723 persons, with a further 836 being contractors (FQML AIFs, 2012 and 2016). The local labour force was unionized.

The majority of mine staff were Zambians with less than 10% of all staff being from other major mining countries, including South Africa, Australia, Britain, Canada and other African countries. Because of their particular levels of expertise expatriates were in senior positions, along with some experienced Zambians. The smelter was mainly built by Filipino and Indonesian artisans who are the global experts on such matters. They were recruited on short term contracts during 2013/14, housed in temporary accommodation on the mine site and bussed into town at weekends for grocery shopping. Their brief presence was something of a novel sight to the local town's people and contributed, albeit briefly, to the international flavour that all major mines have around the globe.

Impact on Associated Areas



Fig. 22: (L) Kansanshi mine staff housing, then under Anglo American. Fig. 23: Mwaiseni store, Solwezi, the forerunner to the National Home Store and Shoprite, both early 1960s. Credit: A. Nesbit.

Solwezi town, the old days:

The first colonial office was set up in Solwezi town in 1909, but it wasn't until around 1950 that the town functioned as the 'boma'/headquarters for the province, specifically because of the activities of Kansanshi mine which were stimulating, in a small way, local business development. Fig. 22 shows what the mine staff residences looked like in the early 1960s. A few small businesses existed at this time, including the forerunner of Shoprite, the National Home Store, also known as Mwaiseni, but Solwezi was still essentially a quiet country town, as can be seen from the photo (Fig. 23).

The situation improved in the 1970s as Solwezi becoming known as a 'poster town' as it benefitted from Anglo American's contributions to infrastructure, including good roads and a modern hospital. These developments made it a decent place to live and attracted some rural people to move closer to town. As well, the road from Chingola was tarred in 1971 which helped to increase commerce and resulted in increasing movement of villages to the roadside, a phenomenon which Jaeger (1981) had described. By 1969 the town was reported to have had a population of 52,979, with government being the major employer (GRZ, Solwezi District Development Plan, 2011-2015, p. 12).

According to Findlay (1980) mine officials were housed in Kansanshi Village which was built one mile west of the mine works during the 1952-57 developments. He also noted how the Kansanshi Township was established on the mine site in 1975, including a school and church for the population of about 500. Consequently, the mine was almost a separate entity from the town, as well as being physically over ten kms from it. There were some mine employment opportunities but, like today, Findlay reported that most of the skilled workers came from the Copperbelt, with only a few lesser skilled jobs being undertaken by local people. Also, because the mine only functioned intermittently local farmers and others who supplied the mine with produce or who had related jobs suffered during the downturns. They experienced the reality that mining can be an unreliable source of income. The town became run-down during the 1980s and 1990s and government officers did not regard it as a desirable place to be posted. Solwezi town had always been affected by Kansanshi mines' up and down- turns but never before to the extent it occurred in this decade. Later, and to a lesser extent, the opening up of Lumwana and Kalumbila, as well as the exploration boom, added to the impact, largely because it was the only commercial area in the province.



Fig. 24: A Sign on the T5, circa 2008. Credit: www.leidenuniv.nl/en/researcharchive/index.php3-c=422.htm

The 'New' Solwezi, 2002+: The situation started to change as First Quantum oversaw the revival of Kansanshi from about 2002 onwards. Solwezi town changed from being a quiet rural backwater to a vibrant, albeit ramshackle town, although the view greeting one at the outskirts hardly suggested what modernizing was going on (Fig. 24). Due to the influx of mine workers and those seeking work the population of the town area grew at a very fast rate. At least part of the influx was due to the economic downturn on the Copperbelt - as well as more attractive conditions of service at Kansanshi. The national censuses document a population increase from about 71,000 in 2000 to 163,983 in 2010 (CSO, 2010 Census). However, by 2015 the Solwezi Urban Baseline Study (GRZ/GIZ/SMC, 2016), estimated the population of the urban area to be about a quarter of a million which seems to be a far more realistic figure.

As a result of the influx of people, the mine site, which was originally some distance from town, became part of it. Housing expanded right up to the western and southern sides of the mine site, much of it being unplanned and un-serviced. The growth of the town is indicated by the figures that 17% of the total urban area was under use in 1974, but had increased to 85% in 2005 (Hakwendenda, 2005). Musonda (2011) noted the extent in the increase in demand for housing plots which rose from '... under 100 in the second quarter of 2011, to 300 applications in the third quarter...' The town boundary was later expanded to accommodate the ever-increasing demands. Figures 25 and 26 illustrate the increase in traffic around 2012/13 on and around what had previously been a relatively quiet main road.

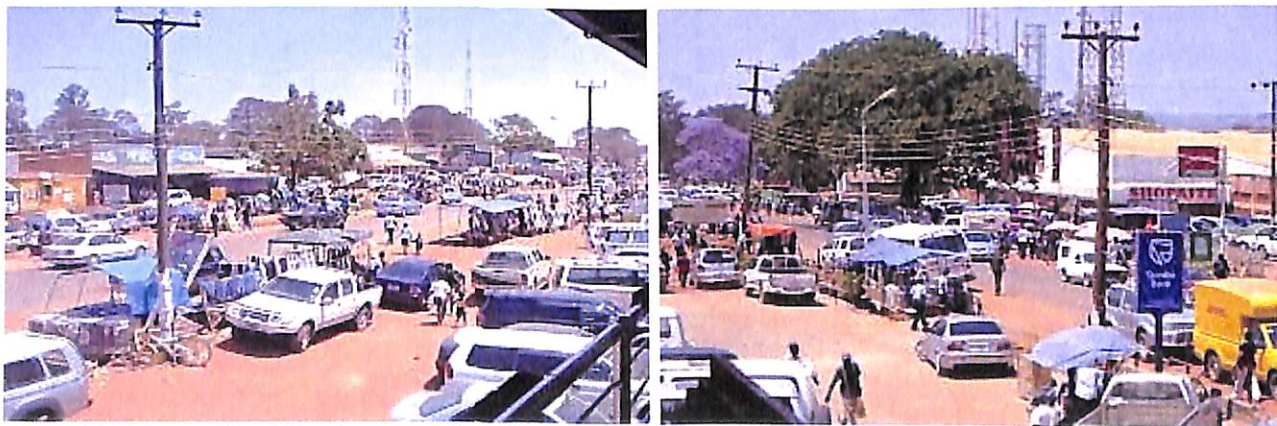


Fig. 25: (L) View of the T5 going through Solwezi town to the west, lined with stalls before they were moved out, 2012. Fig. 26: (R) Shoprite, the only one in Solwezi town for many years, looking east, 2013.



Fig. 27: Kyawama Market out on the western edge of town, beside the T5, 2014.

The Solwezi Municipal Council (SMC) building became a ‘beehive’ of activity, where the local government worked and staff councillors met, and to which many flocked each day in order to lobby Counsellors and officials, to have their plans reviewed or to obtain their permits for businesses and other developments. However, the state of the building, apart from a new meeting chamber, remained in a dilapidated state, belying its important role in the town. It was only in 2016 that a new multi-story building was erected next door (see Part 4 for further information on the role of the Council).

Small and medium sized businesses, including a thriving bus and taxi industry developed. The first building with an upper story (apart from the District Commissioner’s office), was built in the middle of town by 2012, as well as a number of new shops and some of the town pavement areas were smartened up by 2014.

A jumble of small stalls also proliferated, jammed in along the edge of the very busy Independence Avenue/T5 through the centre of town. They were finally moved around 2013, with some protests, to the new, better organized Kyawama market out on the western end of town (Fig. 27). A large, all-weather roofed structure was promised by government and was eagerly anticipated. However, it was still not finished by 2014 and the need for adequate toilets was not met for a considerable period of time, creating potentially serious health risks and negative media coverage. Also, the spread of stalls was disorganized and reached across both sides of the T5, making for traffic hazards for both vehicles and pedestrians alike.

Phone and internet services, FedEx and Western Union outlets were established, as well as three fuel and two radio stations. According to Council records the number of guest houses and lodges increased from about five in 2000 to over 150 by 2012. Two international standard hotels were built (the Royal Solwezi and Kansanshi), as were a number of large lodges such as Solwezi Lodge. Older ones like Floriana and Mwaaka were upgraded to meet the increased demand. Nightclubs and bars proliferated and the town became known as *Solwezi Mabanga* – ‘in the evening’, indicating a party place and the town was said to be *where life was*. The South African owned Shoprite remained the only large supermarket up until about 2014 and consequently was hugely profitable. Surprisingly, it was only after 2016 that modern shopping malls were built and many other new businesses, including supermarkets and industrial developments. Evidence of the amount of money flowing was indicated by the existence of twelve banks, an increase over the original three.¹¹

¹¹ Barclays, Cavmont, Stanbic, Standard Charter, Citibank, ZANACO, Zambian National Building Society, NatSave, Investment Trust Bank, Building Society, Finance National Bank and Indo-Zambia Bank.

The demand for banking facilities was so high that in December 2014 they all ran out of cash, much to the shock of Christmas shoppers (Zambia Reports, 2014). There was also a growth in private health services (St Johns, Hill Top, Life Save and Solwezi Medical Centre), which provided an outlet for the pressure on public services, at least for those who could afford to access them.

Solwezi town became a place where money could be made if one was employed or a person had a house or rooms to rent or products or skills to sell, as described in Part Three under the Business section.

Government data (Table 2) also recorded a sudden increase in flight movements at the airstrip on the edge of town. This change in the number of flights was obviously due to the development of all three major mines, especially once the airport had been significantly upgraded by Kansanshi to cater for large planes. By 2015 Kalumbila had developed its own landing facility which took some of the pressure of it.

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TABLE 2: PASSENGER MOVEMENTS AT SOLWEZI AIRSTRIP, 2002-JUNE 2007		
Year	Landings	Passengers
2002	39	140
2003	72	229
2004	137	455
2005	118	422
2006	515	1736
June 2007	356	1657
Source: Department of Civil Aviation, Solwezi, 2007.		



Figs. 28 and 29: An ‘Abnormal’ in 2014 and trucks a daily occurrence through the centre of town, 2012. Right photo credit: D. Jaeger.



Fig. 30: (L) Surprisingly, these low-cost houses were within two km of the town centre, Solwezi, 2014.
 Fig. 31: (R) Low-cost informal housing area, typically with produce for sale, edge of Solwezi town 2012.



Fig. 32: Medium standard housing creeping up the hill just above the T5, south east of the mine site, Mushitala area, planned housing but with unsealed road and no services, Solwezi, Aug 2013.

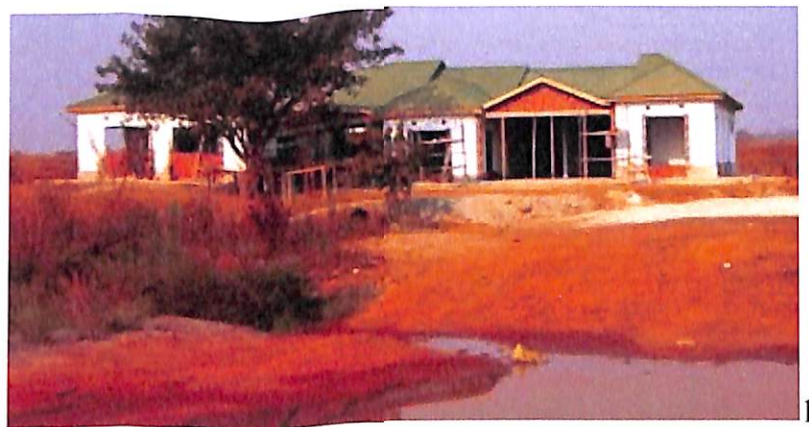


Fig. 33: High standard housing but built on swampy land, Solwezi town, 2012. Credit: D. Jaeger.



Fig. 34: Equally neat but low-cost housing, with a small business, Kamasala area, Solwezi town, 2012.

With the commencement of Lumwana activities around 2005 and then Kalumbila from 2010 onwards the pressure on the centre of town accelerated. Traffic jams on the main road through town became a daily event, especially when the oversized Abnormals passed through to the new mines in the west (Fig. 28) - all because there was no by-pass or railway (Kansanshi vehicles turned off the T5 before reaching town). It was an extraordinary situation, having such massive transport intermingled with pedestrians and smaller vehicles on a daily basis – but people became almost immune to the situation (see Fig. 29). The traffic problem was only very slightly alleviated in 2014 when the first set of traffic lights was installed. Perhaps the only plus was that the traffic was so congested that it had to move very slowly.

Along with the increase in the town population the number of vehicles in town multiplied perhaps ten-fold. Tyre mending and mechanical skills became much in demand, as did fuel supplies and spare parts. Taxi's suddenly proliferated while mini-busses and inter-province buses did a roaring trade, the latter increasing from one a day to many. But it took until 2014 before a fuel depot was finally build on the outskirts of town.

The chaos in the middle of town was also because this was where the main shops, banks and government offices were– there being no planning to take the pressure off the main road. The situation was aggravated because Solwezi town was also the main shopping and banking area for the whole province and included both provincial and local government offices.

The widely held negative perception about Solwezi town also changed. Despite its many physical short-comings it was suddenly perceived by outsiders to be a desirable location. It became a beacon of economic prosperity (at least for some) at a time when there were very limited economic opportunities in other parts of the country, especially on the Copperbelt. Many rushed into Solwezi from within and from outside the province in the hope of benefiting from the mining and its associated developments.

However, conditions for the burgeoning population were generally very poor, with limited power, sewerage and sealed roads. Accommodation especially was a problem as there was already an existing housing shortage (as had been already identified in the 2002 Blandford study). It was not a town ready to receive a large and sudden influx of new inhabitants. The demand for housing accelerated, at least partly caused by the initial Kansanshi policy of not providing junior level housing, apart from the temporary accommodation at Sakatengo. There was not even a real estate agent in town because any accommodation which became available was snapped up via word of mouth. What was available was often of poor quality. Rents and the price of basic goods accelerated making the town as expensive as Lusaka. This development especially disadvantaged the local people, many of whom were not able to obtain well-paying mine or associated work. Clearly illustrating the seriousness of the situation the International Council on Mining and Minerals (ICCM) (2014) reported that ‘... real per capita monthly income had grown faster than the national average, and at 24% per annum was higher than even that achieved in Lusaka.’

Lower level civil servant families, with their already inadequate salaries, and others like them, found the greatly increased cost of living highly stressful and were only able to afford very basic and often poor-quality accommodation. Some coped by taking advantage of the high demand for housing by renting out their own homes and moving to more distant, cheaper locations and/or building new ones and renting them out.

This way they were able to supplement their meagre government salaries and many profitted well out of this practice. Those who were seeking accommodation struggled because of the shortage and because of the high cost of rentals which had accelerated over the decade.

There was a boom in demand for land and many irregularities were associated with the related allocation processes. Suburbs, both formal and informal, expanded rapidly. Many were un-planned and without services or graded roads, at least initially. However, even by 2014 there were still blocks not built on, with the town environs remaining quite rural in appearance (Figs. 30 and 31). This made the town an odd mixture of urban and rural life, which may have been at least partly due to court cases about land ownership, of which there were many. But there was also an increase in medium standard housing (see Figs 32 and 33) giving Solwezi some middle-class areas for the first time. But not all the more basic houses looked unkempt (see fig 34).

Many of the less well-off new arrivals found a piece of land and, and without title, built their own houses from sun-baked, termite mound bricks resulting in sub-standard buildings. Such constructions were at risk during heavy rains, with incidents of collapse and poorly constructed roofs being blown off in stormy weather. Musonda's 2011 thesis provides many examples of the housing issues which people faced and he reported that local government was well aware of the issues. He quoted the Solwezi Housing Review of 2009 which described the conditions prevailing in what had become twelve unplanned settlements (see Box 2).

Box 2: 'General characteristics and common problems in the unplanned settlements

- Lack of properly defined layout plan
- Lack of defined access roads, storm water drainage
- Mixed housing types, predominantly mud bricks and thatched structures. Medium standard housing creeping up the hill just above the T5, south east of the mine site, Mushitala area, planned housing but with unsealed road and no services, Solwezi, Aug. 2013
- Poorly built housing structures, some collapsing during rainy season
- Inadequate open space for recreation and other social amenities
- No central sewer system, use of pit latrines and septic tanks
- Inadequate water supply, use of water kiosks and unprotected water wells
- ZESCO power supply in some areas, use of solar panels, but predominantly use of charcoal for cooking
- Inadequate or lack of solid waste management
- Very poor and dusty environments, especially during dry season
- Very muddy environments during the wet/rainy season
- Areas very prone to environmentally related diseases.'

Source: GRZ, Solwezi Housing Review of 2009.

An example of the problems which occurred was described in an article in the Independent Observer (2014):

14 houses have collapsed and 75 others are on the verge of giving in at Kimasala compound in Solwezi district following heavy down pours the district experienced in the past few days.' [Permanent Secretary] Mr Malupenga who visited the flooded area today said there is danger of people in the area to catch diarrheal disease because some flooded pit latrines have collapsed causing interaction of water from the pit latrines and water in shallow wells.

It was not as if the district and town had been short of government development plans for many have been prepared since 1964. They included the Solwezi Development Plan 1970-2000, the Draft Solwezi Development Plan, the 1990-2020, a District Situation Analysis undertaken in 2005, an Integrated Environmental Impact Assessment undertaken in 2007, the Solwezi District Development Plan, 2006-2010, and a subsequent one for the period 2011-2015. As further evidence of good intentions Chiefs Kapijimpanga and Mumena surrendered large portions of their land to the Council to help with the redesigning of the town in late 2007.

Most recently, with German Development Assistance Agency (GIZ) support, the Solwezi Council drew up a Strategic Plan 2015-2019 which included a frank analysis of the many constraints. A Solwezi Urban Baseline Study (2016) was also produced with GIZ assistance – but unfortunately both documents were prepared well after 'the horse had bolted', making it much harder to improve the situation than if earlier plans had been resourced and implemented.

As was apparent from the appearance of the town little had resulted from the earlier planning exercises, largely because of lack of an increased national allocation commensurate with the greatly increased numbers of local residents. Part of the problem was also a lack of staffing capacity – and political will - to implement the plans, especially after President Mwanawasa died in August 2008. Other Council related issues are discussed later in Volume Two in the section on government.

Another aspect of the situation was that the SMC was also responsible for the rest of the District but that the burgeoning town was taking up most of its attention. It didn't help that some Chiefs had been independently allocating land in an ad hoc fashion without relation to District plans, thereby creating the need for associated services to be provided. Political interference in decision making was another factor, and not unrelated, was the extent of corruption which was occurring, especially about land and business-related deals (various sources including SMC minutes and interviews).

While planning processes are important they are very time consuming and costly and they were even reported in the latter part of this first decade to be holding up developments i.e. developments were outstripping plans. Applications for housing estates, petrol stations and the like were being put on hold until a plan was in place – creating a frustrating clash of bureaucracy over entrepreneurship.

Another issue was that many of the mine workers were from the Copperbelt (including from FQML's Bwana Mukubwa site which was being closed down) and reportedly sent most of their money to their home areas. Some lined the T5 on Friday afternoons and evenings in the hope of catching a lift out of town or got on the bus, returning late on Sunday.

Given the appalling state of the road around 2013/14/15 and the amount of traffic the journey took much longer than it would normally do, and they also ran an increased risk of being involved in vehicle accidents, as discussed further in Section Three.

In 2011, the then Finance Minister Musokotwane gave public recognition to the very significant role that the Province was now playing when he was quoted in the press as saying that

North Western Province has moved from being a backward region to the country's driving engine ... As we speak today North Western is *the locomotive of economic development for Zambia* (Sunday Post, 2011).

But you would never have known about this dramatic rise in status from the look of the provincial capital. Solwezi town came to be described very negatively in the press. An article in 2012 stated that '... it had hardly anything to show that the area is host to the largest contributor to the country's treasury...'. It also quoted the then Minister for Local Government, Nkandu Luo, as saying 'Solwezi was an eye-sore'! (Times of Zambia, 2012). The following year Chief Mumena referred to it as being 'like a large shanty' while in 2014 Permanent Secretary Mulapenga described the town as 'an embarrassment' Sunday Post Online, 2014). Solwezi Town was certainly nothing like Copperbelt towns during their peak, as can be seen from the photographs provided earlier.

A government officer who transferred to Solwezi from Lusaka in 2014 said to this author that she was '... very surprised and disappointed, that the roads were terrible and accommodation expensive and difficult to find, and that she had expected more development.' She added that she would like to go away for the weekends but that the state of the T5 was off-putting and that 'People just want to make money and get out' (Interview Aug. 2014). A taxi driver in the same year also commented that 'We are improving but there is something which is behind', and that 'Solwezi was not like any other towns.' A church official heatedly complained that 'It is like Solwezi is in a different country from Mazabuka, Choma, Kabwe etc.' He noted that there had been meetings with stakeholders and many promises made about the sealing of more town roads, but little or no action had resulted. Another informant in the same year sourly wrapped up the subject by saying that 'There is no evidence that this is a mining town.'

The new opportunities were being welcomed but the negatives, like lack of decent housing, inadequate services and poor infrastructure, as well as the high cost of living, were difficult to handle. But without being adequately resourced and staffed, there is no way that the SMC could have hoped to have more effectively managed the developments.

This situation raises the question as to whether the national government had expected the companies to take over responsibility for town planning, as in the old Copperbelt days, or whether it just didn't care what was happened. Some even suggested it was a political decision to neglect the province because of its voting patterns.

Social services were also severely affected. Local clinics were inundated with clients, creating long waiting times, and medicines were in short supply, often having to be bought by patients at town pharmacies (although this was common throughout the country). The Education sector was equally affected. School over-crowding became the norm with a teacher reporting that one school's enrolment had grown from 900 to 2,600 and that there were up to 100 pupils per teacher (Education staff interview Solwezi, 2014).

Even lower ratios were reported from other areas. It was also reported that ‘... there had been a formal directive to keep on enrolling miner’s children...’ i.e. largely children of outsiders. However, this burgeoning school population was not just due to the influx. It was also because local people had begun to realize the importance of their children being educated in order to be sufficiently qualified to obtain mine jobs. This meant that there was an extra financial demand on them to find school fees.

The government Community Development Department reported that social welfare problems had increased, fanned both by the increasing extent of unemployment amongst both locals and new arrivals, and also by others with money to throw around (Interview, July 2012 and annual report, 2007). There were reported to be increasing inequalities in income, drunkenness, gender-based violence, and marriage break-ups. There were reports of young women eagerly seeking new husbands with mine jobs while employed men looked, and easily found, younger new wives. There were many cases of wives, children and grandparents being left destitute. The Department reported a severe lack of resources to cope with the increase in issues.

This situation made for a highly charged atmosphere which encouraged the spread of false rumours (including charges of witchcraft), especially given the resentment of outsiders and widespread confusion over relocations and the compensations being so delayed. Cheelo (2008) reported that there was a feeling of ‘moral corrosion’ occurring and also that the original town residents were resentful because they were being pushed, financially, out of the town area.

Overall, the pace and extent of the change caused much confusion with people anxious because they didn’t know what was going on or how to maintain control in their lives. Negi (2010, p. 4) aptly put it – ‘... there was an entire world of anxieties and disorientations that the place’s transformation had enervated...’ Survival was always a physical struggle in the North West but now urban life was accompanied by the new stresses of not being able to comprehend what was happening, where local people fitted into this confusing new world and how they could best survive in it.

Related to the ignorance about what was going on there were many complaints over the past decade about communications. So much was going on and developments were occurring so quickly that many experienced difficulties in trying to understand what was happening. Communications were inadequate or distorted. As a former Permanent Secretary, Richard Salivaji said at the 2008 Mining Watch meeting, ‘Sometimes even us ... fail to catch up with some of the developments taking place.’ (CSPR/Caritas, 2009). One of Negi’s 2010 informants also said that Solwezi was ‘... a confused place which confuses everyone.’ (p. 3).

Cheelo (2008, p.167) noted in regard to the Kansanshi communities that they felt that the communication channel was horizontal i.e. between government and the mining company, neglecting those actually affected. He added that one of the Mushitala residents had said to him that ‘The mode of communication ... is known only by the politicians....’ With such voids and in such an emotionally charged environment, the situation was fertile ground for the spreading of rumours and fear mongering, as Negi well describes in his ‘Solwezi Mabanga’ paper (2014). It was noted by one observer that it suited government to keep people in the dark about what was happening.



Fig. 35: Just off the T5 in the middle of the 'central business district', there is electricity (occasionally) and the road has recently been graded, but that's about all. This was not Manda Hill or Jacaranda Mall, July 2012.



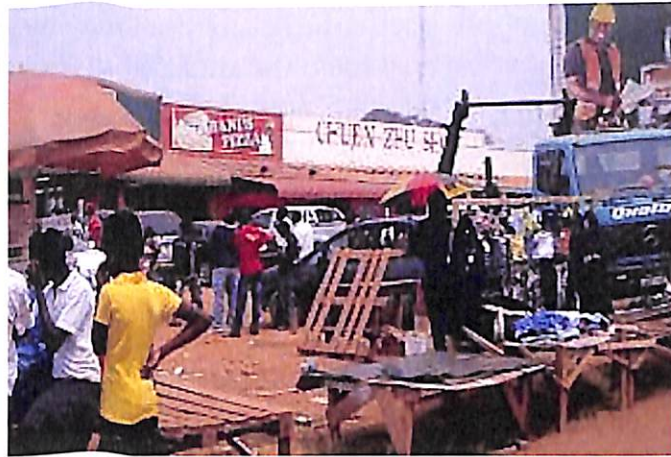
Fig. 36: (L) Very poor conditions in local market lane, close to the centre of town, 2014. Fig. 37: (R) Shop conditions were improving in other parts of town, providing a clean place for a young entrepreneur to operate his cardboard box-based passport photo business, 2013.

While there were both government and community radio stations, as well as national TV channels there was no local newspaper which would have gone a long way to helping keep people informed. Such media would have provided a useful link between provincial government, the Council, the mines and the people – and provide an element of transparency which did not exist i.e. if it was free from politicization - one talk back radio programme which was frank about the problems being experienced was closed down in 2014. There was a glossy magazine, 'Solwezi Today', but it was commercial and largely a public relations exercise for the mines which were among its major advertisers, along with their contractors. Only two articles amongst some three dozen between 2012-14 painted a more realistic picture of what was going on e.g. *Lacking Amongst Plenty: The Story of Manyama* (Zimba, 2012).

Reflections

The town with its already inadequate infrastructure was over-whelmed by the influx of outsiders and the District Council was ill-equipped to maintain control and resolve the confusion which prevailed. With foresight GRZ could have supported the establishment of a special planning and implementation unit and ensured it was sufficiently funded and staffed with expertise to prevent the potential problems from occurring. But this did not happen.

There were obviously many downsides to the start-up of the mining boom for those in Solwezi town area. This was especially so for the less educated and un-skilled local people who were not able to benefit from the new opportunities.



Figs. 35-41: A kaleidoscope of changes in Solwezi town area: over-crowded classrooms; shopping areas enlarging, including with Chinese shops for the first time; a very crowded and cramped pre-fab bank and the booming Kyawama markets booming.

Local people particularly suffered from the competition for land, the crowded public health and education services, the increase in poor quality housing, with subsequent water, sewerage and access issues. Social welfare problems also increased and service providers were put under enormous strain. Others who lost their farming land and homes to the growth of the town and mine found themselves further from basic services and markets. But perhaps the most serious issue for the many less advantaged, and also poorly paid civil servants, was the increased cost of town living. The extent of inequalities in the population undoubtedly increased in this initial period.

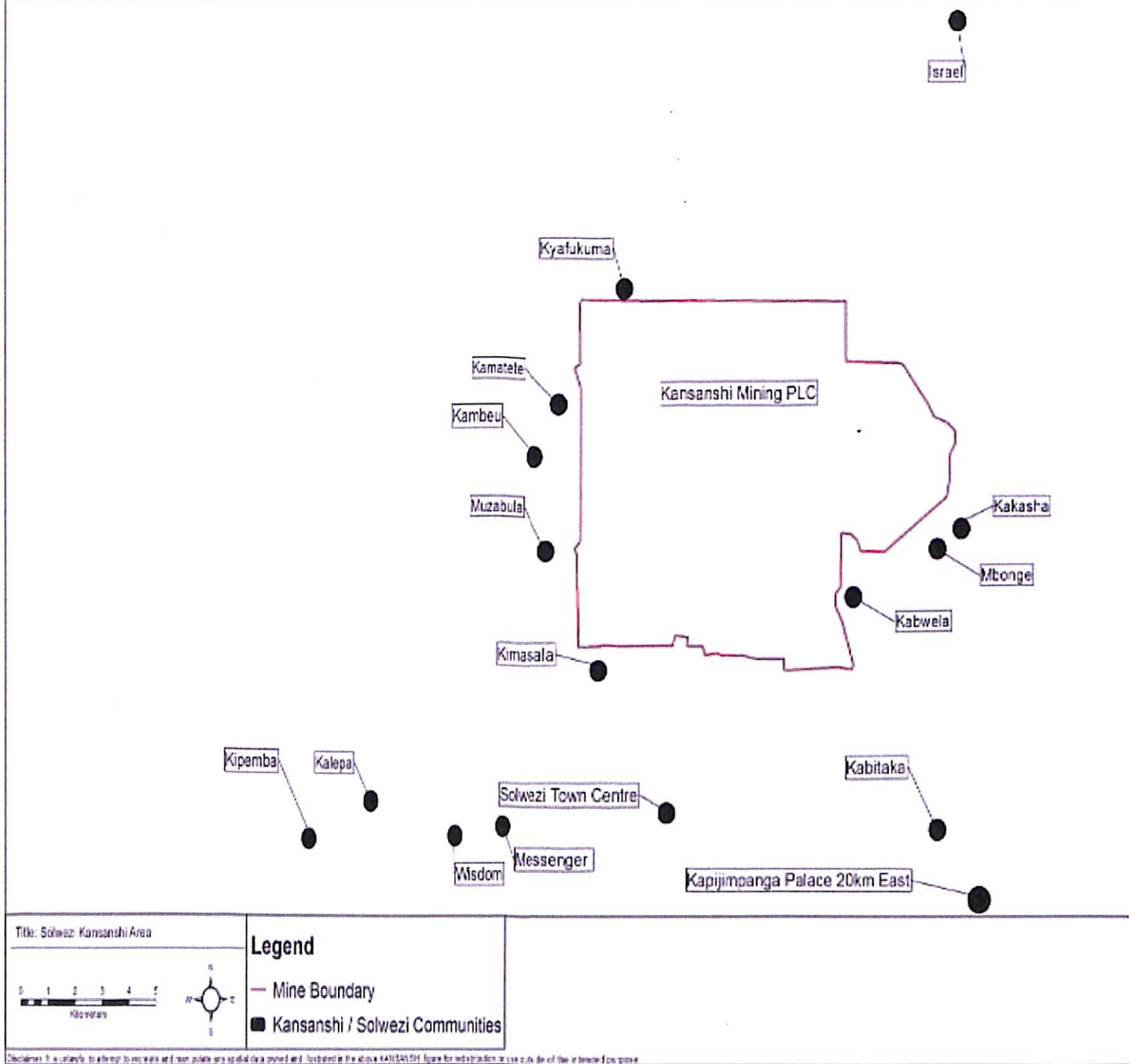
However, the picture was not all bad, for much cash was flowing around the town and many different types of jobs had been created, including outside the mine. There was also a high demand for locally available building materials such as stones and sand while other items like house fittings and roofing sheets were rushed in from outside the province. The demand enabled building contractors and large and small hardware shops to flourish - and also local people to make money from providing the natural items. There was an increase in the number of better-quality houses, lodges and hotels and an increase in rental properties which benefited landlords. The number of commercial services increased, including phone and internet companies, banks and fuel stations, providing an unfamiliar wealth of choice. A large-scale mill and storage shed were built in 2013, enabling, for the first time, locally milled maize to be available within the province. There was also an improvement in the quality of shops along the main road and in later years, around 2015/16, there was a sudden burst of modern shopping malls being built. The increase in population also created a large demand for agricultural produce with markets flourishing as a result. Even if local farmers were not always able to provide the regular supplies or quality needed by restaurants, lodges and Shoprite, those that could get produce to town found ready sales, at least at the markets.

There was also reported to be some diversification of livelihoods from subsistence farming amongst the semi-urban population, with more opportunities now open to even the poorly educated, because of the increased population, many of them with money to spend. Some established small road-side stalls to benefit from the increase in passing traffic while others found jobs such as domestic workers, security guards and building labourers, or provided building materials and charcoal for sale. The developments were not likely to have lifted the very poor out of poverty but it did give many some chances to increase their incomes, at least slightly. The new middle class were able to benefit more, but it was the small, well-connected elite who really profited, as did the Council from the large increase in local tax revenue - although its capacity to fully collect was severely challenged and there was still insufficient funds to meet the growing needs. In addition, some families back on the Copperbelt and in Lusaka also benefitted from having their spouses in relatively well-paid mining work.

But as many indicated: 'Yes, the mining boom is terrific, BUT ...'. The developments were exciting but confusing, and something of a mixed blessing for many. It was also like living *between a rock and a hard place* for without the mining boom there would be little or no economic development, and with it, so many new problems were being created.

Figures 35-41 provide an indication of the nature of the various developments, including both large and small businesses thriving and not so thriving in basic and better conditions.

Kansanshi / Solwezi Communities



Map 9: Map of Kansanshi mine area, the town and mine-related communities. Credit: FQML, 2015.



Fig. 42: Typical rural village, Chief Kapijimpanga's area, not directly affected by the big mines because of its location 20kms from town but with large scale sand mining going on in the area, 2014.

Local Area Communities



Fig.: 43 Chief Kapijimpanga officiating at a ceremony, March 2019. Credit: John Mubambe, KML.

Description: The revival of Kansanshi mine also impacted on local communities in Chief Kapijimpanga's (Fig. 43) area because of its need to close off its whole site for mining expansion and because its opening attracted many job seekers. The company also needed to obtain land outside the site for related purposes and its exploration teams were working in the neighbourhood – and consequently raising local expectations.

Apart from a very brief mention in Blandford's 2002 EIS no study or report about the nature of local communities in the pre-FQML decades were found. However, it is known that they followed the usual Kaonde lifestyle. They lived in small villages but farmed further away and stayed on their rotated plots in temporary shelters during the farming seasons – just as with today's rural lifestyle (Fig. 42). They also moved around a lot and hunted and accessed the forests for various products. It was reported by the 2010 Kansanshi social study (described below) that some groups had moved close to town in order to access the better health and education services over the years before Kansanshi moved in. But they still farmed elsewhere, including around the rivers running through the mine site, and even on it. Some had moved to live beside the T5 roadside, as had happened all over the country when main roads were first built.

In the FQML era ten near-by groups became identified as Kansanshi mine affected communities: Israel, Mushitala, Muzabula, Kimasala, Mbonge, Kabitaka, Kabwela, Kyafukuma, Kamatete and Kambeau, their locations identified in Map 9.

Because the mine site had not been completely fenced until 2006 the developments also impacted on those people who had informally farmed and collected water and firewood there. Also, a small group of Lamba people, known as the 'Israel' community, even lived on the site, thirty-three households of whom were resettled elsewhere in 2005, as described below.

The only community study found was the Kansanshi Social Survey (Kansanshi, 2010) which provided the following information of the socio-economic attributes of the lives of these communities. However, because it was undertaken eight years after the new developments commenced it cannot be regarded as baseline data. But it does provide useful information on their demographics, economic status, ethnicity, education, health, employment, food, land ownership, farming practices, housing and ownership of household items. Twenty percent of six communities were surveyed in detail, and 100% of the seventh, Israel, totalling 3,199 households.

In terms of their duration in the area it is thought that the Mushitala and Kyafukuma communities had been in existence for more than six decades, while both Kambeau and Kimasala had moved to their locations from the Kyafakuma area in the 1980s, attracted by the access to health and education services which had developed in Solwezi town area. The people in Kabwela were more recent arrivals, from 1994. There was no specific study for the people of Mbonge/Ngombe area but their characteristics were known to be similar to those of the other groups. It was not possible to find historical information about the Israel community and why they were on the mine site, except that they were Lamba, who traditionally reside to the east of the Kaonde chiefdom.

Kimasala and Mushitala were categorized as peri-urban and the rest as rural. The data indicated that the rural communities were heavily reliant on farming for their livelihoods, had low levels of education and were a predominantly young population, half being under fourteen years of age. Average family size was 5.5 in both areas and there were more female headed households in urban areas. Formal employment was almost non-existent in rural communities and very low in peri-urban areas. Three quarters of the people were Kaonde and all spoke Kaonde as their main language. No communities were 100% literate and in four the level was only 50%. Most had problems being self-sufficient for food all year round, with a 'hunger' period of a couple of months early in the year, which is not uncommon in Zambia.

Farm plots averaged 2 ha, land was traditionally owned (i.e. not titled) and maize was the most commonly grown crop, with a variety of other food items also produced. The majority of houses were grass roofed and built of mud, or less commonly, with bricks or stone and mud, and with dirt floors (see Fig. 44). Notably, there were only small differences between the peri-urban and rural communities, with the peri-urban being better off in terms of access to basic services but not all that different from the rural ones in many other respects. 'New' Israel was an outlier for most categories, generally being worse off than the others. Overall, the majority of surveyed households were living a subsistence lifestyle in very basic circumstances, including those in the peri-urban area.



Fig.44: Kabwela, a Kansanshi peri-urban area community, in the wet season, 2011. Credit: Leeds, CCA.

Impact: The early years were a particularly sorry saga for the communities which had been living and/or farming between the town and mine site, and those on the eastern side. The disturbances commenced in 2003 and accelerated when the mine site was fenced off in 2006 and went on for over a decade, communities being impacted with varying degrees of severity.



Fig. 45: Looking west towards the mine site across former Kakasha farmland, with the tailings seen in the middle of the picture, looking like a lake, and gradually spreading across the valley, 2014.

Some residents in Mushitala, Muzabula, Kimasala, Mbonge (which includes Ngombe, Mwanza, Kabitaka and Kayapatala) and Kabwela lost their farming land and a few lost their houses and farm structures. Some had to change their farm plots as many as three times and many lost access to some forest areas and some streams.

Some also lost their farming land to what became the second tailings facility directly east of the mine site at Kakasha (Fig. 45), a large area which happened to be limestone rich and consequently did not require fertilizer for maize farming. The loss of that land was therefore significant. Others lost their livelihood gained from conducting small scale activities such as stone crushing and wood collection for charcoal although there were other opportunities further away. Farmers who had moved from the town area and started farming at Kakasha had to move yet again and then a few who had started farming at Kabitaka also lost these fields to the new housing development.

In the end, a total of 316 households were affected, as well as 108 structures, as well as 265 fields. Over US\$1m was eventually paid out by the company in compensation, a school with two staff houses and water supplies were built by the company and restoration of livelihood projects were undertaken with free farming inputs for two seasons.

The various processes regarding relocation and compensation were problematic for a number of reasons. The company changed its plans a number of times which resulted in increased land requirements consequently affecting the communities on a number of occasions. In the initial years the company used short-term, fly-in-fly-out consultants who were not knowledgeable about local society and had conflicting ideas about how to deal with the processes. The Council was only erratically involved, failing to ensure arrangements were run smoothly and that the rights of communities were respected. Compensation payouts for some, were dragged out over a period of more than ten years, a few still being outstanding as late as 2015 (in this case due from the Council, not the company). A community representative also absconded with a community payout in the early years and opportunists trying to get in on the act complicated the eligibility data. Variations in the compensation rates used for different groups was particularly confusing and upsetting.

There was also confusion about whether government or the company was responsible for setting the rates, and about who was to be compensated. There were also delays by the traditional authorities and local government in allocating new land which was acceptable to the people. A peaceful community blockade of the road to the new tailings facility in February 2012 forced government and the company to pay attention to their complaints.

A major issue for those who had to move away from the town area was that they lost their easy access to services and markets – a serious disadvantage for people without vehicles and little money to pay for transport. It contributed to making them more disadvantaged than they had been before the mine. Cheelo (2008, p. 156) recorded one resident in 2007 exclaiming:

We used to live far away from town, but now town has come to where we are, why should we leave it and continue staying in the bush? Who do they want us to leave this town for? Are they special people that should be living in town and some of us should always live in rural areas [which lack access to health and education services, and cash paying jobs]?

An additional problem occurred when the Council extended the town boundary in 2008 by converting traditional land to Council land, which compulsorily took away local residents' land rights. They were meant to be compensated with the allocation of 1,000 free plots but there was a high standard housing requirement for them and most local people did not have the financial capacity to build such a residence. Some of the communities close to the mine site around Kabwela also suffered from the failure of an aborted *Jatropha* project which had been foisted on them without consultation by the company as a means of improving their income during the early days of the mine expansion. The project had raised expectations of good income gains but seriously disappointed when it was halted by the company. This decision was very upsetting for the farmers who had stopped growing saleable maize to accommodate the project. *Jatropha* projects were reported to have failed in other areas too (Kalinda et al, 2015). A well intentioned 'Green Village' project along the Congo road also failed to develop satisfactorily.

Contributing to the problems was ineffective communication between all players, including the Council, the company, the Chief, the Sub-Chiefs and the people - who themselves were not a cohesive group and who were widely dispersed. It didn't help that many matters were not handled well in the early days, partly because the previous Chief dealt with the initial arrangements by himself and failed to communicate adequately with his people who were in ignorance about what he was approving. Failing to understand that a Chief only holds land in trust for their people the company dealt directly with him as if he was the landowner, rather than ensuring that communities were also involved - even if they were far from being cohesive. Elements of self-interest appeared to have been a factor also, indicating an issue regarding the role of Chief which has occurred elsewhere. Also, the Chief was ill for some time, during this crucial initial period, finally passing away in December 2008. The situation was aggravated when the appointment of his successor in 2010 was later challenged in court, a process which dragged out over the next eight years and caused much friction within the communities and disturbed lines of authorities.

These issues contributed to a lack of transparency and poor communication about what was going on and added to the confusion and anxieties about what was or wasn't happening. Also, the company's social team was not adequately staffed at this time to deal with such undoubtedly complicated social issues.

The difficulties being experienced were aggravated by seeing many (better educated and skilled) new arrivals to Solwezi living around them 'eating and living well', because they had obtained employment. Those affected were reported to be feeling that they had been taken advantage of which was very disempowering. This was especially so as few had managed to get jobs at the mine because of their low levels of education and lack of relevant skills. Their expectations of working on their 'mine' were largely un-realized and it was understandably confusing for them given that it was their own land which had been taken over and no surprise that their anxieties continued over the years, as was observed by this author even as late as 2014.

The underlying fear amongst the local people was that not only were they losing their land but especially that they might be losing out money-wise. But eventually matters settled down and the situation did improve, largely because of wiser subsequent leadership and improved communication arrangements. The latter included the appointment of a respected local community liaison officer, the establishment of a Resettlement Committee and by the company paying more attention to community voices and being better staffed. The resolution of the compensation issues and a gradual adaption to the reality of the changes were also factors in improving the atmosphere. This change was never going to be easy for local people but it was much more complicated and difficult and took much longer than it should have done.

Another aspect was support for farming. Given their largely subsistence agriculture-based lifestyle, interference with fields might have meant the difference between surviving and starving. Well aware of this risk, the company introduced a Zimbabwe-model conservation farming project to help to fill the gap. Farmers were motivated to participate in the new practices by the distributions of free fertilizer and seed. Production rates increased and the resulting crops helped to tide them over the adjustment period.

The company had a policy of not building resettlement housing, instead it provided monetary compensation to those who had lost structures.

But it didn't help that when compensation was finally received and despite guidance on its use, some squandered their payments and became destitute as a result. The situation was made worse for those so affected because of having lost their current, easily accessible farm-lands and initially not being allocated new ones which were acceptable to them i.e. they were too far away and/or did not have easy access to water. Most importantly, few were able to obtain mine employment because of their low levels of education and appropriate skills and no effort was made initially, to come up with low skilled work for them.

Others however, used their compensation wisely to build solid new houses with iron roofing in the Mbonge (Fig. 47) area and set up small businesses. But their initial dreams of being made instantly 'wealthy' by the mine developments which were occurring on what had been partly their own land had turned out to have been based on false and unrealistic hopes.

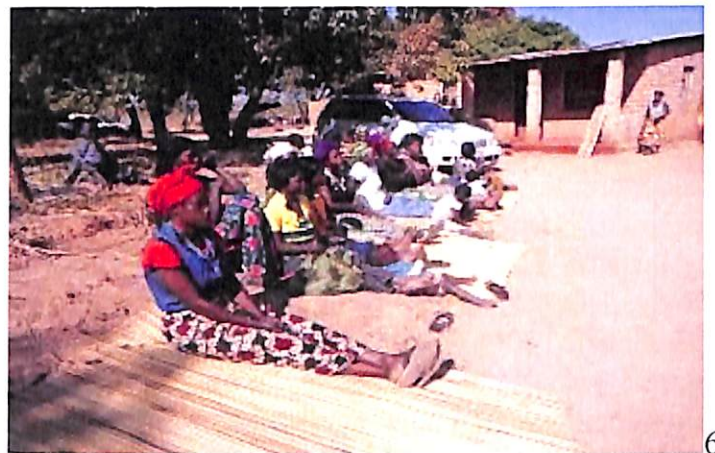


Fig. 46: Mbonge, with some signs of modern development - cars, solid houses and tin roofs. 2014.



Figure 47: Kabwela, a typical area, east of the mine site, in the dry season, 2012

There were other impacts: Some communities were affected by the Solwezi-Congo road being diverted twice, making the distance to town much longer for Kyafukuma, Katete and New Israel residents. It also made the trip to Kipushi on the Congo boarder longer for the increasing amount of through-traffic, much of which was engaged in lucrative cross-border trading. However, Kabwela (Fig. 46) did benefit somewhat from that changes because the road moved closer, giving them increased access to passing customers for sales of their produce.

But residents of Ngombe (part of Mbonge) had the unpleasant experience of watching the Kabitaka housing estate being set up just through a nearby fence, with all the modern facilities it did not have, including power and water. Those who moved to the east were also placed at a greater distance from the town area with its public and commercial services by the presence of the tailings dam, the expansion of which had taken over the former Kakasha farming area to the east of the mine site (Fig. 48) . It was there that ever-increasing amounts of white coloured waste material crept through the once good farming land, and which will eventually fill the wide valley, destroying all growth. Its presence was a constant reminder of what they had lost. Tailings dams remind that approval for a mine site may underestimate just how much land is to be lost.

Despite the initial efforts made by the company, including provision of bore holes, school facilities, agricultural support and health programmes including malarial spraying, many of those remaining in the town area felt they had become second class citizens compared to those employed newcomers who had become their neighbours. They also faced competition in accessing health and education services as the population influx grew, as has already been described. However, on the positive side, those able to continue farming did benefit from the increased numbers of customers for their produce, and the provision of free fertilizer helped for a period.

Some were able to adapt to the changed circumstances and a diversification of livelihoods did occur, as Cheelo (2008) reported. These changes included being able to hire themselves out for labour, especially in the burgeoning building industry, as well as selling produce and running small businesses. Just to what extent this was happened does not appear to have been studied so it is not known whether these opportunities persisted and if they were enough to create a reliable and adequate livelihood for a number of people.



Fig. 48: Tailings spreading over the Kakasha land east of the mine site, 2012.

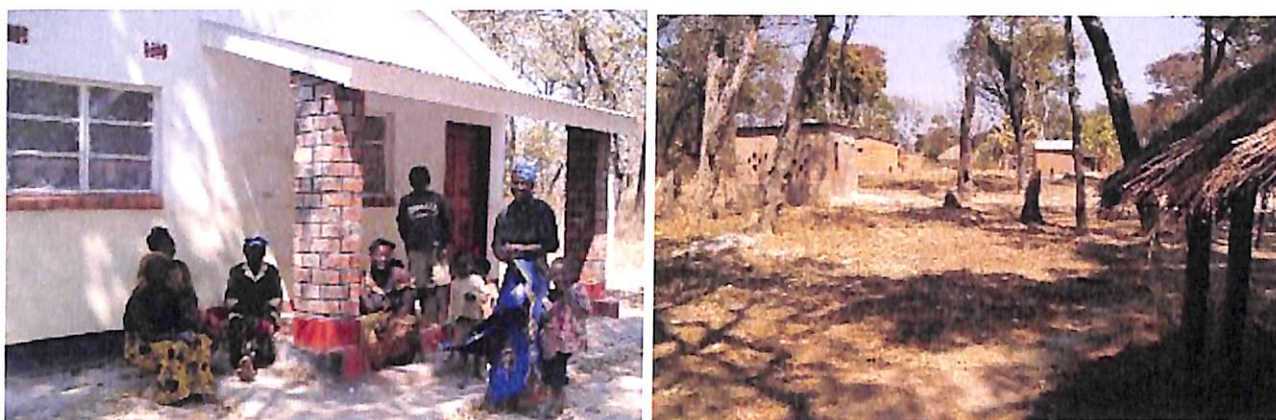


Fig. 49: (L) Chief's model house built by the company, with local women. Fig. 50. (R) Houses built by the residents, New Israel, 2012.

One community, Israel (who were largely Lamba, not Kaonde), had a somewhat different experience from the others. They had lived within the old mine site for some years and thirty-three of the families had to be relocated in 2005. Some moved to the town area but, at their own request and in an arrangement with the nearby Lamba Chief, Mulonga, twenty-seven families were moved to what became known as New Israel. This area had previously been a state ranch and was a relatively isolated area seventy kms from town along the Congo road and eight kms off to the east i.e. to the north-east of the mine site. It had no facilities and the nearest basic school was 8kms distant and the clinic 27kms away. The company built a dirt road to the area and a community house which the Chief would stay in when he visited - but did not build housing. The design of the house was intended to be a model for the people to follow when building their own (see Figs. 49 and 50). Residents were paid to clear the land so they could build their own houses, and also the land for the clinic and school, and they received resettlement allowances.

Five wells were also dug and roofing sheets, bicycles, seed, fertilizer, spray pumps, school materials, first aid kits, mosquito nets, chlorine and footballs were provided. One teacher was provided, paid for by the community. Bee keeping and *Jatropha* growing were also supported but the latter was aborted as described earlier.

In subsequent years the 'New' Israel community made constant claims about being disadvantaged, despite it being their choice to move so far from town, and despite compensation having been paid out and multiple contributions to their well-being having been made. The distance to services was a major issue, especially considering how close they had been when living on the mine site.

But it had been their choice to move out there. It appeared that a strong dependency attitude had developed, with expectations that the company should do everything for them and continue to do so. As with the other affected communities they were also very disappointed not to be employed by the mine, even though they were now so distant from it and generally unqualified to do so.

Their complaints were at least partially justified because of the very delayed construction of the school, clinic and bridge which had meant that their new lifestyle did not start off well. The clinic and school were still not finished until 2013 (see Figs. 51 and 52), eight years after the initial move, and the delay in building a wide-enough bridge was particularly disadvantaging as the area was cut off in the wet season.

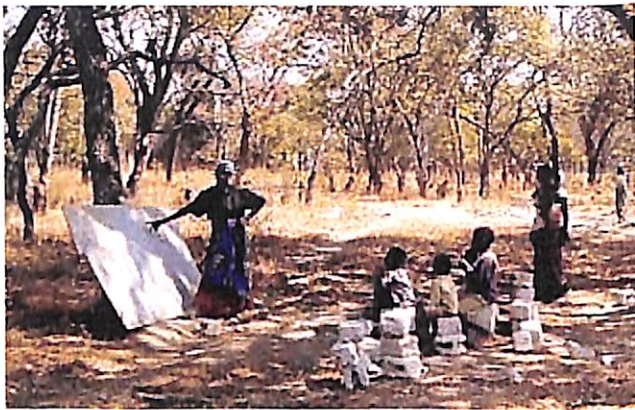


Fig. 51: (L) Mrs. Jen Sikapa illustrating how school was being conducted under the trees at New Israel because of the long wait for a building. Fig. 52: (R) School yet to be finished, New Israel, 2012.

Also, the provision of government services was minimal, perhaps understandably because of the distance and very rough state of the Congo road, and the lack of staff and travel funds, not to mention other priorities. It may have also been because the staffing needs had not been factored into District plans.

While the company did hold numerous meetings with the community in the early years the lack of a dedicated, experienced resettlement officer to support their adjustment and oversee the construction components contributed to the issues. The capacity of local contractors hired to build the school, clinic and staff houses, and deadlines affected by the rainy season were also issues. Despite all the contributions, and as with the ineffective handling of the arrangements with the other communities in the same period, this episode reflected poorly on the company's reputation at that time.

Apart from intermittent visits by the company staff they were quite isolated in the early years. They appreciated the attention paid to them in 2007 when Cheelo visited New Israel as part of his research while Caritas Solwezi Extractive Industry Project (Caritas Solwezi project) staff started paying them visits off and on from 2009 and advocated for their needs to the company and with government. In January 2010 Kansanshi included them its detailed social survey of the community and in November that year a Leeds University led research team documented some of their experiences (Alstine et al, 2013). But otherwise the community reported feeling very neglected – such feelings partly reflecting somewhat unrealistic expectations.

However, a decade after they moved out there the situation had improved for the New Israel community. People were more settled and the area was even attracting new residents because of the availability of land, its farming potential and the reduced prevalence of malaria and security problems. Its close proximity to trading opportunities at the nearby Congo border may have also been an attraction. A continuing issue was their lack of transport and, shared with other travellers, the very poor condition of the Congo road which they had to use to reach town services such as the hospital and also the markets for their produce. As already mentioned, this road was also an increasingly important route for both national and international traders through to the border. Government, in recognition of its economic importance, did upgrade the border office facilities and undertook some limited re-grading of the road but its condition still caused much wear and tear to even the toughest of vehicles. It was still not improved by 2019. Fares were also expensive for local people to bus or truck into town.

This story does remind, that even with a rocky start, with time, communities will usually adapt mentally and physically and settle into a new lifestyle. They will also start to use their initiative if the basic environment is conducive for farming.

Another group of individuals affected were those who were farming in an ad hoc manner on the mine site (but not living there) at the time FQML took over. They were given one year's warning to leave and told not to plant from there-on, an instruction which they followed, so no crop loss was involved. It turned out that the majority of farmers (248) had not been given permission letters from the old Chief to farm there, so only the five who did have permission were compensated for loss of farm plots and temporary structures. Despite their lack of legitimacy in the area some of the others took a case to the High Court around 2005 but they lost on appeal because of their illegal status. Such disputes added to the negative atmosphere in the early years but also served as a reminder that land use is often informal in such communities and in the past not usually an issue. But with increasing industrialization and urbanization the situation was becoming complex.

The largely agricultural communities north and west of the mine site (Kyafukuma, Kambau and Kamatete) were also affected, but in a different way. It was mainly due to having their access to town cut off in 2003, their original route having run directly through the site. This meant having to use the much longer route via the Congo road to reach town to sell their produce and to visit the hospital and other government facilities. However, an old road and various tracks down the western side of the mine site became increasingly used, including the rehabilitated road to the smelter which provided viable alternatives. As with the other local communities they were upset about the lack of employment opportunities, about which they too held high expectations, and also about not being able to sell their produce directly to the mine as they used to do.

Other Issues: More generally, fears were expressed by neighbouring communities about the impact of dust and blasting and later the potential of being affected by the fumes from the smelter which commenced operations in mid 2015 on the western side of the mine site close to their villages. The company had to deal with a number of claims for crop damage from fumes over the years which it was able to demonstrate were opportunistic claims for compensation rather than rooted in reality. The smelter had the latest technology and so does not have emissions like the old Copperbelt ones. Blasting was also falsely believed by some to cause damage to local buildings when in fact such problems would have most likely have been due to shoddy construction and rain damage. Unfortunately, such claims were quite common over the years, illustrating a continuing focus on the company as a potential source of income. Dust outside the mine site was also complained of in the dry season, but dust also occurs in non-mine areas and was also due to the lack of sealed roads and cleared land. Dust inside the mine site was dealt with by a regular watering programme. ZEMA was responsible to testing for such issues.

On its side the company had to cope with many instances of small and larger sale theft of mine items and various other incidences affecting the smooth conduct of their business. It also experienced corruption by a local staff member within its Foundation in its early years. In such an environment a company has to allocate considerable resources to protect its property and resources.

NGO Support to Communities

Cheelo noted during his 2007 fieldwork, when the local situation was still in a major state of flux, that local people in the peri-urban area felt helpless to do anything about their problems. They felt like they were being treated as second class citizens – their issues neglected by both the company and government, and also, often, by their Chief.

It wasn't until 2009, seven years after the start of the mine revival, that the affected communities finally received some outside support. This came from a Non-Government Organization (NGO), the Caritas Solwezi Extractive Industry project which helped to educate the communities about their rights and how to advocate for them. Another NGO, Land Alliance, also provided some education about land rights. Because of the lack of timely response to their early issues from the company and government, community members used their newly learned advocacy skills to highlight their needs. They did this first by conducting strategic protests, involving a road blockade of the tailings facility, in February 2012, and thereby preventing worker access. Notably, the police, recognizing a peaceful action, did not stop the protests or press charges. This was a significant event and the first time a North Western community had stood up for its rights in a well-organized manner and government and the company were forced to respond quickly to resolve the situations. As a result, the resettlement working group was established, ZEMA paid a visit, the District Commissioner became involved and some overdue compensation payments were made.

Similar protests took place later, involving the locking of the Kabitaka housing estate gates in March 2013, again resulting in government action and forcing resolution of the compensation issues. Confusion regarding compensation rates and the processes, some false claims, the lack of clear leadership, and the lengthy delays in resolving matters were the major issues.

It was notable that despite the multiple problems over more than a decade the situation never actually exploded into outright violence, as might have occurred in some other countries. This may have been at least largely due to the splintered nature of the communities, the non-confrontational and low key, diplomatic style of the company social team manager, the peaceful approach advocated by the NGO and the way in which the protests were conducted. Matters did finally begin to improve as most of the key issues were eventually resolved by the company, government and the Council. But the communities should never have had to resort to such matters to obtain a response to their issues.

These protests would probably not have occurred if the company had been aware of the importance of investing adequately in social matters i.e. having a team of social scientists with experience in resettlement to handle the invariably complex community matters. Such skills would have helped to gain a better understanding of the nature of local culture and politics, necessary to skilfully handling what are inevitably complex situations. This is not to say that all problems would have been avoided because it was a very new situation for all players, including government, but they surely would have been lessened.

It was also to be regretted that it had to take an NGO to help communities to stand up for their rights. The NGO filled the void created by government having failed to take responsibility for protecting the rights of its people. As one local informant said in 2012 'The communities had to take matters into their own hands because the facilitator was sleeping.' NGO assistance was, on occasion, an important aspect of the latter half of the first decade.

As a result of the multiple difficulties experienced by communities, the company's public image in Solwezi in the early years was quite negative. This initially detracted attention from the many positive contributions that they made through the very large CSR programme which was being delivered to local communities. As one of the mine company staff frankly and ruefully admitted to this author in 2013: 'We are living with the consequences of the early rough treatment.' The seed was definitely not well sown.

However, as can be seen from the above description of events, the company was not solely responsible for the problems, for others also played a major part. On the community's side, there was increasing awareness that many of the issues which had arisen were in fact not due to the company but to weaknesses and machinations within local government.

Over time the situation improved, the outstanding compensation matters were eventually resolved and a professional resettlement officer was recruited to join the company's social team, as well as a local community liaison officer. Subsequent resettlement and/or compensation exercises for the Smelter Road and Kipemba housing estate were completed smoothly, in a timely manner and without incident. Also, the company increased its efforts in subsequent years to ensure job opportunities for unskilled local villagers – a late but important step. These developments helped, to some extent, improve the local atmosphere, as did the mine tours (see below) and the increasing recognition that the company was making valuable CSR contributions to the communities – even if all needs were not met because of the population influx.



Fig. 53: (L) Kansanshi's community banking group, Credit: KML Monthly report, 2016. Fig. 54: (R) CSR Manager Bruce Lewis, the much respected 'captain' of the CSR 'ship' who has been with the programme from its early days. With Anthony Fulwe, District Administrative Officer, celebrating the handover of a classroom block, to GRZ, Jan. 2019. Credit: John Mubambe, KML.

Corporate Social Responsibility (CSR)

The company undoubtedly made very significant contributions to local communities and to the Council over the past decade, amounting to millions of dollars of expenditure through its CSR programme and tax payments. An impressive array of company supported projects have supplemented government's efforts to address local basic needs, covering the areas of education, health, agriculture, water, environment, livelihoods and business development opportunities and gender equity. (Figs 53-59). As well some support was provided for cultural, sporting and social welfare matters. Infrastructure projects, which were the company's specialty, included major renovations of Solwezi General Hospital, a mortuary and a Gender Based Violence service facility on site, a Mother Child Health Wing at the urban clinic, renovation of the Solwezi library, the setting up of the Kyawama market, a pedestrian bridge over Solwezi river, the show ground and sports, school and clinic facilities. Later the modern Solwezi technical training institute was established. As well, various road improvements were undertaken, including to the notorious T5 and the renovation and expansion of the airport runway.

Kansanshi also improved its own facilities and capacity to support its community programmes by establishing a purpose-built town office in 2013 on the road to the mine gate, formalizing the temporary office previously set up in town. These facilities became a useful venue for trainings and meetings, providing an access point for the public, including enabling job applicants to access computers to review positions and apply online. Other facilities and activities were also set up there, including those for training in farming and green charcoal making, and storage for the farming inputs.

Local people failed to appreciate the extent of these contributions in the early days and were very dissatisfied. This attitude was at least partly because the various projects were physically widespread but also because many had unrealistically high expectations about how they personally were going to benefit from them. They failed to understand that they too were also benefiting from the many community contributions, such as renovations to the hospital. Most of all they failed to understand that the era of mining companies being responsible for the well-being of whole towns was long gone.

Another issue was that while the company was very efficient at infrastructure projects, often they required government inputs to make them fully functioning e.g. schoolbooks and teachers, medical supplies and nurses, which often weren't available, or in a timely fashion. Such delays undermined the effectiveness of the contributions but were often due to the long lead-time government departments need to initiate new activities. It was often not appreciated that the demand for schools, clinics, water supplies and so on had greatly increased because of the un-controlled population influx and that neither the company nor local government could address all of those needs. The provincial government was certainly not adequately resourced to do so.

CSR Programme Administration: The management of the CSR programme was initially, as some other researchers (including Alstine et al, 2013) have also noted – paternalistic, being top down and non-consultative. The amount of company funds to be expended each year was decided by senior company management and known to be related to prevailing mineral prices, as indicated by the Foundation not functioning during the 2008/09 price slump. What other criteria was used was not public knowledge. There was little or no government or community involvement in decision making regarding the allocation of funds, and selection of projects appeared to be ad hoc and not based on a substantive analysis of local needs. No research or base line study was undertaken until 2010 to guide activities. The programme lacked a cohesive design and a monitoring and impact evaluation system in the early days.

While all of the sectors chosen were appropriate, structurally, the organization of the programme was somewhat idiosyncratic, being split with the 'Kansanshi Foundation' curiously dealing only with agriculture-related matters, mainly company-imposed *conservation farming*. Education, other social matters and Health was managed separately. The Health activities, as well as providing community health support, also included services for mine staff, which is actually labour related occupational health, and so, arguably, categorized incorrectly as CSR.

In addition, partnerships with local government, NGOs and communities were minimal initially, raising the question as to how well projects tied in with local plans, budgets, staffing and priorities. While it is always much more time consuming to work closely with government and communities, doing so would have ensured that activities were in tune with local plans, and not just decided on a management whim.



Fig. 55: Asah Chinyango demonstrating the making of +++++green charcoal. Fig. 56: Surveying for a bore hole for water, Mbonge. Credit: KML, Monthly Reports, 2017.

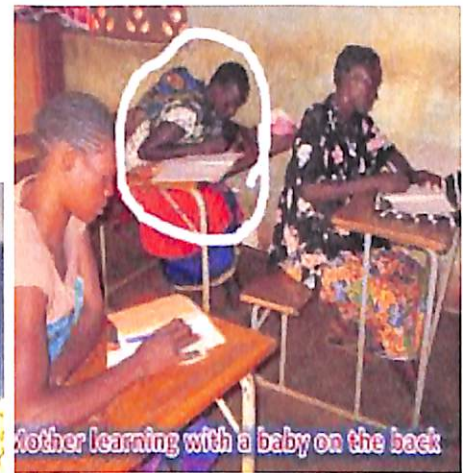


Fig. 57/58/59: Long-time Community Coordinator/Senior Supervisor CSR Victor Nsana in front of the town office facilities where so much training has been provided in many different areas over the years, including women's literacy (see R), centre is John Mubambe, KML's media officer with orphan Abraham Kasongo whose secondary education was funded. Credits for 58 and 59: KML Monthly reports, September 2014.

With some degree of local involvement there was a better chance of sustainability and a sense of local ownership and would have constituted a less paternalistic and authoritarian approach. Dyer et al (2013) usefully discuss some of these issues. A more cohesive approach gradually evolved, with interventions beginning to be based on provincial priorities rather than on ad hoc company ideas and community requests, a development which the Hanshep Mining Health Initiative (2013) noted.

An example of the issues associated with this style of administration was the initial focus on the growing of *Jatropha* plants for oil which local farmers were encouraged to take up, without any research or consultation. Farmers trustingly planted, replacing their income generating maize with the new crop. But the project was cancelled because the company suddenly decided it wasn't worthwhile. This decision left the farmers let down and out of pocket – seriously disadvantaged and not compensated. This development was followed by the introduction of a Zimbabwe model of conservation farming which became the major thrust of the Foundation programme. While the initial results looked positive and made for good public relations images, efforts proved to be non-sustainable for a number of reasons which are discussed in more detail elsewhere. In addition, the activities initially by-passed the local Ministry of Agriculture and there was some resentment that it was expatriate-driven. It became apparent that local people were willing participants but largely because of the subsidies initially provided. The free fertilizer and seed, and their ready availability at the right time from the Town Office shed, was understandably, a strong motivator. This provision was quite unlike government inputs which were almost always delayed, rather than from any wish to learn new skills and systems. On reflection it was obvious that its value was more as a form of food security for over 10,000 people. This was an important objective in itself, and perhaps a more realistic one for the initial adjustment phase.

But then again, maize never was sustainable in most Zambian soils because it relies on expensive fertilizer and on watering, unlike some other crops such as sorghum, millet and cassava, even with the best of mulching. Other projects were also tried with disappointing results, such as the 'Green Village' and efforts to upgrade the skills of marketeers. Another example was described by Fredrikson (2017) when he came across a classic example of 'elite capture' during his field work. In this case a poultry project for community members was taken over by a senior member for his own benefit.

That is not to say that other efforts weren't helpful but these experiences indicated the lack of adequate assessment of the needs, and the failure to take into account local cultural characteristics (including political aspects). Being unfamiliar with the history of agricultural projects in the province may also have been a factor. Learning lessons from past donor support for agricultural projects, as discussed in publications by Crehan and Von Oppen (1994), Crehan (1997) and Jaeger (1981, 2004 and 2015), among others, might have helped improve understanding and guided more appropriate activities. It might also have lowered expectations about what could be achieved more realistically given the local cultural and agricultural systems context.

The rush to implement and demonstrate results (but also to prevent hunger) was another issue, going against the local grain which was not open to the speedy adoption of innovations. Also, the company did not always link well with government agricultural services. Such different ways of working, and different strengths and weaknesses created frustrations and tensions on both sides. The reality probably was that if government and the company had consulted over choices, and adequate homework had been undertaken, implementation would undoubtedly have been much slower but possibly more sustainable – but less impactful in annual reports.

The experiences of the past decade indicate that local attitudes are not always conducive to benefiting from well-meaning assistance, for there was a tendency to be conservative and a lack of motivation for taking responsibility for making things work. An underlying issue was that local people were so focused on obtaining mining jobs that they were consequently not interested in other options. One senior Zambian said to this author, talking more broadly about the issues – 'In general, most of the problems are complex and deep rooted in the Zambian way of doing things ...' – which newcomers fail to understand.

Nevertheless, some projects were at least reasonably successful and over the years lessons were learnt, including how women are much more responsive to assistance than men, and that local attitudes can be a serious constraint to well-meaning educational efforts. Also, there will always be, in any group, a few individuals who are able to use their initiative to benefit from new opportunities provided, regardless of the circumstances.

Even if it didn't always manage social aspects competently, the company's implementation of infrastructure projects was undoubtedly much more efficient than if undertaken by government, even if they weren't done in concert with its agencies and plans. Locals recognized that this was so and it was never proposed that local government be given responsibility for handling CSR funds. Despite their short comings, Kansanshi CSR efforts undoubtedly constituted a significant contribution to local society in the first decade.

Other Contributions Made By Kansanshi: It was not often appreciated, or even known, that mining companies also contribute millions of dollars through non-CSR channels to the national treasury. In 2016 it was reported that Kansanshi provided 22.11% of total extractive industry receipts to the country. Kalumbila and FQM Operations provided an additional 9.93% and 7.01% respectively, making for a total of 32.05 % of receipts. In short, FQML entities provided the major source of extractive income to the national government. In comparison, the next highest companies were Konkola which contributed 12.2 %, Lumwana 11.53% and Mopani 10.64% (ZEITI 2016, p. 68). Its rate and fee payments to the Solwezi Municipal Council also made the Council the highest earner in the country, at a level more than double that of any other Council (ZEITI 2016, p. 70).

In addition to those taxes and fee payments 20% of Kansanshi mine is owned by a government entity – ZCCM-IH – and consequently provides additional income to government, a fact which is rarely mentioned. The question is to what extent did any of those funds ‘come back’ to the province. Answering this question would require an in-depth financial analysis to determine the answer. A superficial glance would suggest ‘not much’, as observed from the state of Solwezi town and its services.

Company fees were also paid to the Ministries of Mines, Lands and the Revenue Authority, as well as property rates and business fees to the Solwezi District Council which became one of the best, if not the best, funded Council in the country because of all the mining induced developments. For example, the company has been a major buyer of land around the town, including for the golf estate, the town offices and the housing estates, all of which then continue to pay annual rates to the Council. As well, in 2011, in lieu of local taxes the company, along with Lumwana, procured large scale road mending equipment because they could do so efficiently, in order to help address widespread public complaints about the state of the town roads – although it was the Council which claimed credit for their presence.

Not well recognized nor counted financially, was also the extent of company investment in training/skill development of Zambians, both local and newcomers, both through CSR activities but also mine related training. Thousands of individuals and some groups have been educated in all sorts of areas, including agriculture, business, banking, administration and technical skills. These activities have benefitted both staff in the mine and those in surrounding communities and must have added considerably to the human resource capacity of the province and country. There were also the many infrastructure projects such as the rehabilitation of the T5 and the airport and the additions to the Solwezi housing stock – which enabled the mine in some respects but also benefited the local area. As well, local government has always been able to rely on the company for support during local emergencies, such as bus crashes, bad weather events and major fires, willingly lending its skilled staff and sophisticated equipment to help reinforce government’s efforts. Consequently, it should be recognized that there were significant ‘shadow’ contributions which less directly and more communally benefitted Solwezi town and the residents of the surrounding area, including the numerous newcomers to the province. Kansanshi definitely had become part of the Solwezi town family.

A different issue relates to what is counted as CSR. For example, activities such as road building or renovation should perhaps be considered as normal mine-related infrastructure. Large contributions to the national football team (made once in the early days) are obviously public relations, as indeed are the mine visits. Staff-focused health and safety and HIV/AIDS programmes are primarily occupational health and safety for the benefit of the company workforce’s productivity and one could question if they rate as CSR. The animal reserve (see below) contribution may also be inappropriately classified. Accounts of local procurement also look inflated given that neither the North West nor Zambia are large producers of industrial goods which make up a major part of mine procurement and consequently such items come from elsewhere. As Chibesa (2008) reported, ‘... most of the small-medium enterprises cannot meet the requirements on their own, hence the need to team up with others ...’ [i.e. from outside the province or country].

However, none of these comments undermine the value of the majority of the many diverse CSR contributions which have been made by Kansanshi over the past decade. They have undoubtedly benefitted Solwezi town, local communities and many individuals, and relieved government of many of its responsibilities.

It is hardly the company's fault that CSR cannot solve all of the town's problems, especially given the size of the influx and the extent of the problems. Besides, such responsibilities primarily belong to government.



Fig.60: Mbonge residents and others (notably all young men) who live nearby, anxiously awaiting possible jobs outside the Kabitaka housing estate, 2014.

Other Matters

Employment Opportunities

Despite the well-known and dramatic history of mining on the Copperbelt mine jobs were still imbued with something of a magical attraction in Zambian society where poverty is endemic. Understandably people's primary concern was for basic survival, being able to provide for one's family, and especially to 'eat well', which is barely possible to do from subsistence farming. Cheelo (2008) referred to this widespread focus as an 'obsession' and an attitude which placed no value on any other types of employment. Such employment also gives an element of pride in being able to participate in the modern, commercial world. The fluoro striped overalls and hard hat were a tangible sign of one's achievement. Figure 60 illustrates the number turning up for interviews for one set of jobs and such crowds were a familiar sight along Mine road and elsewhere.



Fig. 61: Over sixty applicants, many from the Copperbelt, arrive at Floriana Lodge for interviews for mine electrician positions, 2014.

In another (Fig. 61) about one sixty turned up for interviews for a few electrician positions, including one female.

In the initial years of the developments a major source of anger and resentment within Kansanshi communities was the lack of mine employment opportunities. They had held high expectations that they would be the recipients of jobs on 'their' mine. Cheelo (2008) illustrated this sentiment by quoting one of his informants as saying 'The mine is our pillow where we rest our heads because it is so near to us.' But the local people had trouble appreciating that their often low levels of education and lack of relevant skills were serious constraints to accessing more than casual mine employment. For example, in one Year Seven level standard (the basic standard) test of applicants all 300 applicants failed. Related to this there was a simplistic understanding of what mine work entailed, few appreciating the level of discipline and OHS awareness required for working on a mine site.

In order to help promote local recruitment a system was set up in the early days with community leaders holding a list of names of people certified by the Chief as being 'local', and available for work. This list was consulted by a labour recruiter outside the mine site when suitable positions came up. But there were always more people than jobs available and many positions were only available for short periods of time, especially in the construction period. Just as happened later at other mines, this system was corrupted by the use of bribery, with better advantaged outsiders often getting the much desired jobs. Alstine et al (2013) study quoted a Mushitala resident as saying: 'The Kaonde stand no chance of employment at the mine: they have no skills, no money to offer bribes and no relatives in the mine...'

There were also reported to be problems with higher level recruitment processes caused by subtle internal mid-level company staff biases. The problem related to the fact that the company, understandably, preferred to employ experienced staff. Not surprisingly, most of them came from the Copperbelt and because the recruiters (invariably also from the same area) had a bias towards recruiting 'their own' people. The same bias was reported to exist when selecting staff for training opportunities. Such practices at times went beyond meeting qualification requirements and also occurred at other mines, despite efforts by some managers to ensure that the systems were equitable.

Also, it didn't help that communities failed to appreciate the reality of appropriate qualifications, or to understand that there were other ways of benefiting from commercial enterprises outside the mine gate. They deeply resented the situation and felt very angry about it, feelings which lingered and contributed to the negative atmosphere which prevailed during the first decade. Eventually, rather late in the game, it was recognized by the company that special measures had to be undertaken to overcome the issues. From about 2014 additional effort was made to provide opportunities for local residents, such as gardening and maintenance work on the Kabitaka housing estate and other maintenance work within the mine site. The increasing number of opportunities made available had a positive effect on local morale, even though the jobs weren't formal mine jobs.

A study to analyse employment data to clarify just how many local people (and their gender) were employed, for how long and in what capacity during the first decade would be informative. It is likely to indicate that the lack of literacy and formal, disciplined work experience would have disadvantaged most local people in any recruitment process.



Fig. 62: (L) Kabitaka housing estate housing. Fig. 63. (R) Kabitaka fee-paying primary school, 2014.

Housing, School and Commercial Estates

Kabitaka Housing Estate: Another company initiative which impacted on some local communities was the development of a modern style housing estate at Kabitaka, just over 10km kms east of Solwezi town centre and south-east of the mine site and north of the T5. There were also plans for a shopping complex, as discussed later. Work commenced on the housing estate in 2012 and residents first moved in early 2014. No one had previously lived on this land but a few people had mined aggregate on a small scale and gathered bush products and so were compensated for their loss of income. Others who had lost their Kakasha plots had started farming there but then lost them to this development (the farming must have started after the EIA (Kansanshi 2011a) was undertaken for no one was reported to be doing so at that time).

They were compensated, although the rates were disputed and appealed against, causing further delays which were not resolved until after peaceful protests were organized in early 2013, including the locking of the Kabitaka gates. Again, such community action pushed local government into helping to try and resolve the issues.

Built by Kabitaka Hills Development Corporation, a subsidiary of FQML, on 230 ha the estate had about 600 houses (see Figures 62 and 63). It was established as a way of helping to de-congest Solwezi town and also to help increase local home ownership. The well laid out estate of two and three bedroom, free standing houses on small blocks included basic amenities such as water, sewerage, power and fencing. It was a pleasant, (generally) safe and clean environment for the residents, surrounded by bush, nothing like that which existed in the town area. A temporary clinic was built and a well-equipped primary school opened accessible to anyone who could afford the fees (which were higher than those of government schools).

Its construction represented a turn-around in company mine housing policy which had meant that only senior staff were provided for on the golf estate. As mentioned earlier, the lack of lower level mine/contract staff accommodation had caused chaos in Solwezi town from the early days of the boom and contributed to the increasing cost of rentals and to the frenetic land acquisition and building boom.

Staff were enabled to pay for the houses with deductions from their salaries, leading to ownership once title was made available. It was estimated that homes would then be able to be paid off in fifteen years (at the then current rate) – a procedure by which Value Added Tax (VAT) was meant to be avoided, thus making the houses reasonably affordable. But government, understandably, may not have perceived this as a positive arrangement.

How well the ownership arrangement worked out in practice is not thoroughly documented although it is known that there were complaints that the cost was too high, as compared to town rentals. Certainly the 'rent to buy' concept which had to be practiced because of the long delays government took in providing land title was worrying for residents. Another factor was identified by Kesselring (2017) who reported that most residents, who came from the Copperbelt, did not see themselves as permanently staying in Solwezi. Consequently, the housing ownership concept may have been based on a false assumption.

The provision of such housing did contribute slightly to reducing the demand in the town area (and invariably disadvantaged some landlords). The majority of residents were mid-level mine staff, with about ten per cent being non-mine employed. The residents settled in and quickly 'Zambianized' the somewhat sanitized, fenced-in environment by establishing small vegetable gardens and, off-and-on, hosting various extended family members. Because of the distance to shops, some also set up small stalls at their houses, selling items such as tomatoes and airtime.

Kesselring also described the results of a survey undertaken by a colleague in 2015 which showed that the majority of residents were from the Copperbelt and were Bemba speaking. Also, because of the cost of living on the estate, many sent their children to government schools in the town area (which required transport), instead of patronizing the relatively expensive company-built primary school, despite the higher quality of education on offer.

As had happened earlier at Lumwana, a minority of tenants abused the privileges of good housing – justifying the need to maintain some forms of control over the estate, including having it fenced off and residents being required to abide by the 'Homeowners Rules'. The latter required some discipline to be practiced which may have not come easily for some residents. But any new community will have teething problems as residents adapt to the environment and work out how best to co-exist.

A different aspect was the perspective of the nearest neighbouring communities. Because of the cost, and most not being in formal employment, they were not able to afford to participate in this new housing opportunity. Parts of the Mbonge community in particular, had the disadvantage of being situated on the other side of the wire fence from the smart new estate – being able to see it but not able to share in its modern conveniences. Some of these residents were ones who had been previously displaced by company projects. There were also complaints raised by the local communities about not being given enough jobs during the construction phase. On a different note, it was later reported to this author that, in 2017 the Council had been sending officers to secretly demarcate more plots in the Mbonge area and to sell them without the consent of the Chief. The Council was reported by a community member to be '... full of greedy people who want to reap where they have not sown.'

From the company point of view the development of the estate did not proceed smoothly. Despite welcoming statements from government officials such as Commerce Deputy Minister Taima (Lusaka Times, 2012a), interference and procrastination contributed to the many problems in getting the estate established in good time. The major issue was government's failure to expedite the provision of land-title which was essential for accessing house loans, needed to ensure ownership for the tenants.

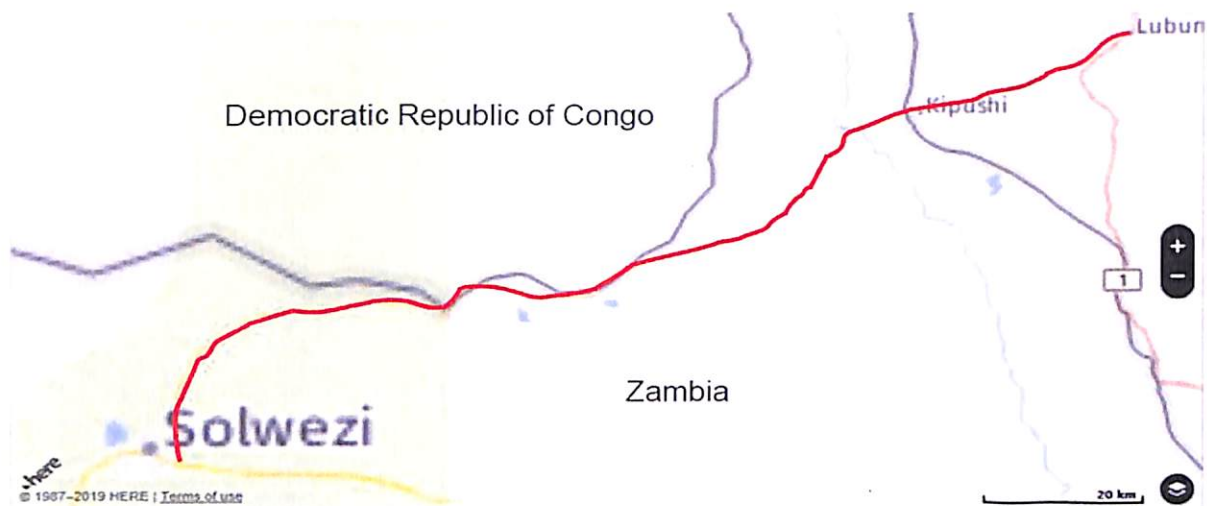
Commercial Plans: Other obstacles were also placed in the way of well-advanced company plans to increase the size of the housing estate and to build a shopping centre and other commercial facilities at Kabitaka. These components were to lie south of the housing estate, adjacent to the T5 and well away from the congested town. There appeared to be ulterior motives underlying this obstruction which may have been related to enabling the local elite to benefit from their own planned developments in the town area. Consequently, the lengthy delays caused by land ownership disputes and failure of government to provide land title were reportedly a major part of the reason for Spar and Shoprite to pull out of investing in the Centre, and for others not to participate. In addition, the company had to resort to building a private secondary school (Trident College) within the mine site, to the west, near the animal reserve area.

Kipenda Housing Estate: By late 2014 Kansanshi had given up further progressing the plans for Kabitaka and instead focussed on developing a new area to the west of town in Chief Mumena's area about 7km west of the airport. The planned Kipenda housing estate covered about 990 ha and was to include residential, commercial and industrial areas and infrastructure. This development aimed to provide a clean, well laid-out and serviced new satellite area, usefully decongesting the town area and being away from the busy traffic on the T5. The impact was relatively small. No houses needed to be relocated but some 181 farmers cultivated a total of 221 fields on 279 ha who were to be compensated. As with the Smelter Road project the community aspects of the projects were smoothly managed. The project began in 2015. However, as at 2019, the estate construction activities had been put on hold.

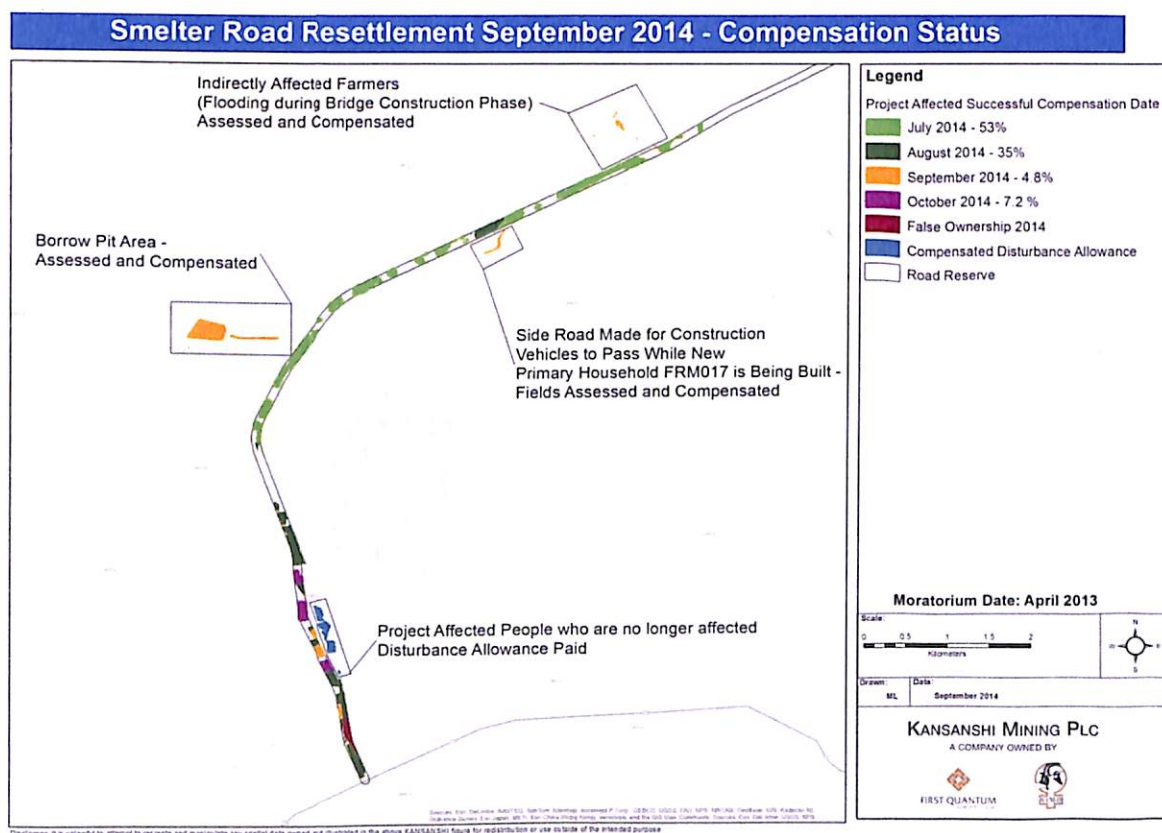
Reflections on the Housing and Commercial Developments: There was an obvious need for new, well planned serviced housing and commercial areas away from the town area, which as one observed noted '... was too messed up to be fixed.' However, given the many problems associated with business development and land ownership in Zambia it seems apparent that the estate projects were grand plans, just like the Lumwana town centre plan. This was because they did not take into account local political and administrative realities. Also, because of their associated costs a housing estate was never going to make a significant difference to the housing situation for sufficient numbers of lower income North Western residents. Such housing was only ever going to be affordable for the mid and upper levels of mine employees and a few others with well-paid jobs. Additionally, many Solwezi residents came from elsewhere and were still connected to there and it was thought that they would not be likely to stay once mining ceased.

One can't help but wonder if, instead of importing a foreign design, a simpler model wouldn't have worked better. By providing support for locally made burnt brick or cement blocks with metal roof housing, as local middle-class people themselves build, more people could have been more affordably housed. Such an approach would also have provided more local business opportunities. On a sidenote, however they are built, housing estates do create some employment - for housekeepers, nannies, security guards and gardeners, just as the company golf estate had done.

Certainly, government did not provide an enabling environment to these business initiatives and consequently created a significant and unnecessary cost to the company, both in terms of planning time and money. How much the problems which arose were related to underlying concerns about potential competition from large, well-resourced and (invariably) South African companies taking the lead over locally-led enterprises, can only be guessed at.



Map 10: The Congo road (in red) which leads from Solwezi, around the eastern part of the mine site and then north then north east to Kipushi on the border (black line) with Congo DR.



Map 11: Route of the Smelter Road, leading off the T5 west of town and heading NE to the mine site avoiding the town. The T5 road shown in grey in lower portion of map leads to Solwezi town which is off-screen to the right. Credit: KML, 2014.

Road Diversions and Other Land Use Changes

The Congo Road: The Congo road runs off Mine Road east of the mine, then north. It leads to Kipushi at the DRC border (Map 10) and had to be diverted twice. Initially it was moved east, around 2003, along the southern edge of the now fenced off mine site, closer to the Kabwela area. Turning north it then divided the mine site from the tailings facility which was connected by underground pipes. The road was subsequently diverted in 2013 around the eastern side of the tailings area which was expanding, re-joining the old route at the north-eastern corner of the mine site. The result was that it took over half an hour longer to reach Kipushi than in the past.

The Smelter Road: In contrast to the earlier compensation and resettlement exercises the processes associated with the Smelter Road (Map 11) during 2014 were minor and completed smoothly by the company's professional resettlement officer. This road involved the rehabilitation and the short extension of an existing road to enable entry to the mine site for the hundreds of ore-bearing Kalumbila trucks heading to the new smelter within the Kansanshi mine site. This route, which lay to the west of town, enabled the heavy-duty trucks to avoid having to go through its centre, a route which would have added significantly to the already chaotic state of traffic. It was a relatively minor, linear development of 11.4 kms and only affected one house and a small shop, four farm shelters and one incomplete house, as well as 51.3 ha of farming plots belonging to forty-five farmers in the Kalepa and Muzabula area. Replacement land was found for the farmers and compensation paid out without the confusion that had exemplified earlier processes and farmers expressed satisfaction about the arrangements. Local residents were employed as casual labourers and given agricultural and business development support, so that their livelihoods were restored. Despite these relatively benign interruptions to local life and the upgrading of the road and the obvious benefits to the town traffic situation, one academic (Kesselring, 2018) criticised the exercise for reasons which were not clear. It seems that the politicization of issues regarding a nearby proposed housing estate may have contributed to a misunderstanding of the situation.

Five years on the area was still only lightly farmed and lived on (Fig. 64), with activities set well back from the boundary. Non-mine truck traffic was light and pedestrians appreciated the smooth surface for walking to town, at least part of the way, or to the Kyafukuma area. An unintended bonus was that Solwezi residents reportedly found it a good, largely quiet, road to learn to drive on. The mine truck traffic was well spaced out and not constant. The building of the smelter is not discussed because it was situated within the mine site. Figure 65 shows what the smelter looks like from nearby communities up on the hill to the west of the mine site – with modern industrial technology framed by local bush, clearly illustrating contrasting worlds.



Fig. 64: The Smelter road, with Kalumbila trucks intermittently passing by to Kansanshi mine site, 2019.



Fig. 65a: Rural meets Industrialization. The new state-of-the-art- smelter, as seen from the road leading to Kyafukuma on the western side of the mine site, 2019.

Tailings Dams: Large amounts of land was also progressively taken up for mine tailings storage, to the south east of the mine site and to the east on the Kabitaka area for Kansanshi, (Fig. 48) and similarly for Kalumbila (Fig. 65b). These containments gradually became very large but included some processes to recycle fluids back to the mine. Their significant role in mining taking up land does not seem to have been explored by researchers, including reporting on what the future prospects are for replanting and rejuvenation.



Fig. 65b: New Kalumbila tailings spreading out with bulldozing to build containment walls, 2019.

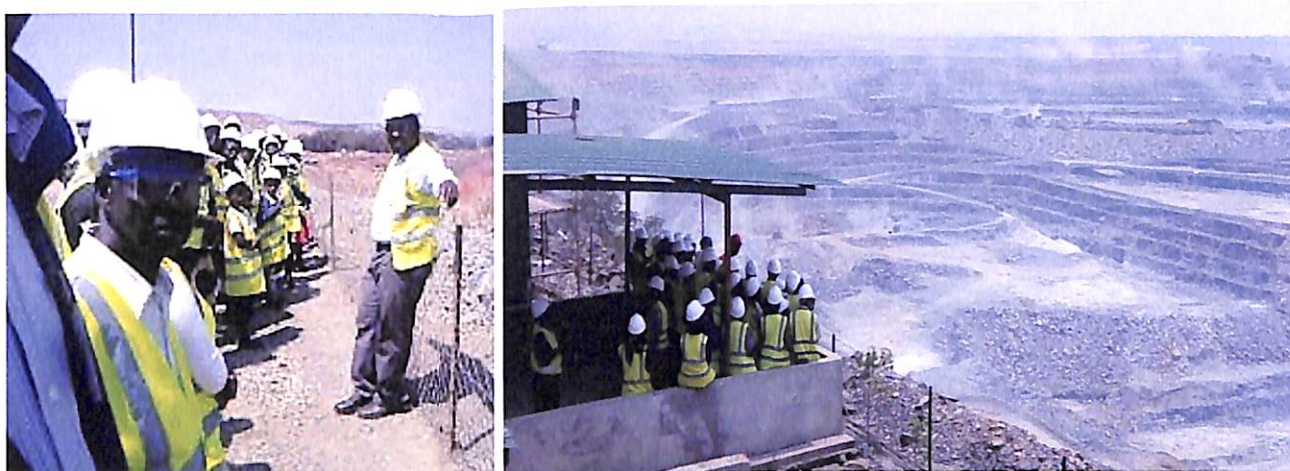


Fig. 66: (L). Mine tour participants, 2013. (R) Fig. 67: Tour groups, 2017. Credit: KML report.

Mine Visits

A very popular public relations innovation was the introduction of mine tours in April 2013 (Figs. 66 and 67). Two, three-hour tours were generally undertaken each week. Invitees were not just senior government officials and the media as often happens at mine sites, but also people from local communities, including children. The idea for this concept was mentioned in the 2011 EIS for the Tailings dam (Kansanshi, 2011b) as a potentially useful community engagement activity, especially for helping the locals understand that mine work is not ‘... extremely low-skilled, labour intensive...’ [anymore]. It was also felt that the tours would help remove negative communication barriers and so it turned out when the concept was adopted in 2013.

The tours were complemented with a drive through the animal reserve with local people, especially children, often seeing wild animals for the first time. This was followed by a brief stop-over at a water fall and lunch at the golf estate. Making the most of the captive audience, educational sessions were also held in the company classrooms, including discussion of topics such as conservation farming, gender-based violence and the importance of education. There were also question and answer sessions which enable the participants to raise their particular concerns.

Because the tours require considerable organization, as well as staffing and careful safety arrangements, they are not cheap to run but they have undoubtedly been very worthwhile. They have constituted ‘a great icebreaker’ as one company staff member said and have helped to make up for the early negative impressions that the company had created. The visits were an eye-opener for the locals – who gained an appreciation of the massive effort, expertise and expense which goes into such constructions - and tend to create considerable respect for the company. The mine site, especially the pits, is undoubtedly very impressive and visitor comments have been very positive.

Such an opportunity removes the mystery of what’s behind the mine gate and shows how their land, which they had to give up, is being used. One provincial officer also gained an appreciation of how hard mine work was, and how stressful, commenting that it was no wonder that ‘the guys breathe out’ when they get off work i.e. enthusiastically relax in bars.

However, some older visitors on one tour in 2012 did bring a note of reality to one discussion, commenting that things weren't all rosy with mining, perhaps based on their personal experiences of the early years, or of living and working on the Copperbelt.

Another aspect of the tours was the enthusiastic promotion of the different types of employment available within the mine, encouraged by participants being given mine vests and hard hats to wear (especially appealing to the young). However, this rather detracts from the reality that mines can never employ everyone, especially if they are poorly educated and unskilled, and also that jobs outside the site are also important even if they don't come with fluro gear.

The visits seem to have also made at least some feel proud that this massive development was on their land (even if it was ripping great holes in it) and creating an economic boom in Solwezi town. By shortening the length of the visits and the extent of the educational programme and/or increasing the size of the busses more people could be included, for all local people should have this experience.



Fig.68: The Kansanshi animal reserve, within the mine site, 2013.

Wildlife Reserve

On the south western corner of the mine site about 1000 ha's of Kansanshi's mine surface rights are devoted to a wildlife reserve which contains a variety of species, including water buck, giraffe, zebra, impala, lechwe, sable and eland (Fig. 68). According to the company the reserve was established in 2005 as part of the company's future shut-down plan to create an alternative tourism economy for when the mine was no longer functioning. It was also designed to serve as a recreational facility for employees and to be part of sustainability efforts and to compensate for the environmental degradation which mining inevitably creates. Given the successful breeding which occurred once the animals were established the reserve later proved useful for re-stocking West Lunga park, the rehabilitation of which FQML is also supporting. Zebra and impala have also been provided to wander freely on the golf estate. The company stated it works closely with the Zambia Wildlife Authority. The Zambia Daily Mail (2012) quoted a company spokesperson as saying that it '... has invested over \$1m in the creation of a nature reserve...' and that supplementary feeding of the animals cost US\$60,000 per annum and annual maintenance \$50,000 per annum. In 2014 the same source said that the nature reserve budget was reported to cost 0.5% of total annual social expenditure (although one could well argue that such a project was not CSR).

Poaching was initially a challenge, with locals cutting the mine site fence and entering to hunt for 'bush meat', a product which is very desirable and now hard to come by.

However, the problem was reported to have been solved through enhanced security measures (which also provided some employment) and discouraged by providing wildlife education to communities. Because the reserve is behind the mine fence it is not open to the general public so the only time towns people can visit is when they go on a mine tour.

However, when deciding on priorities for the company's CSR allocations (the budget from which this project is funded), one would have thought that the priorities would have to be people's basic needs such as water, clinics and schools. While it might be nice to have an animal reserve it would hardly rate as a local priority– with which CSR is meant to assist. It could be argued that since basic social needs are still no-where near being met in the Solwezi area that they should be the priority, not animals.

Moving locals off their own good farming land for mine developments on one side of the mine site and spending large amounts of money on animals on the other hardly seems appropriate. Worse still, the well cared-for animals roam behind a cyclone wire fence through which can be seen the squatter settlement part of Muzabula where people are eking out desperate lives, with barefoot, malnourished-looking kids playing in the dust. They can look at, but not 'shop' at the 'Bush Shoprite' occasionally visible through the fence.

Also, seen from a cultural point of view, it was obviously not appreciated how Zambians see wild animals – they are not cute creatures for admiring but an important source of nutrition in a society where poverty looms large and protein is expensive and in short supply. Forbidding hunting also goes against the local grain, for the Kaonde, in particular, were traditionally re-known as hunters.

Such a reserve obviously looks very attractive in annual reports and on mine tours but all that very positive publicity flies in the face of the local reality, as described earlier in the chapters on Solwezi and Kansanshi communities.

Some who knew about the reserve expressed doubts about why it was there, on a mine site, and even the late President Sata thought likewise. One local person said he had very mixed feelings about it, saying that he didn't know what the use of the animals was if local people couldn't come and see them easily. Similar sentiments have been expressed by others. By the same token, if the communities did agree that such a facility was an appropriate use of social funding (about which they were never consulted) it was recognized that the town's adults and children might enjoy the rare opportunity of seeing their native fauna, which their grandparents would have told them stories about.

Consequently, it hardly seems appropriate for such a reserve not to be open to the public. If retained, fenced off from the mine site, and opened up, this facility could make a very welcome addition to local recreational and educational activities and visits could provide some business opportunities. But it hardly seems appropriate for it to be funded from the CSR budget. The bottom line was that this Zambian land was licenced for mining, not a private wildlife reserve.

Reflections on the Early Kansanshi Mine Impact

It is difficult to summarize the impact of the revival and upgrading of Kansanshi mine in its first decade without taking into account the broader issues and changes which occurred during that period. Unlike Lumwana and Kalumbila it also had a rapidly expanding and chaotic town area to deal with.

While it was inevitable that such dramatic changes to the Solwezi town area and surrounding communities would cause some issues even in the best of circumstances, there were many matters which could have been dealt with much more effectively by the key players. The reasons for the many problems were not always straightforward for they were often multiple and inter-connected. Some were due to negligence, ineptitude, inexperience, arrogance and lack of capacity, while others were a result of malfeasance, such as through the many illegal land deals which were going on. But in all cases a lack of experience in dealing with such a complicated and fast-moving situation contributed to the problems. Lack of clarity about what was actually going on was also an issue, and as mentioned earlier, some took advantage of that situation.

One of the contextual issues related to Kansanshi's role was the prevailing atmosphere in the Solwezi town area in the early days. There was a general air of optimism, with much excitement and high expectations about the developments which were finally coming to the long neglected North West.

As Ms Kapatamoyo, the Caritas Provincial Coordinator for CSPR, NWP, said in 2009:

Key informants in Solwezi stated that when Kansanshi mine was opening up, most people in town were excited. They felt that "... all the problems they were facing regarding the employment of their children and the bad roads in Solwezi were going to be a thing of the past. To their dismay, this was not to be...

Indeed, those sentiments soon turned to disappointment and anger resulting from the realization that a ZCCM-like scenario was not going to eventuate. Residents failed to understand that in the new era of privatization the company was not responsible for ensuring that Solwezi town was going to be 'the New Copperbelt' – for reasons explained previously. Many became offended and confused as to why it was not to be so. These feelings were further complicated by the strong sense of injustice and resentment which arose amongst local residents about the influx of often better educated and qualified newcomers, many of whom obtained mine work, unlike themselves.

Local people felt powerless in the face of these onslaughts to their well-being. As a Solwezi participant at the *Zambian Alternative Mining Indaba (ZAMI)*¹² in Ndola in 2013 asked – 'Where do you direct this anguish'? One of the reasons for this sense of pain and powerlessness was that no community was provided with legal or administrative support to help them undertake negotiations, and neither was the Chief. He had, in fact, handled the early stages himself, without communicating with his people. Communities cannot afford such assistance on their own accord so there is a real need for an experienced advocate (or team) to be appointed to any community going through such changes. This support should include guidance and administrative support to Chiefs as discussed in Section Four under 'Culture'.

¹² The annual NGOs/Civil Society organized meeting for mining communities.

In the case of the Kansanshi communities it was the NGOs who eventually stepped in to provide support so that they could strategize about resolving the resolution of the issues, as described below. But unfortunately that support only came about seven years after the developments began.

Another related issue was mentioned at the 2013 ZAMI: that there was a prevailing dependency syndrome amongst communities (not just those in the North West), which at least partially had its roots in the Copperbelt situation where the mining companies provided 'cradle to grave' services. This retained sense of history, or view through 'rose-tinted lens', as Matt Pascall had said, resulted in many expecting that things would be, and continue to be, done for them. There were of course a few exceptions, where some took matters into their own hands and actively worked to improve their situations. These attitudes contributed to the emotionally charged atmosphere of the early years and the negative views initially held about the company which was presumed to be the main reason for the many problems which had occurred.

The situation was also difficult because the Kansanshi developments flagged the start-up of the mining boom and the town had yet to adapt to the changing circumstances. Also, the impact was accentuated because the mine was situated right on the edge of the provincial capital and it attracted an onslaught of job-seeking new-comers. Consequently, the developments immediately affected local residents, commerce and local government. Those pressures increased as Lumwana and Kalumbila mines and the other related developments started up, but not to the same extent. An additional challenge was that the Kansanshi site was surrounded by communities in all directions, most heavily to the south and east, living and/or farming there.

The national government started off on the right foot by anticipating the developments by supporting the preparation of plans. However, it failed to follow up by providing financial allocations commensurate with the greatly increased population, to implement them. If it had done so local government would have been in a better position to cope with the demands being made on it and to partner the company more effectively. It didn't help that the membership of the local Council, by its very nature, was ill-equipped to handle such complex issues. Lack of strong overall leadership and clarity about what was actually going on also contributed to the difficult situation. As a result of these weaknesses the situation in Solwezi town area became chaotic and many more new management issues were created because of a reactive rather than a proactive approach being applied. Another issue was that local government omitted to take responsibility for protecting community rights, including by failing to take leadership and being consistent regarding compensation and resettlement processes.

The company also contributed to the problems experienced in the town in a number of ways. Its initial policy of not providing accommodation for junior staff (despite the potential issues being raised by the Blandford EIA report (Kansanshi, 2002) was a contributing factor to the difficult town housing situation. It also initially omitted to invest in the social aspects of mining by failing to recruit and resource a team of professionally qualified and experienced social staff. Initially failing to appreciate that social matters are core mining business, and not a soft option, the company ended up learning the hard way that having a strong team was essential for effectively managing the inevitably complex community aspects. It now appreciates that such an investment is also a form of risk prevention, as evidenced by the subject's inclusion in its Annual Information Forms (AIFs, various years).

Not unrelated, the company omitted to familiarize itself with local society, including by undertaking a baseline socio-economic study up-front which could have usefully informed and guided social plans and inputs and helped to familiarize staff regarding local cultural matters. Having done so might have helped it to avoid the failures experienced by some of its initial CSR projects and to have explained why other efforts didn't work out as planned.

Not ensuring prioritizing of local employment right from the beginning and not overcoming the problems in the preference system was also unfortunate. The style and format of the CSR programme was indicative of a style of management which presumed, without basis, that it knew the answers to local issues. As a result, the relocations and compensation processes and early projects were wrought with issues and those immediately affected suffered un-necessarily.

Another issue was that the company's frequent changed its development plans. They required more and more land, and consequently more displacement and as such constituted a form of 'land creep', although it was also a good source of land taxes to the Council and some of the displacements were minor. The constant changes also contributed to the difficulties communities had in adapting to the new circumstances.

Failing to recognize that the Chief only held the land in trust for his people the company dealt directly with him as if he was the landowner, rather than ensuring that communities were also involved, however challenging that may have been. As the Cape Town based Legal Resources Centre (LRC) presenter at the 2014 Alternative Indaba pointed out:

African customary law is a community-based system of law in which rights are relational and not held by individuals as separate entities but by individuals through their membership of the group. That means to lose one's land ... is not simply loss of land, but loss of one's physical position within the community – and all the rights that accompany that position [Such loss] is of devastating consequence for members of communities. (LRC, 2014)

Just how strong such a belief system was in the Solwezi area at that time is not clear, for there had already been disturbances to local relationships and land for some decades, but not to the extent it was happening in the 2000s.

But this approach contributed to the lack of transparency and poor communication about what was going on and added to the confusion and anxieties about what was or wasn't happening. Consequently, the support the communities eventually received from NGOs was significant because it helped to empower them for the first time to influence the situation. It was unfortunate that this assistance was not available in the initial years. But the very nature of local communities, including their low education levels, their scattered locations and the leadership issues were also factors in the difficult early period.

There were also other issues for the communities. Unrealistically high expectations about the availability of jobs and the amount of compensation to be received excited potential recipients and resulted in considerable disappointment and anger when the reality hit home. This response was partly because of the amounts provided and partly because the processes were so confused and dragged out. The changes which resulted from the series of relocations meant that most were disadvantaged by having to move further away from town and its services, and inevitably by the rising cost of living. The latter was only partly compensated for by the increase in customers for various types of produce and provision of some basic services such as water supplies and new clinics and schools.

That these problems did not create significant public unrest, as might have happened in other countries, was at least partly due to the low-key response of the manager). The nature of the people and the communities' lack of cohesiveness were also factors. The guidance they received from NGOs that their protests should be peaceful also played a role in ensuring that matters didn't get out of control - although the messy processes and lengthy delays in responses had certainly justified a strong response.

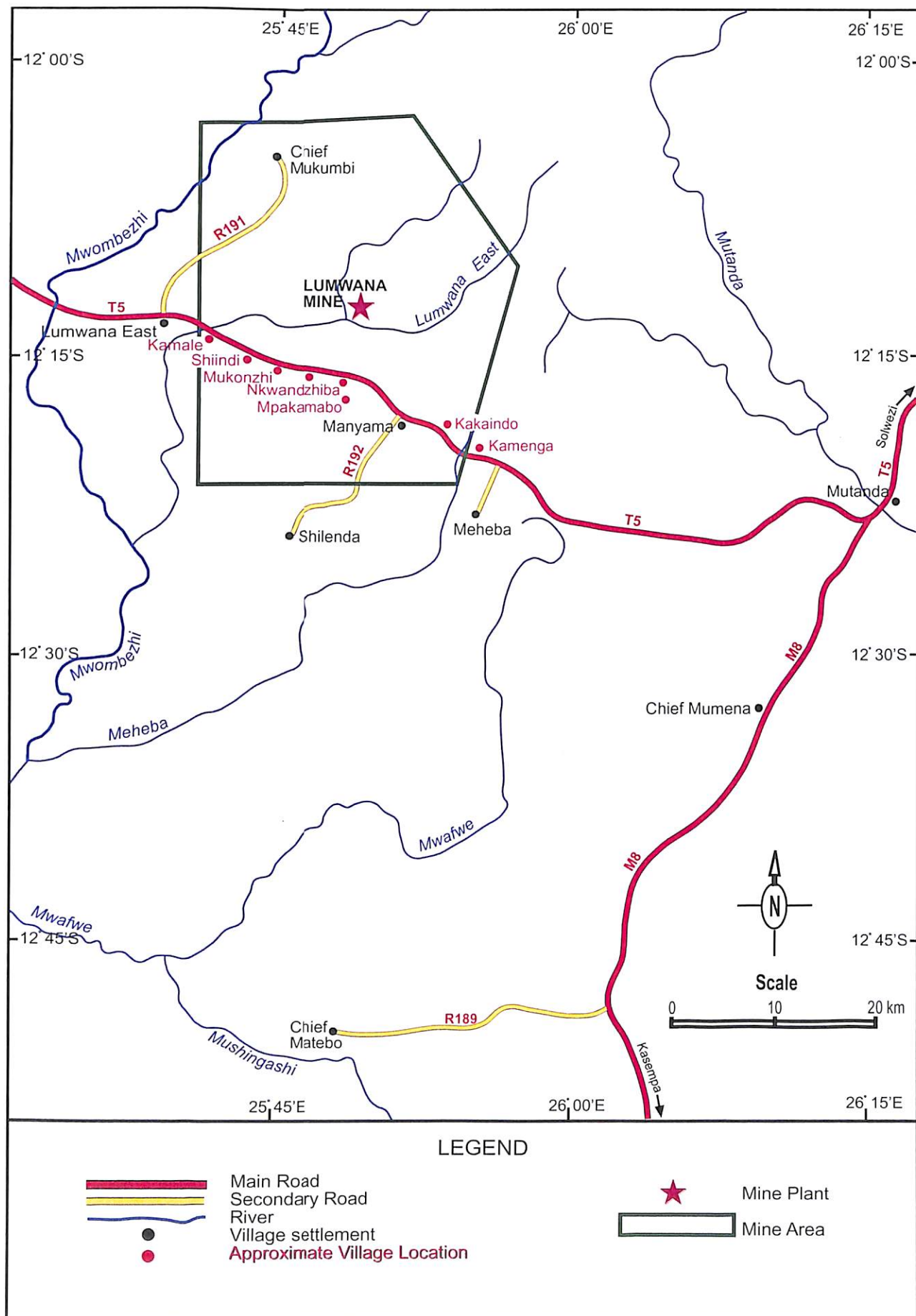
Another major factor in the negativity which prevailed for so long was the resentment of the influx of those from outside the province who were much more likely to be eligible for mine employment. This harsh reality also changed the ethnic make-up of Solwezi town in a way which reinforced the old feelings of cultural inferiority.

Because of these and the other issues already mentioned the company's reputation was poor in the early years. This was despite the very significant amount of CSR contributions made which did indeed benefit the local area in many different ways. But eventually the situation began to improve. The company at least partly improved its capacity to address social matters, introduced many innovations and became a very active member of the Solwezi town community.

Additionally, communities began to appreciate that it was often government which was to blame for many of the issues which had arisen, rather than the company which they had initially targeted with their complaints. But the inadequate level of support and at times, political interference from the national level as well as the extent of local corruption continued to undermine improving the situation in the town.

The latter also undermined well intentioned efforts by the company to contribute, and caused them much loss of time and money, with reasons apparently connected to fear of competition from better resourced South African business interests.

There was much learning on all sides during the first decade as the town, as local government, the company and the local communities slowly and painfully adapted to the influx of outsiders and all of the other stresses of becoming part of a mining town.



Map 12: Map of Lumwana mine location and surrounding communities (not to scale and village locations approximate) and Chiefdoms – Mukumbi, Mumena and Matebo. Credit: Joseph Chalila, Geographer.

LUMWANA MINE

Company: Equinox /Lumwana Copper Project/Lumwana Mining Company (2005-2011), then Barrick Gold (2011+)

Lumwana mine was a 'greenfield'¹³ open pit copper mine with sporadic uranium mineralization situated in a forested, lightly populated rural area of the province. Copper was the main focus but other minerals in smaller quantities are also mined. The mine site is situated approximately 80kms south west of Solwezi town and lies along the northern edge of the T5 (see Map 12). The project was initiated by Equinox Minerals Limited through its Zambian subsidiary Equinox Copper Ventures Limited (Equinox), later renamed Lumwana Mining Company (LMC). Equinox was an Australian company registered in both Perth, Australia and Toronto, Canada and it arrived on the ground in 1999 to undertake exploration and pre-feasibility activities. Mine development commenced in November 2005 after approval of the EIS and production began in in early 2009.

History

There was no previous mining on the site and no evidence of ancient mining having taken place there. Exploration and prospecting in the area goes back to the 1920s with copper deposits eventually being identified in 1961 by Roan Selection Trust in what is known as the Mwombezhi Dome area (see Map 12). Subsequently over ten different companies attempted to develop the prospect but failed each time, reportedly due to lack of funding, changing government policies, low copper prices and lack of infra-structure. Other companies involved at various times included AMAX, Anglo American, Mindeco (a government parastatal) and Phelps Dodge. Between 1981-1990 AGIP and COGEMA also conducted uranium exploration in the area. Local communities therefore became used to seeing exploration crews in the area off and on over the decades, and also seeing nothing resulting until the dramatic rise in the price of copper in the 2000s which enabled the various constraints to be overcome.

In 1992 Phelps Dodge was granted a prospecting licence and in 1996 a retention licence with the right to apply for a large-scale mining licence. In 1999 Equinox went into partnership with Phelps Dodge and moved onto an exploration camp. This base had been established by AGIP in the 1980s, just off the T5 along the road going north to Senior Chief Mukumbi's palace. Airborne and land exploratory activities were undertaken to define the deposits followed by the Pre-Feasibility study in 2000 and a Bank Feasibility Study from October 2001-2003. Equinox bought out Phelps Dodge in 2004, the same year the mining licence was granted to Lumwana Mining Company.

The Development Agreement was signed with government in December 2005. The surface rights agreement with the three Chiefs (Mukumbi, Matebo and Mumena) on whose land the mine lay.

¹³ A 'greenfield' is an area which has never been mined before.



Fig. 69: Clearing of the site, early 2006. Source: Craig Williams' power point, 'The Story of Lumwana', 2012.



Fig. 70: Lumwana mine, on track for completion mid-2008. Source: Craig Williams' power point, 'The Story of Lumwana', 2012.



Fig. 71: Lumwana Mine site developed, including the dam to the east. Source: Barrick Gold, published in Mining Weekly, 18th December 2014.

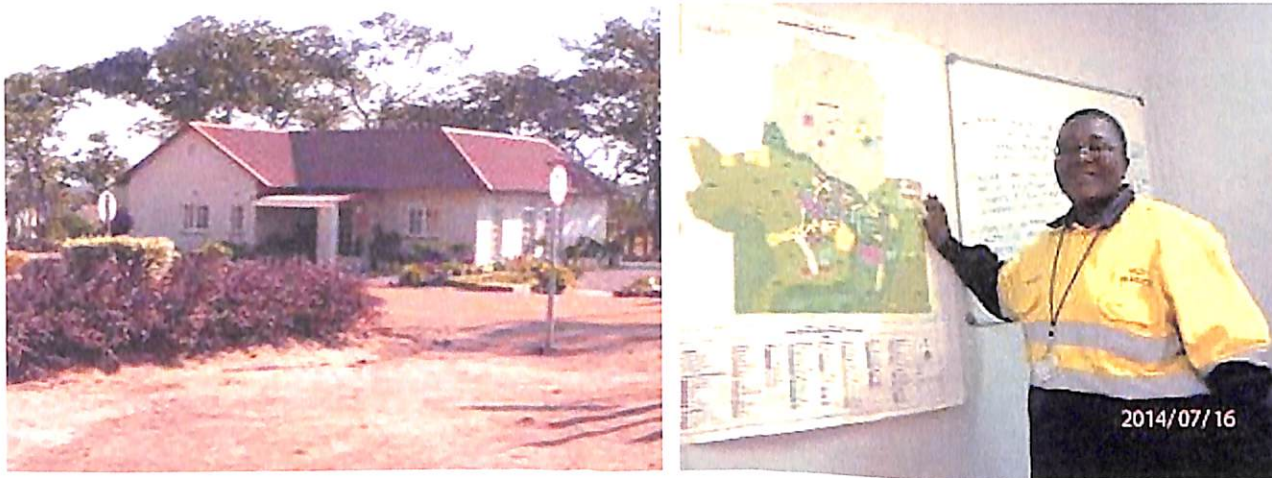


Fig.72. (L). Senior staff housing. Credit: CRS/Leeds, 2014. Fig. 73. (R) The then Social manager Brenda Tambatamba showing the grand plan for Lumwana Town, 2014.

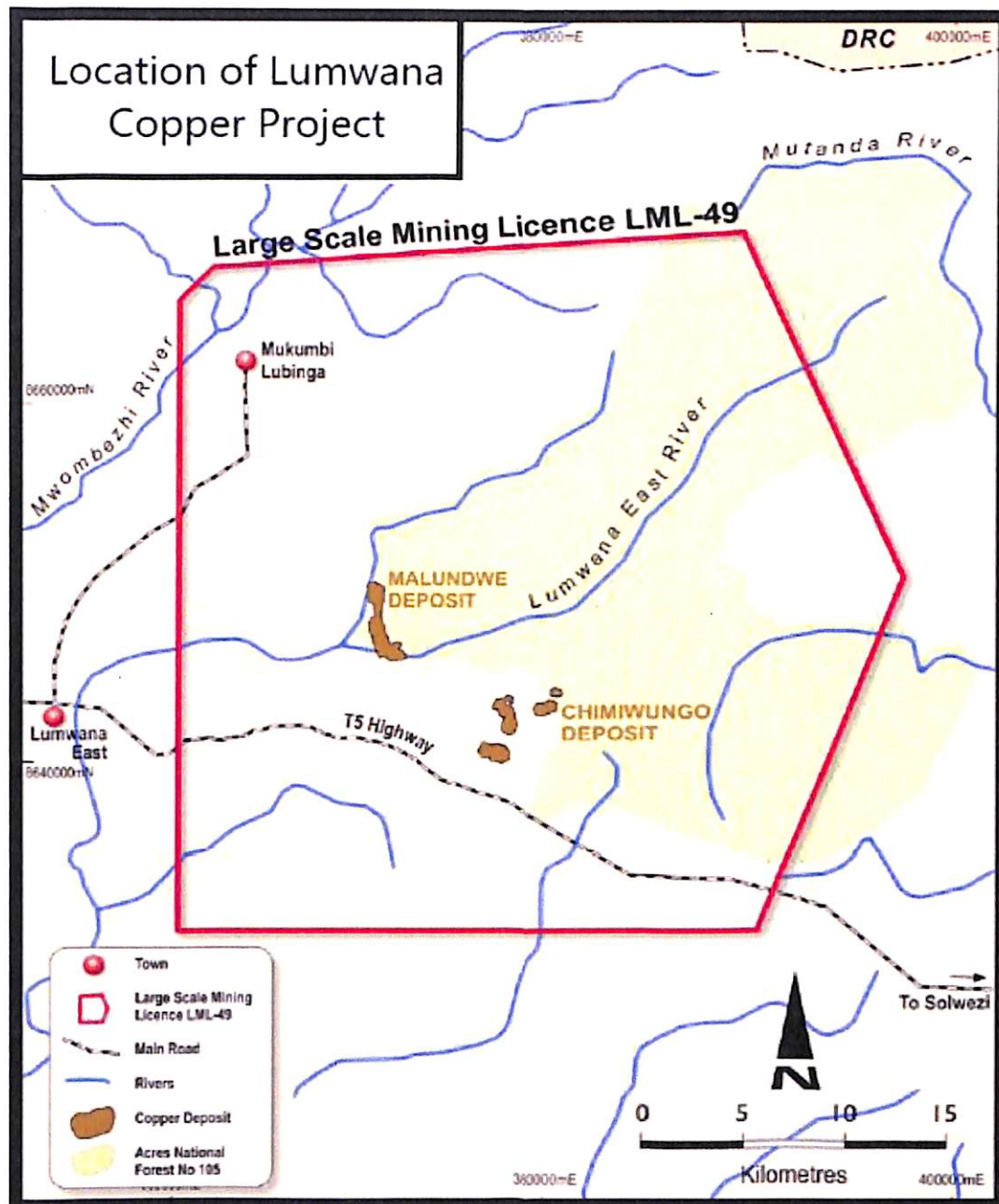
Description of Developments

Lumwana mine site lies on what was Mukumbi Chiefdom land, with the Chief's palace situated within the mining licence area but a few kilometres beyond the actual mined site. As can be seen from Map 12 the total licenced area also falls partly into the Mumena and Matebo Chiefdoms with some exploration having occurred in their areas but no mining.¹⁴ Map 13 shows the licenced area in more detail, including the two pits and how the exploration area crosses the T5 to the south. Figures 69-71 illustrate the developments and Fig. 72 senior staff housing.

Much of the land was previously part of the protected Acres National Forest Reserve. About 78% of the Reserve was degazetted in 2005 for the purposes of mining, with about 20,000 ha assigned to mineral rights and 35,000 ha as surface rights for protecting natural resources and for various development activities. Prior to mining, the area was described in the Lumwana Integrated Development Plan (LIDP) (GRZ, 2008b) as having been (illegally) used for small scale tree chopping for fire-wood and charcoal burning. There had also been some basic house building, destruction of termite mounds for brick making, farming, small scale quarrying and foraging for seasonal products such as mushrooms and honey, caterpillars and wild fruits. There was considerable timber logging in the surrounding areas from the 1960s-90s so most of the forest was secondary growth. The LIDP reported '... a conspicuous absence of wildlife with the exception of birds...' thought to be due to poaching and over-hunting during the past three decades.

An upgrade of the T5 from Solwezi town was undertaken as it had been in poor condition and also a contribution was made in conjunction with FQML to the rehabilitation of the Chingola-Solwezi leg of the highway. Administrative and mine servicing facilities, social amenities including schools, a clinic, a supermarket and three banks were also built within the mine site, adjacent to the pre-fab housing which had been erected for construction workers. Much of the bush was left in place, maintaining a very rural looking setting away from the pits and around the plant, housing and offices.

¹⁴ The mine area is not to be confused with the small rural centre named Lumwana East which is further to the west of the mine site along the T5.



Map 13: Mining licenced area detail, extending across the T5, the two main deposits, Chief Mukumbi's capital and proximity to DRC. Source: LMC, EIS, July 2005, p. 2.

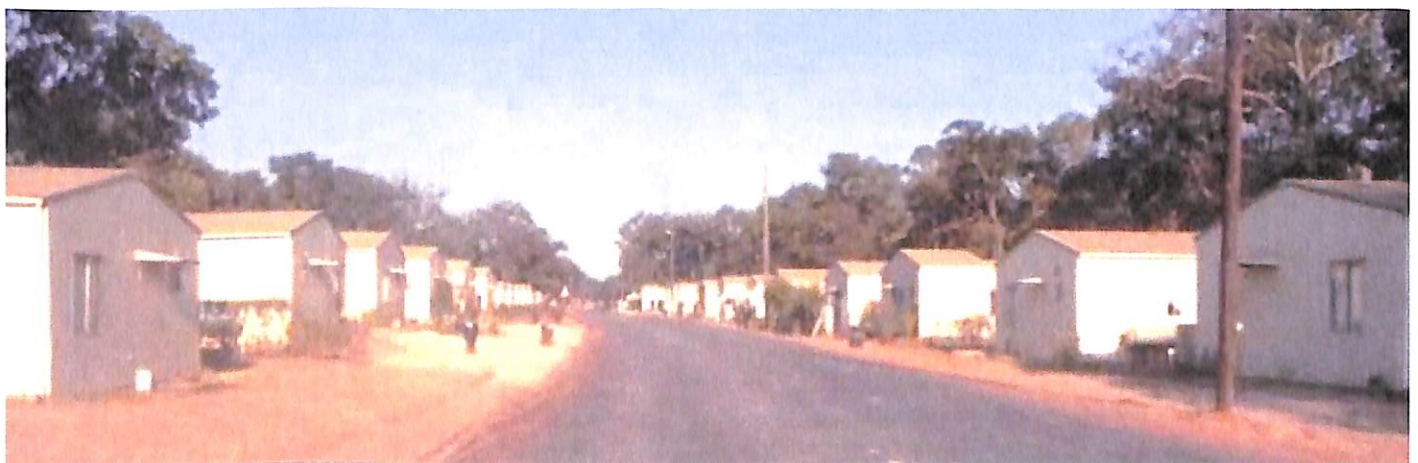


Fig. 74: Lumwana mine township, junior section housing, 2014.

Production commenced in 2009, with two areas eventually being mined: Malundwe pit with a copper grade of 0.9% and a mine life of five years, and Chimiwungo deposit, which had a lower grade of 0.6%, and an estimated up to thirty years mine life. Uranium bearing materials were encountered in several discrete zones at both deposits. The copper concentrate produced on site was trucked out via the T5 including through the centre of Solwezi town, primarily to two smelters on the Copperbelt.

A housing estate for 5,000 people was also established from 2007 within the mine site area, about 8 kms north of the main gate on the T5. An article in Urban Green File (June 2009) enthusiastically proclaimed the intentions of the new town being built in the bush and complemented its design. Large solid houses were built for senior staff (Fig. 73). The pre-fab staff housing which was originally built to accommodate the mine construction crew were kept on for junior staff (Fig. 74). In a well praised initiative the latter houses were made available for sale to staff, with the aim of promoting local home ownership. Because the mine owned the surface rights it was able to provide title with 99 year leases, and hundreds took up the offer with loans especially organized by the company from a bank. However, problems occurred, including owners renting them out and living elsewhere, and many social issues arose. This situation became untenable for a mine site and the company was forced to cancel the arrangements. In 2012 it bought back most of the properties and resumed a rental system – and control. The dream of promoting home ownership and a well-planned urbanized environment as part of the mining deal had unfortunately turned sour, despite the best efforts of the company.

As at 2010 there were nearly 1,000 houses on the property and it was notable how heavily treed the area still was, despite the extent of housing and other facilities. But having a housing estate with restricted access was an arrangement that people outside the mine boundary found difficult to appreciate because of not freely being able to visit friends and relatives or access the supermarket and banks. One person commented in an offended manner that 'It was as if it was a foreign country, for which one needed a visa to visit.' However, an exception was eventually made, with local farmers being allowed entry to sell their produce inside on a regular basis (Fig. 75). Despite the closed access some felt that the controlled housing situation was desirable, because it resembled the old ZCCM style, unlike the situation at Kansanshi/Solwezi.



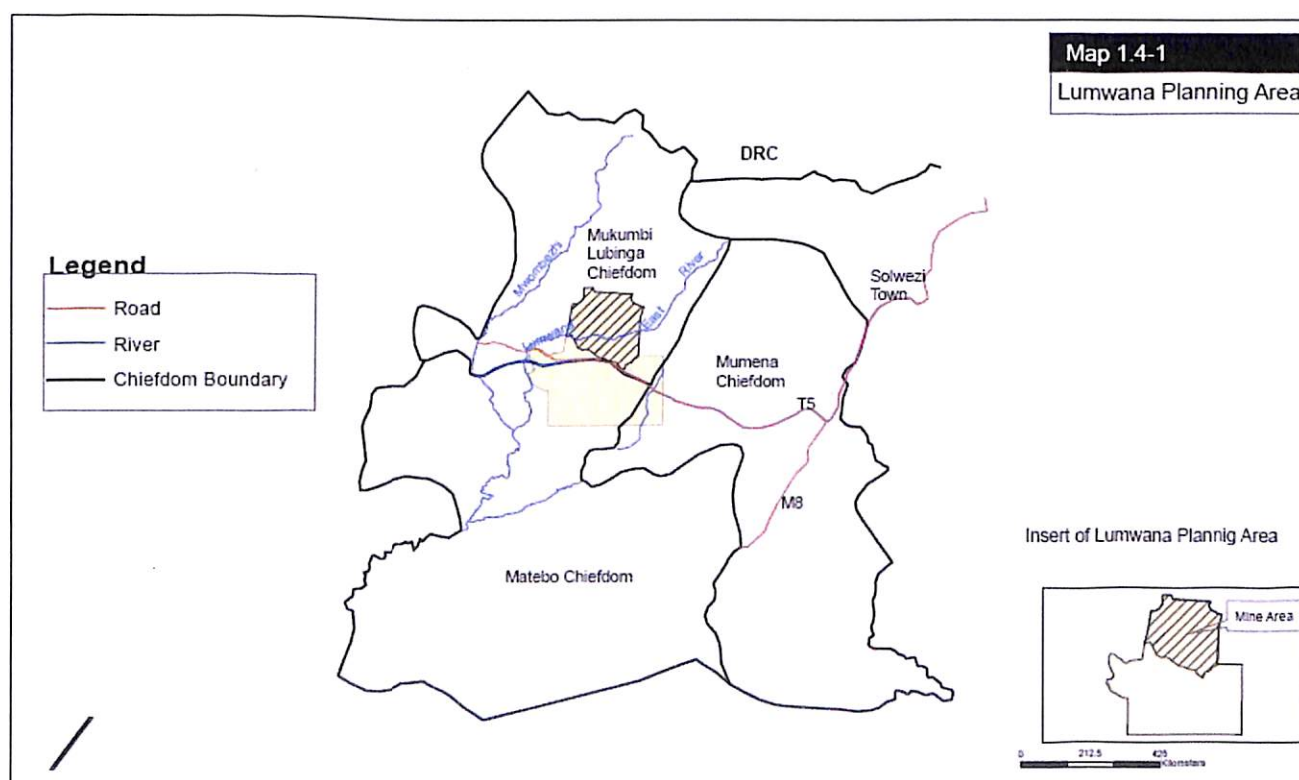
Fig. 75: Local farmers selling their produce at a weekly marketplace in the mine site. Source: Leeds et al, 2013.

In addition, 1,103km² of land was set aside by GRZ on the south side of the T5 for a fully-fledged town and plans were made for a Multi-Facility Economic Zone (MFEZ) on land handed over to government by the three Chiefs (see Fig. 76-78). However, none of these grand plans had been fulfilled by 2015, for a variety of reasons, especially lack of support from government. Instead, Manyama, lying largely on the southern side of the T5 became, by default, the mine associated area, but with almost no planning, as discussed below.

Establishing of Social Management Capacity

Lumwana took social matters very seriously right from the beginning with studies initiated even before it had obtained the mining licence. Some preliminary and brief social studies and surveys were undertaken in 2001. The resulting information was included in the July 2005 Environmental Impact Statement.

In 2005 the company signed a Memorandum of Understanding with the three Chiefs, specifying a Development Trust Fund for CSR contributions to local communities in all three Chiefdoms. A Sustainable Development team was established, initially led by a mining experienced expatriate with an environmental science/occupational health and safety background. Zambian staff with local knowledge and social project experience (although without mine impact experience) were also recruited to help develop and implement social programmes. The population surveys and a range of social studies were undertaken almost entirely by Zambian consultants to inform social plans and an impressively detailed base line data and monitoring system was established, as described below.



Map 14: Lumwana Chiefdoms - Mukumbi, Matebo and Mumena, mine site and planning area (yellow). Source: Lumwana IDP, Status Quo Draft Report, p. 9, 2008.



Fig. 76: (L) Chief Mumena, 2014. (C) Fig. 77: Senior Chief Mukumbi' during his ceremony, 2017. Credit: Lusaka Times. Fig. 78: (R) Chief Matebo, September 2015, Credit: Lusaka Times.

Impact on Associated Areas

Local Communities

Senior Chief Mukumbi's palace is situated 15 kms north of the T5, northwest of the mine site and within the mine licenced area (his photo at Fig. 77). Eighteen Group Leaders report to him, and, in turn, some Headmen to them (LCP EIA, 2005). The other affected Chiefs, Mumena and Matebo (Figs 76 and 78), are situated much further away to the south-east of the T5 and reached via the Mutanda turn-off and south on the road to Kasempa. All Chiefdoms cover large areas and before the mine era had very dispersed and low-density populations.

One academic study, the mine preparatory studies and some follow-up reports provide an overview of local communities in both pre - and immediate post mine commencement periods. The social aspects of the 2005 EIA (Lumwana, 2005) were minimal but later reports were much more comprehensive. A very detailed Social Sustainability Management Plan (SSMP) was prepared in July 2007 and it was reviewed and revised again in 2010/11 (Lumwana, 2011), indicating a responsiveness and willingness to learn and adapt.

Nienhuys (1968) may have provided the only description of this area in the late 1960s and the situation described then appears to be similar to that existing when mine preparation commenced, as can be seen from the photos (Figures 79-81).

He described the original local population as being largely but not solely Kaonde, with mainly subsistence farmers living in small, scattered villages with approximately a dozen homes, near but not on what became the actual mining site.

The people practiced shifting cultivation and he reported that:

Every year new plots were opened up and old plots abandoned as their fertility was exhausted after two or three seasons ... If the distance between village and plots becomes too large the village is moved.

The paper also reports that there was a general movement from deep in the bush towards the main access road, as Jaeger (1981) had described happening in Kasempa area.



Regular community meetings were held in the Chief Mukumbi village. Notice the spread of the huts

Fig. 79: A scene from the 1960s which was not all that different to that prevailing in more recent decades.
Source: Nienhuys, S., 1968.



Fig. 80: (L) Mafuta Village, pre-mine era. Credit: Equinox, Lumwana, EIA, 2005. Fig.81: (R). Some housing along the edge of T5, still unchanged in 2012. Some others were more modernized.

Housing was described as being very basic, mainly built of poles/branches plastered with mud, with grass-roofs. Pit latrines or, more commonly, the bush, were used, while water was obtained from streams, or the occasional bore hole. A few had houses built of Kimberly bricks (made from termite mound soils and dried), with iron roofs and even windows with glass and there was some use of cement blocks. The latter items, which would have been expensive, were probably the result of cash brought or sent home from the Copperbelt (and suggested the beginnings of a more settled lifestyle). Houses were laid out in a socially proscribed manner, close to the communal *nsaka*'s (open sided huts) which had specific purposes i.e. talking/meeting and cooking, as well as a granary for storing the grain. During harvest time people moved to the fields and slept in temporary huts.

Nienhuys' description clearly indicates quite fluid communities, with much comings and goings of adults, including some to the Copperbelt for mine work, and sometimes children who went to live with grandparents or other relatives. Child mortality was high, with a death rate of 50% by age two c1968) and life expectancy was low, contributing to the state of flux. Because the society was matrilineal a new husband moved to his wife's village.

Occasionally a non-related person was accepted into the village because he was Kaonde. Nienhuys' description is very similar to the situation in Kasempa District in the 1980s, as described by Crehan (1997) and also by Jaeger (1981).

Beer drinking was a popular social activity, with women responsible for brewing from millet or sorghum. These grains are rich in vitamin B complex, and valuable as a nutritious weaning porridge for infants.

The main activity was farming but people were also involved in fishing, livestock keeping, charcoal burning, honey seeking, small-scale hunting, beer brewing, while some were involved in petty trading, wood carving/carpentry and blacksmithing. The latter activity was focused largely on the making or mending of garden tools such as hoes and axes, the metal for which originally came from copper and iron working specialists in other areas. In more recent times, the metals reportedly came from the spring blades of lorries and other vehicle parts. There was also some sand mining and stone crushing for construction, both private and commercial, both of which created un-renovated pits. Some hired themselves out for piece work. All lived and farmed on customary-held land, farming approximately three hectares at a time – and often taking children out of school at key times to help (if indeed they were in school). The main crops farmed were maize, beans, cassava, groundnuts, sweet and Irish potatoes and pineapples, and to a lesser extent, the traditional crops sorghum and millet. Some of these items were sold at small local markets, if not consumed at home.

Nienhuys also noted that the annual burning off during the dry season served a double purpose - of purifying the soil thereby preventing crop diseases in the first planting season and secondly, of providing the ash which contains potassium and acts as a fertilizer. Such a practice also helps clear the land ready for cultivation and scares off snakes, some of which are poisonous. He also pointed out that animal dung was not available due to the absence of animals because of the presence of tsetse fly, especially in the more southern areas of the District. However, the Fly problem had been greatly reduced by government control programmes.

Another much later study undertaken just after mine development commenced reported very similar findings (Lumwana, 2007a): It noted that in addition to the T5 there were a few feeder roads but none were sealed and they were often impassable for vehicles in the rainy season. Typically for rural areas in Zambia the people had to travel long distances, usually on foot or bicycle to clinics which experienced inadequate staffing levels and supplies, as well as unreliable medical transport. This was despite concerted efforts by donor agencies in earlier years, including those managed by this author in her previous role as UNFPA representative. There were reported to be seven health clinics in the area, six operated by government and one by the Catholics but no maternity ward - the nearest being in Meheba refugee settlement or at Lumwana East. Some women were reported to travel north over the border to Congo (about 20kms away) to deliver, even though they would have had to pay for the service. The main health problems were malaria and diarrhoeal and respiratory diseases. Education levels were low, and even lower for females, with 84% having no schooling, only 9.7% reaching grade 8-9 and only 17% of males and 12% of females being able to read and write. There were problems with accessing basic schools and a high drop-out rate of girls at grades 5-6 due to early marriages. Other issues included long distances to be travelled, especially to high school, and lack of money for school fees, and uniforms. Classes were crowded and many pupils had to sit on the floor. There was also a shortage of teachers and housing for them. The 2005 EIA reported fourteen different churches in the area, a large number which was not uncommon in the District in the pre-mining era, and the numbers later increased. In 2009 a study which was undertaken for Lumwana by Food and Trees for Zambia provided additional information on the area i.e. four years post-mine commencement (Lumwana, 2009).

The report makes a few additional points, describing how farming tasks are driven by the season and by gender and age i.e. men, women, boys and girls. Livestock, mainly chickens and goats, were reported to be kept, some of which were sold over the border in the Congo. Products for consumption were also obtained from the forest, such as honey, mushrooms and caterpillars, resources which played an important role in household food security and nutrition supplementation. Little was reported to be used for income generation despite their potential economic value. Large wild animals were said to have been hunted out decades earlier, although smaller ones such as mice were still found, and caught. Some women had been supported to do tailoring/sewing (perhaps having been taught by missionaries).

The study also reported that the main reason for food shortages in the rainy season (which is a serious, annual problem for many families in January/February) was that there was a tendency to sell all their produce in the dry season, although they fetched higher prices in the wet when supplies were less. It also noted that there has been small scale logging of valuable hardwood timber in the area for many years so the growth was largely secondary. Logging was reported to have continued, in addition to the different types collected for charcoal burning and also for firing brick kilns and house construction. Late season bush fires were reported to be a problem (they are much more damaging than early, dry season ones) and current methods of using forest products were said to risk or to be causing environmental damage.

Expansion of small business opportunities, including upscaling farming, was said to be limited by lack of training, access to credit, use of unsophisticated tools, lack of transport (apart from bicycles) and distances to markets.

Basic items not produced needed to be bought, including paraffin, washing soap, salt, cooking oil, matches, modern medicines and clothing, while 'extras' included household items such as iron roofing, beds and chairs, radios (and batteries for them), phones, solar panels, tools and bicycles (which a few people owned). Cash was also needed for school fees and uniforms, medicines, agricultural inputs and hire of transport and labour. Such cash when it was available usually came from family members working elsewhere, or from a few sales of produce or items such as charcoal or timber.

In summary, the situation of the local people was very basic, with survival largely dependent on a subsistence lifestyle and the micro-communities being neither physically nor socially static. Their deep knowledge of the physical environment helped them to manage *chitemene*¹⁵ style farming, although it was a fragile existence, and one which was easily threatened by droughts, floods, insect pests and any constraints to moving freely.

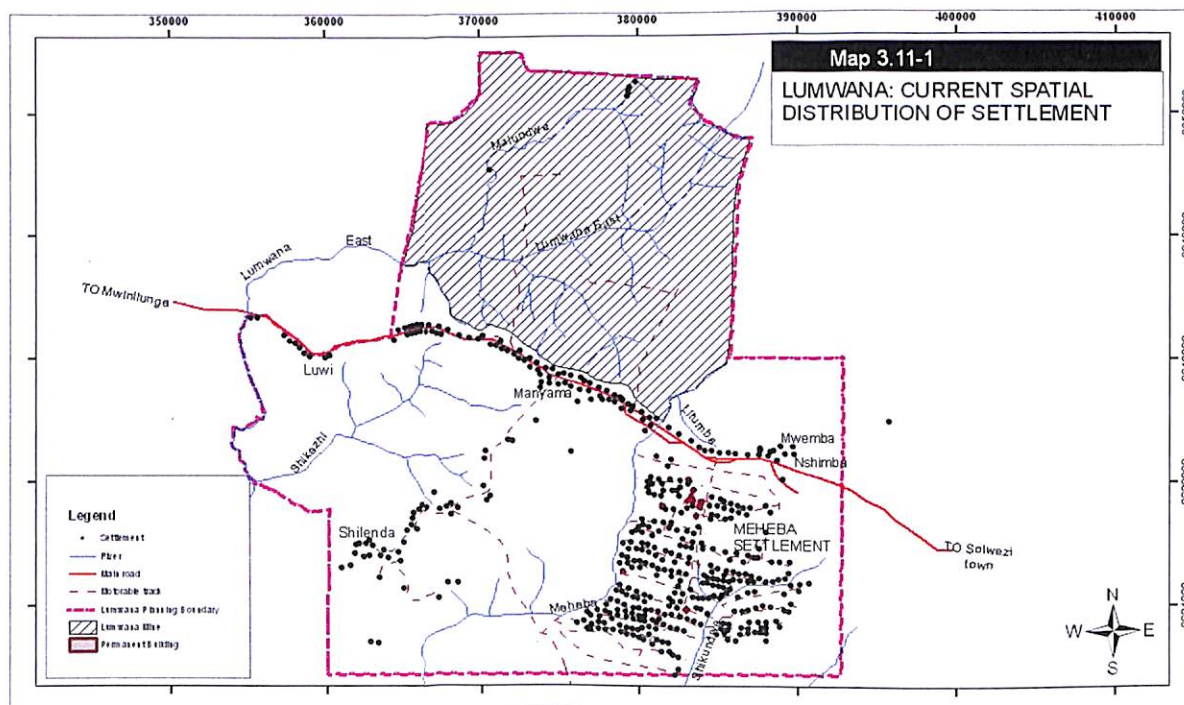
Traditions still held strongly despite some influences from the modern world for over fifty years, including from Solwezi town and beyond, as well as from missionaries and the occasional aid project.

¹⁵ Chitemene farming as practiced in the North West involves chopping down large trees which are left to dry and then burnt before the rains. Crops are planted in the ash covered ground which temporarily helps to restore enough fertility to grow sorghum and millet. Fields are generally about 2 ha in area. Soil fertility (PH) declines again after a couple of years, the field is then left fallow for many years and the farmer moves to another area to repeat the process. It is not a suitable method for growing maize which requires high fertility.

Also, because of the long history of prospecting and exploration in the area the communities were familiar, to varying extents, with the itinerant presence of mining teams and they benefitted from the tracks that were established. Some were also aware of, or worked at, the small Italian operated Kafilondo mine, a facing stone quarry in Chief Mukumbi's area. They were also exposed to the occasional traveller from over the nearby Congo border and to some of those living at Meheba Refugee Settlement which has been in existence since 1971. Consequently, they were not completely immune to the outside world.

Population

Population data comes from various surveys undertaken in the immediate project area. Company staff surveyed in 2001, 2002 and 2004 (Lumwana, 2005). The data showed that there had been a steady increase in the number of residents during this time with the numbers slightly more than doubling in three years, from 1,801 people in 529 dwellings in 2001 to 4,779 people in 1,209 dwellings in 2004. This increase seems to indicate that people were pre-empting mine start up and positioning themselves to be ready for obtaining work. The relatively low numbers per household recorded (3.4 increasing to 3.95 persons in 2004) also indicated more nuclear families than is usual in a rural area which wouldn't be so surprising if they were newcomers. Traffic surveys were also undertaken in 2001 and 2002 and reported minimal movements except for people on foot or bicycle.



Map 15: Spatial distribution of population near Lumwana c2008. The heavily populated area to the lower right is Meheba refugee settlement. Ten years later the distribution would have reversed, with Manyama (south of mine site) population greatly enlarged and spreading south, and Meheba's population decreased. Lumwana IDP, p.137, June 2008.

In December 2007/January 2008 a mini-census was undertaken within Lumwana's planning boundary with the Ministry of Local Government and the Central Statistical Office (CSO) staff (GRZ/CSO, 2008b). It registered a population of 3,300, but the area was slightly different from that of the earlier surveys. The survey noted that only minor signs of modernization were evident. Most were settled along the edge of the T5 and the road to Senior Chief Mukumbi's palace or along the south leading road to Shilenda (Map 15).

Population density was 14 per km² (which is high for the North West) and much higher than it had been in pre-mining days. Fifty percent had moved from within the District, twenty-three percent from within the province, and fourteen percent from other parts of Zambia, while twelve percent were from the local area. It is not known if this ratio of locals and outsiders changed over the following eight years but it is highly possible, especially given the economic situation on the Copperbelt and the growing publicity about the 'golden' North West.

A later study (Lumwana/Imakando, 2013c) even noted that '... one whole community consisting of about eighty households was reported to have moved into the area in the past three years.' i.e. about 480 people, during 2007-2010. It wasn't stated if they were North Westerners but that was likely given the numbers. Twelve per cent reported having changed residency in the past three years, mostly because of the head of household's transfer or work/business, but it is not clear if this movement was mining related. The data added to the information described above: fifty percent were under fifteen years of age and about the same percentage were literate. About three quarters lived in traditional self-built, grass roofed, mud brick houses, while the majority used pit latrines (or the bush) and obtained water from boreholes or wells, with 16% doing so from a river or stream. Three quarters used wood for cooking, the rest using charcoal, while half used candles for lighting and a quarter used paraffin. Being located about 80kms from Solwezi and 220 kms from Mwinilunga, the nearest towns with hospitals and government offices, access to government services was minimal. The nearby Meheba refugee settlement and the facing stone quarry at Kafilondo were the only significant economic activities in the area. Tika, an iron ore mine and steel plant to the west, had been closed for some years.

Apart from a brief mention in the 2005 EIA that there was no mobile phone reception in the area at that time, and unlike studies of the other mine areas, there does not seem to be any data on mobile phone ownership after the advent of the mine. But given the rash of towers being built across the province over the past decade, and indeed the country, the situation did change, although there were reception problems in some spots around 2013. Certainly, the existence of phone reception when it did arrive, made a big difference to local communications, for all parties. This included between mining communities e.g. for comparing compensation rates and processes. In a way it was a form of community empowerment (but also a way of spreading unfounded rumours).

Immediate Impact

The advent of a large mine in the vicinity of such rural communities was inevitably going to cause significant disturbances even if no households had to be relocated. But 704 households did lose their farm plots and the community more generally lost access to some rivers and to some forest, although others were nearby. Consequently, compensation needed to be paid and substitute land for farming found, a process which was somewhat drawn out, being paid out in 2005/6, 2008/9 and in 2013 according to Imakando's study.

But as per government policy, nothing was paid out for the loss of fallow fields and increased distance to forest land or access or distances to rivers. Finding new farm plots shouldn't have been too difficult in a society which traditionally did so and there was plenty of land and low population density (at least initially). However, the farm plot substitution processes were at least partially complicated by the opportunities for compensation.

A contributing factor was that it was rumoured that the rates were lower than provided at Kansanshi, which true or not, caused much resentment.

The rumour mongering was fanned by hopes of more cash but also demonstrated information sharing between mining communities, aided by the increasing availability of mobile phone reception during this period - and perhaps by the involvement of NGOs.

The suitability of new areas for farming was also complicated by their wish to be in a convenient location with access to the T5 and markets, especially at Manyama (see below) where all the 'action' was focussed. The tradition of farmers accepting the need to walk considerable distances to their plots seemed to be changing.



Fig. 82: The main shopping area which evolved, dangerously hugging the T5, Manyama, 2012.

The proximity to the T5 was always felt to be advantageous but the closer one was to any urbanization, the less likelihood there was of easy access to farmland – a classic conundrum. There were reported to be many issues about finding new farmlands and it appears that neither the Chief nor government had a firm grasp of the matter nor were very effective in resolving the issues, at least according to some of those affected. Perhaps the establishment of more fully functioning services in a few key areas and sealed roads away from the T5 would have attracted communities to re-cluster well away from the highway (Fig. 82). While most of the increase in housing lay to the south of the T5 Barrick (Lumwana, 2012) reported concern about the extent of spread along the north-side (i.e. along the southern edge of the mine site) by the end of 2012 because of '... security concerns and potentially complicating existing expansion plans.' On the south side encroachment onto the school grounds and the nearby expansion of the market were also reported to be of concern. None of these issues would have arisen if government had taken responsibility for controlling land use.

Imakando also reported that his sample of local people did not consider migrating out of the immediate area to get away from the 'invasion' of outsiders because their presence was seen an option for improving their livelihoods. Presumably they wanted to be where the action was. But it was reported by another source at Manyama that some original inhabitants sold their little houses to newcomers and moved away to other parts of the Chiefdom (Interview 2013). This sudden population boom created a greatly increased demand for housing, school spaces and health services, as well as for water and forest resources, especially wood for charcoal. These demands resulted in much competition with the original inhabitants - as described further in the following section about Manyama.

But this impact on schools wasn't just felt in the most populated areas. The Development Trust Fund Report (Lumwana, 2013b) reported that it was also felt in more distant schools such as at Jiundu, Shinda, Kananga and Luamvundu. Even the mine township school experienced over-crowding (e.g. 77 pupils per pre-school class) according to Kanga Associates in 2007 (Lumwana/Kanga, 2007) and some students travelled by mine bus to the Manyama basic school, presumably because its fees were lower.

RuralNet (Lumwana/Ruralnet, 2011) reported the worsening situation at Manyama in June 2011, despite the increase in the number of teachers:

602 pupils and 4 teachers in 2007 (1/151)
1,134 pupils and 9 teachers in 2008 (1/126)
1,679 pupils and 13 teachers in 2009 (1/129)
1,776 pupils and 24 teachers in 2010 (1/74)

But despite the extra inputs from the Ministry of Education the situation deteriorated even further. Caritas Solwezi reported (Lusaka Times, 2014) even higher number of pupils - about 3,000 in eight classrooms, and that some lessons were being conducted outside under a tree. Presumably two sessions a day were being held by that time but this still made for extraordinarily high figures. Other schools in the area also suffered from over-crowding and much of the Lumwana Trust Fund resources was directed to addressing the needs.

Part of the increasing demand for schooling was prompted by locals, as at Kansanshi, suddenly recognizing that they were more likely to be eligible for a mine job if able to read, write and speak English. This change in attitudes was also reported to be reflected in a reduction in cases of girls being forced into early marriages (Lumwana/Kanga, 2007).

In regard to how the local residents felt about the newcomers, Kanga Associates also noted, perhaps somewhat rosily, that 'The newcomers have been incorporated into the villages and treated as family members' and stated that over half reported that there were no conflicts. However, these responses were recorded fairly early during the changes and the real pressures and undoubted tensions resulting from the competition for resources were yet to fully reveal themselves. Also, many in Manyama were not living by a village.

These sudden and confusing changes caused a major interruption to local lifestyles, including for the Chiefs who now had to deal with multiple and complex issues in their chiefdoms, such as allocating land, approving mining licence applications, sorting out land demarcation disputes and negotiating with the company. These duties were in addition to their normal traditional duties (as described further in the section in Section 4). Government's inability to keep up with the changes and meet the needs for more facilities, staffing and planned housing layouts meant that local people felt disadvantaged and resentful about what was happening - and looked to the company for help.

On the other hand, the increased population of newcomers, most of whom did not have access to farmland, potentially meant more customers for local produce, including customers from within the mine site (Fig. 84). However, it is difficult for farmers with only basic tools to up-scale their production, and most were constrained by distance, lack of transport and strong tools.

Consequently, many farmers were not able to meet the specific requirements of the mine for regular, large quantities and good quality produce. However, the provision of ad hoc small supplies to local markets was still possible, providing welcome income, as did earnings from charcoal burning, for which there was a large demand, as charcoal was the major energy source for cooking (Lumwana/Ruralnet 2011).



Fig. 83: (L) A local family, keen to benefit from the presence of the mine. Credit: Equinox power point, 2012.
Fig. 84: (R) A small but enthusiastic sales-person jumping up and down trying to attract attention from the greatly increased passing traffic, near the mine site. Note only two lanes but plenty of room for walkers and bicycle riders, and also for cars to leave the tarmac when an 'Abnormal' passes by, 2014.

Kanga Associates' (Lumwana/Kanga, 2007a) study reported that traders also bought up local produce, some of which was transported to Solwezi. Stones and sand for building were also in much demand, not just for housing but also for the Trust Fund community building projects. There were also entrepreneurial opportunities taken up, as demonstrated by the building of dozens of small houses with iron roofs for renting out by the Mukumbi Chieftdom to help accommodate the new arrivals (Lumwana, 2005).

Some of the income generated by these opportunities, and those from mine or associated work, resulted in increasing numbers of local people replacing their grass roofs with iron ones. Such a development was a major step towards modernity (and labour saving) and their presence was a visible indicator that money was infiltrating communities. Some of the cash also came from compensation payouts – Imakando reporting that half of his sample of compensated people invested the funds into improving their houses i.e. 38% bought iron sheets, 11% bought household goods, 12% bought bicycles, 16% used the money for school fees and 4% used them for farming. Ngosa et al (2014) also reported that one community said that the cash they were receiving helped them, among other things, to hire casual farm labour, thereby spreading the benefits to those who were unlucky enough not to be formally employed. Local people often complained that 'not many' had picked up employment at the mine but in fact quite a few local people had done so, as Table 5 shows and is discussed below.

Many social and economic problems arose: prostitution and problems with stealing were reported to have increased and were said to be related to the increase in newcomers to the area, not just at Manyama but even in traditional areas such as close to Mukumbi's palace (Lumwana/Ruralnet, 2011).

The problems were likely to have been stimulated by the high levels of unemployment, especially amongst the newcomers who could not fall back on farming to survive. Such problems were aggravated by the presence in their midst, of some of the employed with their relatively plentiful resources.

At least partially related to the above, and as expected in the circumstances, HIV and other STIs were thought to have increased over the past decade. Lumwana funded a study (LMC/ZHECT, 2007) and planned a follow-up one for 2014 but unfortunately this was not undertaken because the mine was facing a difficult financial situation at the time. The subject of HIV is discussed in more detail in the sectoral papers on the author's website.

Not surprisingly given the population density and proximity of latrines in some areas, problems of contamination of boreholes arose, and the company worked with the Council to help resolve the issues in the Kakaindu-Manyama area. Access to clean water remained a challenge as the number of bore holes sunk was not enough to service the burgeoning population and there were reports about the Lumwana river (another source) drying up. Whether the latter was due to mining activities or natural causes was unclear.

As is common in mining areas, an increase in the prices of basic goods seriously disadvantaged those who did not have ready access to cash, although the variety of goods available had increased for those that did so.

A fifty-three minute video documents the development of Lumwana Mine from its inception in 1996 to the official opening in April 2009. It highlights the challenges faced, the major milestones during the process and the management philosophy employed.



Fig. 85: Nd, circa 2010. Loyala Productions, available from Barrick Gold, Lusaka.



Fig. 86: Manyama residents across from the mine, beside the T5, with signs of some residents being employed i.e. better quality houses, metal roofs and cars. Many other houses there were less well built, August 2012.

Manyama – the mine associated area

Two different types of Lumwana-associated communities arose – the original farmers still scattered around the area, including those near Senior Chief Mukumbi's palace, and those clustered in and around Manyama (see Map 12), many of whom were newcomers to the area, having moved there from within and without the province in the hope of mine work.

Originally a scattering of houses, a small market, a clinic and basic school, Manyama became the focus of new arrivals hoping for employment at Lumwana because it was located across the T5 from the mine site, with the school and health centre being an additional attraction. Consequently, the labour recruiters set up there. Originally part of the Metebo and Mumena Chiefdoms the land was re-gazetted to state ownership as part of the initial planning for the MFEZ and town. The area was then responsibility of government, under the auspices of the Solwezi Municipal Council.

However, despite grand plans having been drawn up for a modern town, Manyama evolved into a largely ramshackle, shanty area with sub-standard houses (see Fig. 87), with a few people having better built homes (see Fig. 86.) The population grew very fast from as early as 2003 and by 2014 it was estimated to include about 30,000 people with houses spread out along the T5 road-side and reaching back by 2014, in an ad hoc fashion at least one kilometre to the south in places, along rutted, winding tracks (Lumwana, 2014b).



Fig. 87: (L) Manyama, ad hoc building, very much a rural settlement, 2012. Fig. 88: (R) An example of a commercial initiative, Mazuba Lodge, a modest dining room and bar with guest chalets beyond, 2014.

Few had title to the land they had built on and there was no mains electricity, but there were some 'gen' sets and solar panels. Sanitation was hand-dug latrines. Water was available from an inadequate number of wells or bore holes. Many did do their cooking on small stoves outside (see Fig. 89), a traditional practice and healthier than doing it inside small rooms without chimneys. Very few residents paid any taxes, yet another issue for the Council.

Because of the combination of employment and unemployment, problems with alcohol abuse and related issues such as prostitution, violence, marriages of convenience, neglect of families and much stealing became common at Manyama. Even some of those living in the mine housing would come over to partake of the night life. One local resident scathingly commented to this author that many of the workers were '... paid peanuts then they drink it all over-night, transferring the wealth to the suppliers.' One source reported that there were more than sixteen unlicensed beer outlets there in 2013.

The 'Solwezi Today' magazine included an article *Lacking Amidst Plenty: The Story of Manyama* (Zimba, 2012). Zimba reported that social life there was focussed on drinking and sexual activities and that STIs were rampant, as were other problems. These issues were seen as clearly illustrating the gap between the great wealth produced by the mine and the prevalence of abject poverty which existed across the road.



Fig. 89: (L) A solidly built, well-furnished home with cooking done outside in traditional style, 2013.

Fig. 90: (R) A brave attempt to grow vegetables (and protected by mosquito bed netting) at Manyama, 2014.

Few of the new-comer Manyama residents were able to do any farming, partly because the growing of crops was problematic due to the lack of space, limited water supplies and the risk of theft, although some did try (see Fig. 90). This reality aggravated the problems for those who were or who became unemployed and there was reported to be real poverty and hunger, with many are living a hand-to-mouth existence, with only one meal a day.

It was reported that the unemployed would go out to the edge of the T5 very early in the morning and hang around waiting for job offers which mostly failed to eventuate. By eleven hours they retreated back to their shacks for rest of the day. Boredom was a real problem, especially amongst young men who have few outlets for their energy, except the occasional game of soccer, playing pool at a local bar or sexual intercourse. It is reported to be a desperate situation. An observer described it as 'being a time bomb' and said he wished they could 'reserve' some of the mine taxes to help fix some of the problems (Interviews in 2013 and 2014).

The situation had elements of an earlier Copperbelt era which was described by Schumaker (2001):

Government and mines labelled this phenomenon the “loafer problem” and continued into the 1950s to express the vain hope that redundant labourers would return to the rural areas, as most, but not all, of them had done during the slump of the 1930s’ ... and did so again in the 1980s’

Those that did obtain employment on the mine worked very long hours, with the worker’s bus departing at one stage, at 4 hours, and returning at 1900 hours, which makes for a monstrosously long day. In September 2013 there was a change in the duration of shifts, reverting to eight hours, not surprisingly in recognition of issues of fatigue management.

Essentially, it was a case of the ‘haves’ being within the mine site with water, sewerage, power and other social services, while outside and across the T5 were mostly the ‘have-nots’. An NGO report picturesquely describe the situation: ‘... Inside this area there are banks which could help communities save their little savings. Inside this area is electricity and opposite ... 19th century darkness exists.’ (CSPR/Caritas Solwezi, 2011).

However, there seems to be no understanding that services such as electricity have to be paid for and that local and unemployed communities are hardly going to have the financial capacity to afford such charges. This problem also existed in Solwezi town and was the reason why services such as water, electricity and sanitation are always so problematic in such an impoverished environment. Luckily, reasonably priced ‘gen-sets’ and solar panels (Fig. 91) were now available for those with cash and increasingly used in both urban and rural areas.



Fig. 91a and b: Modern technology reaching the bush: solar panel charging on a grassed roofed house in a rural area and a small one enough to charge a radio, kettle or light.

Even the children had to face inequity in school as those from the mine site who were bussed to Manyama school had packed lunches while the local children often did not, with hunger causing friction between pupils – a particularly poignant form of inequality.

But the story was not all negative – as the late Pastor Ison Mubanga Tiza assured this author in 2013. He pointed out that there were some with an income who did manage to live relatively normal lives. Inside their small, burnt-brick houses with iron roofs there was comfortable modern furniture and utensils and sometimes even TVs (run off small generators). They had enough funds to buy food, pay school fees and clothes. They attended their churches and enjoyed socializing with their friends and neighbours – but lived with the constant threat of theft from those who were not in the same fortunate position.

Also, as with the Solwezi town area, some small-medium sized businesses thrived or at least did moderately well. A few modest lodges (Fig. 88) churches and many bars were quickly established and a dense market of small shops grew up along the main road (Figs. 82 and 103).

There was a greatly increased demand for produce, if local farmers were able to upscale their production and get it to the increasingly thriving market. A few local people were entrepreneurial, sold their houses and moved elsewhere while others built small houses and rented them out to the new arrivals. Some of those lucky enough to obtain a mine or mine related job or received compensation used the money in various ways, as Imakando described.



Fig. 92: One of few forms of local entertainment, soccer being especially popular with young men, with a termite mound acting as a useful viewing platform, Manyama, August 2013.

A few churches provided spiritual and welfare support to their parishioners. Soccer matches were a popular form of day-time entertainment, especially popular with young men (Fig. 92). There were also some more modern developments: two larger modern lodges were built later in the decade, both slightly apart from the rough and readiness of Manyama and attracting a more cashed-up contractor clientele and provided conference facilities.

Illustrating the desperate need for mid-level accommodation another of the more up-market lodges even stopped taking casual customers in 2014, instead renting it on a long-term basis to a contractor for its staff, while the other expanded the number of its units around in the same year. This accommodation demand was an illustration of the issues associated with the increasing use of contract staff, rather than a company employing them directly.

In 2014 a bank was built near Manyama on the edge of the T5, finally accessible to the general public, nine years after Lumwana opened. Even more delayed was the government funded Lumwana hospital which, while having been planned during the Mwanawasa era (2001-2008) and finished by 2014, was still not fully functioning there until after 2016. Given the extent of the local need and the distance to other hospitals this tardiness was a great disappointment for people in the area.

It was apparent that Manyama was divorced from traditional responsibility and neglected by its new parent, the government. Not having been proactive and proceeding with implementing the already existing plans Manyama evolved in its own, ad hoc way. The reasons for the failure of Lusaka to give it a national priority and, in good time, to allocate sufficient resources from the national treasury to do so can only be guessed at.

The lack of a government presence in the area was felt by the people. Because the Council was about 80kms away in Solwezi town, and few visits were made by officials, people had difficulty accessing the relevant departments to discuss issues concerning the provision of social and infrastructural services in the area. The Members of Parliament were equally reported to be missing, said only to appear at election time. There were also concerns that the taxes Lumwana mine paid to the Solwezi District Council were not benefitting the local area but being spent elsewhere, similarly with the national taxes. People in Manyama therefore, not surprisingly, focussed their concerns and needs on the company even though Manyama was a government responsibility.

On the other hand, government officials were often constrained from travelling to the mine area by the lack of transport and fuel. Besides, they were more than fully occupied by the pressing demands of the Solwezi town area, especially dealing with the Kansanshi mine impact, and then later Kalumbila matters. Also, to be fair, it is very challenging for anyone to plan for an itinerant, non-cohesive and impoverished population, especially when events develop so quickly.

There had been some attempts to plan for the expected influx. In 2007/8 under President Mwanawasa's government, an Integrated Development Plan (IDP) (GRZ 2008c) had been drawn up but after he passed away in August 2008, the plan was neglected. In 2012 the company, now under Barrick Gold, tried to pick up the slack by recruiting an expert to develop a draft management plan which was designed not to stop in-migration but to manage its development (Lumwana, 2012). Government declined the assistance and said it would take responsibility for the matter but subsequently failed to build on those initial efforts until it was far too late.

However, there was a development. The Council finally accepted that it had a responsibility for Manyama but it only opened an office there in 2014, and even that facility was still not fully functioning late that year. Staff began by working on a local area plan but because there was no national budget allocation for this exercise funds had to have been made available from within the current Council allocation (interview with government official, August 2014).

There was talk of making this area the Lumwana District but instead the Lumwana area was eventually included in the newly created Kalumbila district (declared in 2015) - but indeed, did later establish the boma at Manyama (rather than at Meheba as some preferred). The IDP was finally approved and launched in February 2014 and there was a further development, as described below. The government had obviously changed its mind about undertaking this task all by itself:

Barrick signed an MOU with the Council that commits the two parties to develop a plan to facilitate the provision of services in the Manyama area. This MOU provides a broad basis for co-operation between the Council and Barrick to facilitate the development of a new Lumwana-Manyama town. ... Solwezi Municipal Council under the MOU endorses the need for a Development Plan for the area in that an agreed amount of the funds shall be utilized for the provision of public municipal services to the surrounding Manyama area. As this falls mostly within Barrick's Large Mining Licenses, this assists Lumwana Project in the management of influx population in the area in line with existing laws. (Lumwana, 2014b).



Fig. 93: (L) Support for areas distant from the mine site: High value banana promotion project, Lumwana East plantation by Holy Family Cooperative. Credit: Barrick Sustainability Report, 2nd Qter 2013. Fig. 94: (R) Mukingi Girls' Secondary school, Kasempa. Credit: <https://sward.smugmug.com/Vacation/Zambia/Mukinge-Girls-School/>



Fig. 95: (L) Lumwana made major contributions to the education sector. Credit: C. Williams, ppt, 2011. Fig. 96: (R) Community contributions to CSR with local women practicing their new brick laying skills in constructing poultry houses. Credit: Barrick Sustainability Department Report, 2nd Quarter. 2013.



Fig. 97: (L) Part of Gender based violence prevention programme for couples. Credit: Barrick Beyond Borders, Dec. 2014. Fig. 98: (R) Residents giving thanks at the hand-over of the new Luauvundu school buildings, March 2009. Credit: Lumwana Trust Fund Status Report, 2007-2013

Manyama had become a shanty settlement in the bush. Whether it will ever become a 'developed' town remains to be seen, and largely depends on the continuation of the mine. It also depends on government delivering on its promises and not over-relying on the company.

Postscript 2019: The new Kalumbila Council was by then established at Manyama and appeared to be stimulating many small-scale economic developments in the area. The population and density of buildings had greatly increased and the area was buzzing with activity. It looked very different from what it had done in 2014.

Corporate Social Responsibility Programme (CSR)

The CSR programme was very well organized. A Lumwana Development Trust Fund was to be informed by the Land Use and Planning Development Committee. This body consisted of the three Chiefs, provincial planners and lands and mine staff and was chaired by the provincial Permanent Secretary (or the District Commissioner in his/her absence). It was to meet quarterly to discuss and decide on priority local area development needs to be funded, including those requested by communities. The company retained the right of refusal for any proposal but this was reported to be rarely acted upon. The Fund also included financial contributions from the mine's major contractors. Community Liaison Committees and Community Information Centres were also established to help provide community forums and information sharing. A Community HIV and AIDS Task Force was also established.

Just how well these arrangements worked in practice is not public knowledge but would be worth reviewing for the lessons learnt for it appeared to be a well-thought through, inclusive model.

The company's Sustainability Department was responsible for liaising with communities about social and economic development matters and also with the Chiefs, government departments and NGOs. It was also responsible for organizing events, managing the Employment Register, as well as grievances and monitoring and reporting on progress of the Trust Fund projects and the situation of communities.

The Sustainability team (Fig. 99) over-saw the provision of millions of dollars' worth of contributions to the three Chiefdoms. Some examples appear in Figs. 88-93. Notably, the recipient communities also contributed in kind, for example by providing burnt bricks, sand, crushed stones and labour. They also participated in the monitoring of project implementation. This involvement meant that projects took longer than if the company had undertaken them itself but did help to create a sense of ownership and to encourage skill development.



Fig. 99: The Lumwana team in 2016. Credit: David Subakany.

As a quarterly Sustainability report noted ‘In recognition of the nascent management capacity of community project management committees and management institutions’ the company undertook the procurement of other goods and provided finance only for labour and transportation (Lumwana 2013b). Challenges to implementation were reported to have included the lack of capacity of local suppliers to meet requirements, despite their claims of being able to do so, slow provision of building plans, delayed provision of community inputs and slow construction by local contractors.

The contributions were appropriately focussed primarily on support for the education, health, agriculture and economic development sectors, the latter including the creation of a Lumwana Community Business Association in 2008.

However, there were numerous capacity gaps to be overcome, for the reasons experienced in the other mine communities, but also including the lack of electricity in the Manyama area. Mate’s concept paper provides an overview of the various issues and possible solutions, focussing on the Mining Value Chain and non-Mining avenues including the establishment of a Business Incubator and Mine Supply Park (Lumwana/Mate, 2011b). The Finns provided support through a multi-disciplinary workshop in May 2013 for exploring various business opportunities (Lumwana, 2013d).

In April the following year Barrick Beyond Borders provided a comprehensive account of how local suppliers were being supported, including the provision of training in how to run a business. Changing mind-sets was described as being one of the major challenges for the Local Contractor Development Program (Lumwana 2014a). Despite all of the various inputs over the years promoting local business proved to be difficult.

Infrastructure projects were a major component and included the building of classrooms, health centres/clinics, staff housing, community centres, women’s production centres, library, laboratories, poultry houses, Chiefs’ (institutional) residences and water supplies. In line with its heavy focus on the importance of education Mukinge Secondary School in Kasempa was also supported because Lumwana area pupils are part of its catchment area (see examples, Figures 93-98).

As well, support was provided for agricultural development and various forms of training, including for business development, as well as dozens of scholarships for school students, the upgrading of teachers’ qualifications and apprenticeships at Solwezi Trades School. Programmes were also implemented to help empower women’s empowerment, including to help address the low levels of literacy. Health programmes, including malaria prevention, HIV education and testing and water testing were carried out. Some support was also provided for cultural matters, including the annual ceremonies. The Trust Fund Status reports provide details on the numbers, types, location and cost of the various projects (e.g. Lumwana 2013b).

Despite the many significant CSR contributions, and just as happened in Kansanshi’s early days, the extent of these inputs was rarely recognized or regarded as being sufficient by many community members, especially by those in the Mukumbi area who were most affected by the presence of the mine. This was partly because the recipients also included those in Chiefs’ Metebo and Mumena’s areas, covering a very broad area. The influx of newcomers in the Manyama area contributed to the dilution effect. Government’s contribution included provision of staff and supplies to new facilities but it wasn’t always able to do so in a timely manner.

Cultural factors influenced the effectiveness of some approaches used by the company in good faith to help communities. For example, despite the supposedly inclusive mechanism put in place for selecting CSR projects the Ngosa/Dyer et al team (2014) recorded complaints by some communities that they weren't involved in the choice. If that was true they needed to refer to their own traditional authorities through whom all projects were meant to be channelled. It was apparent that their local communication channels did not always work effectively. There were also practical issues such as the difficulty of communicating quickly with geographically dispersed and often mobile groups, as well as the formal, western style of meetings and the language used. Another example was the dairy cows for girls project which was inappropriately targeted.

Dyer et al's 2014 study examined the effectiveness of Lumwana's Agri Food Innovation Programme (and that of Kansanshi's conservation farming) in regard to the extent it was contributing to Climate Compatible Development (CDD). Arising from 2012 field work, the study identified a number of issues regarding project effectiveness, including lessons to be learnt in design and implementation.

There was also some self-awareness amongst some communities. The Ngosa/Dyer et al (2014) study noted that Nkulumazhiba respondents had observed that their community was not united in their approach to the company. This had resulted in uncoordinated and ad hoc requests which were not coherent enough for the Trust Fund to be able to respond. Such a lack of cohesiveness is a characteristic of the Kaonde culture and a reason why cooperatives often fail to be effective in the region, as Crehan (1997) discussed. It was apparent to the team that there was a need to help communities propose viable projects. They needed civic education too because they were constantly making demands on the company, failing to understand what government should be providing. The researcher's team also noted that there was a '... certain reluctance or inertia on behalf of the communities to adopt new practices and a culture of relying on hand-outs'. The lack of entrepreneurial spirit and unreliability about loan repayments (particularly by males) were also problematic - and common to the region.

Other Matters

Another issue about Manyama was that, apart from some assistance from small churches and the Caritas Solwezi mining project around 2013, it was almost entirely devoid of NGO support. This was perhaps, partly because it was not a cohesive community, being mostly made up of newcomers and itinerants of mixed backgrounds and did not fall under any Chief. Or perhaps the NGOs were largely focussed elsewhere.

In the desperate hope of better job opportunities some of the unemployed eventually moved another 67kms along the T5 to Kisasa after Kalumbila mine started preparations from 2010, just as some had moved to Solwezi and then beyond to Lumwana in the first place. But some just stayed on despite lack of employment, presumably relying on relatives and friends for their subsistence or engaging in micro-enterprises, including sex work. One international observer asked this author why they stayed on in Manyama when the situation seemed so hopeless but poor Zambians do maintain a strong spirit of hope – that life will improve soon, despite much evidence to the contrary. It was also possible that they couldn't afford even the bus fare back home, that they had given up their humble home and that conditions there were even worse than at Manyama. It was also suggested that if CSR was provided to such communities it is legitimizes, and therefore encourages the unemployed to stay.



Fig. 100: Fluro gear and hard hats - the 'holy grail' for many young (male) Zambians. Credit: Kansanshi CSR report December 2016.

Local Employment

Obtaining mine employment (Fig. 100) was the prime interest of many young men, just as at Kansanshi and the company (under both Equinox and Barrick Gold) attempted to support that objective as best it could. Lumwana tried to follow a policy for 'a comprehensive social uplifting programme' which aimed to train up local people for jobs in the mine, rather than using better educated and more experienced outsiders. By training local novices Equinox believed it would develop a loyal and better trained workforce without 'the bad workplace habits of the Copperbelt' and it reported this strategy to be highly successful. An external evaluation would reveal to what extent this was true and what approaches were taken which made it work – information which would be valuable for government and other companies. But it couldn't have been an easy practice to follow because of the low level of education in the area and because mining requires a very different type of work ethic from that customarily prevailing amongst rural communities.

To enable local participation a job register was set up in each chiefdom, with the respective Chief acting as broker, signing off that an applicant was local, and this list was consulted first when jobs became available. While there were some problems associated with the list, as also happened at other mines, it did enable local people to have an advantage over outsiders, up to a point. The list was later also opened up to include those from other nearby chiefdoms, including the Musele area.

However, the number of employees was reduced as the mine moved from construction to production and also due to the change in management approach, as well as an economic down-turn in the later years. As the company explained in its second quarter 2013 Sustainable Department report: 'Due to the fact that the company has been implementing the turn-around and cost reduction measures there have not been any [new] opportunities for semi and non-skilled labour' i.e. for recruitment from the Chiefdoms' employment list during the second quarter of the year' (Lumwana, 2013a).

The following data in Table 3 from the same report clearly indicates that a significant number of local people had been employed and half still were by late 2013 (Lumwana, 2013a). It also shows that representation was fairly evenly spread between the chiefdoms, albeit with slightly more coming from Mukumbi, which was appropriate given that it was on their land that the mine is situated.

TABLE 3. Cumulative Local Register Employment Figures, 2006 to September 2013			
Chiefdom	Total	Demobilized	Current
Mukumbi	2409	1184	1225
Mumena	1922	951	971
Metebo	1478	753	725
Other Chiefdoms	210	137	73
Total	6019	3025	2994

Credit: From Table 1.1.3, Lumwana Sustainability Department Report, Second Quarter, 2013.

Unfortunately, this table was not gender disaggregated which would have revealed how many women were employed. The company stated that it did make a concerted effort to recruit women and much publicity was given to those driving the giant trucks. Nether-the-less, although in most cases, it was males who were more eligible for employment because of their higher levels of education. As far is known no study has been undertaken on how women employees were able to fit into such a male dominated environment, what sort of issues they faced, whether they stayed employed and in what sort of roles (this matter is relevant to all three mines).

But the reality was that most local people were not sufficiently educated or skilled for employment in the more longer lasting higher-level jobs. This was especially so for the type of jobs required during the production phase, although there are always other jobs such as security, cleaning, catering and gardening which can absorb some of the less educated. However, many received training which helped them to develop new skills and become more employable (Fig. 101).



Fig. 101: Training of new staff. Credit: Craig Williams' power point, 'The Story of Lumwana', c 2011.

Even when employment was obtained there were issues – the Ngosa/Dyer et al (2014) study reported the presence of a naivety and lack of broader understanding amongst local people of the importance of Occupational Health and Safety (OHS) matters on a mine.

An example of this was when it was reported that '... those with employment stated that there was no job security in the mine due to the strict alcohol policy which meant that those infringing this policy were dismissed instantly without warning.' This misconception was not all that surprising given the lack of education and modern world experience and the widespread nature of alcohol abuse amongst local men (and, increasingly, women), drinking being a common social activity.

The company had also encouraged Zambian employees who had been identified for key positions in the organization by having them participate in an 'under-shadowing' programme for key positions. This would have helped to increase the number of Zambians at senior levels. However, about seven of those employees were reported to have had moved on to jobs abroad, discouraging the company from continuing this form of support as it wasn't paying off as planned (Zambian Post, 2013b). This is in fact a common outcome of advanced education and one not restricted to the mining sector. Given that this type of support is an expensive investment in nationals of the host country, such an outcome is a legitimate argument for bonding arrangements to be put in place. This author introduced such an arrangement for trainee nurses back in the mid-2000s and the evaluation showed it had largely worked to keep staff in the province, although not necessarily in rural areas as had been the objective.

There do not appear to be any studies reporting on what happened to retrenched local staff, how they reacted to having their new wealth being reduced to nil and whether they willingly went back to farming, moved back to other areas such as the Copperbelt or tried other activities. It is known anecdotally from Manyama that people suffered when there were lay-offs, such as happened with the major contractor Moolmans in 2012. Those retrenched from outside the area may well have had little or no savings, nor access to farm land and to compensation, although some did move along the T5 to Kisasa in the hope of alternative work at Kalumbila. Those retrenched also lost easy access to banks because the only ones close by in the first decade were within the mine site.

Another employment related impact reported by Kanga Associates (Lumwana, 2007a) exemplified just how economically fragile was the existence of many people's lives: One rural mother was quoted as saying:

... although children¹⁶ who have gone to work in the mine as casual labourers do not earn enough to share with their families back in the villages, the demand on household resources have been reduced with the[eir] departure...

The other point about the salary earned being insufficient to share (as culturally expected) may be because of the high cost of living away from the family or else rash spending practices, or simply below basic living cost wages for casuals, although the rates are approved by government. This situation raises the issue of whether undertaking casual work is in fact worth doing, given that it raises expectations, perhaps spoils attitudes about farming and doesn't help improve the family's lifestyle i.e. it raises false hopes. Such work also reduces family labour capacity, a significant factor given that this was a period when farmers should have been be upscaling their production to meet the increased demand.

Imakando's study shed a different light on the situation of those who had been compensated. He found evidence that most were surviving at least reasonably well, with better homes now, for example with metal roofs, that they had increased their farm sizes and were selling their crops and/or labour to the increased number of buyers.

¹⁶ Meaning their own adult off-spring and that there would therefore be one less mouth to feed.

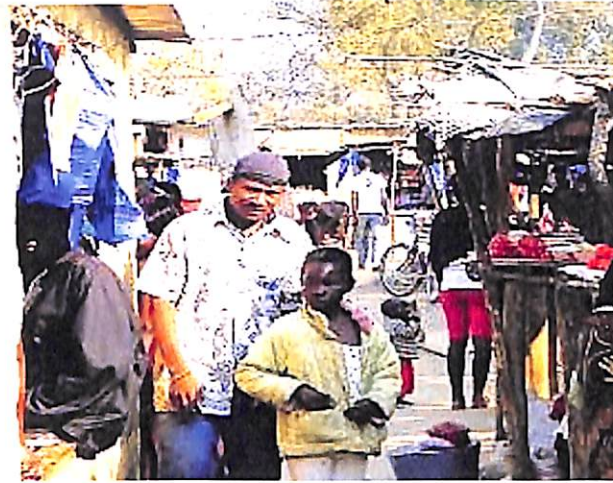


Fig. 102: Mr and Mrs Kayumba of Solwezi appreciating the cheaper prices available direct from the grower, on the T5 roadside, near Lumwana, 2014. Fig. 103. (R) The thriving market at Manyama. Credit: Barrick Beyond Borders, 2012.

Other Impact

While the arrival of the many outsiders did provide a greatly increased market for agricultural produce, there were constraints preventing many local farmers from fully meeting this demand. These included poor quality tools, lack of farming inputs and transport and the condition of tracks, and the need for irrigation during the dry season. The CSR programme attempted to address these constraints, not always successfully because of the nature of the culture. It was also tempting in the need for cash to sell whatever had been produced and not leave enough food for the family to last through the traditional 'hunger season' in December/January. Some local growers however, did manage to benefit from the sale of produce, at least at times (Fig. 102).

The major constraint to supplying the mine, supermarket and lodges was that they were not able to be consistent in their quantities and in its quality – hence supplies were still largely brought in from elsewhere. Other items such as clothing and small house-hold goods trucked in from the Copperbelt and Lusaka sold well in the burgeoning market (see Fig. 103).

There was other impact. Not only was access to nearby forests reduced but some claimed that the flow of rivers and streams had been affected and there was said to be pollution at times. ZEMA wasn't available often enough to provide a objective opinion and have the situation corrected, if an issue was shown to be true. It wasn't possible to clarify these issues.

Nor did anyone explore the psychological impact of suddenly being cut off from what had, more or less, being free-ranging territory for many generations, and seeing it destroyed. One Barrick staff member shone a brief light on the possibilities when he mentioned seeing a former resident gazing with astonishment across the heavily mined land on what had previously been his farming area. One can only guess at what it meant to this person, and to the others so affected. This was an unquantifiable loss.

As the population multiplied, and in the absence of (affordable) electricity, the demand for charcoal for cooking increased (see Fig. 104). It is not known if any research documented where supplies were coming from and the extent of deforestation occurring.

The Forestry Study (Lumwana, 2009) was only able to note that such problems were occurring and predicted it would worsen, as with small scale sand mining and the destruction of anthills for brick making.



Fig. 104: Selling charcoal was a thriving business, Manyama, 2013.

As in the Solwezi town area local communities were also disadvantaged by the competition created by the influx of outsiders to schools and clinics, which also caused much stress for staff. The company reported that around 2009 Manyama Basic School had five classrooms, 1,500 pupils and eleven teachers, making for about eighty-five pupils per class. The situation worsened in later years according to an NGO even though the Lumwana Trust had funded classrooms, desks and teachers' accommodation. In 2014 Caritas Solwezi was quoted as reporting that some pupils were learning under a tree because of the lack of classrooms (Lusaka Times, 2014). The situation was equally difficult in the clinics, including problems with lack of staff and inadequate supplies of medicines and no fully functioning hospital in the immediate area until after 2016. As with the Kansanshi communities, the changes were disturbing and confusing, and there was much bewilderment that they, the people on whose land the mine lay, were not significantly benefiting as individuals from the developments.

Being 'invaded' by more entrepreneurial, often better educated strangers was also anxiety raising. There were also issues associated with the difficulties traditional authorities had trying to communicate effectively with their people at times. It was difficult to do so given how scattered they were, especially in the early days when mobile phone reception was poor or non-existent. Consequently, local people often complained that they didn't know what was going on or recognize the extent of the CSR contributions.

The changes also affected the Chiefs who now had to deal with increasingly complex social issues within their chiefdoms. These matters included the need to allocate land, approve exploration and mining licence applications, sort out land demarcation disputes, identify and support economic developments and negotiate with the company, in addition to their usual traditional duties. They also had to deal with each other, and there were issues associated with the recognition of three Chiefs, rather than just Senior Chief Mukumbi on whose land the actual mine site lay and whose people were most affected. The proposed siting of the new town and MFEZ at Manyama (close to Mukumbi) was not well received by the other two Chiefs who believed it should have been at Meheba, which already had some infrastructure (and which lay on what had previously been their land). Such a location would also take the congestion away from the T5, making it much safer.

As Meheba was in the process of downsizing and closing in this early period, there was some sense in their proposal (although later that situation reversed). Harry Michael, when Managing Director of LMC, was also keen to move the focus of activities to Meheba because it would ensure developments occurred well away from the mine site which might, at some point, expand south of the T5 – which would cause significant relocation issues. But the common sense inherent in both proposals was not heeded by government.



Fig.105: The T5 in the Manyama area, by then a very busy area. Credit: Barrick Beyond Borders, Managing In-Migration at Lumwana, December 2012. (Note the un-supported edges of the tarmac which will deteriorate quickly)

Another significant change was the volume of traffic on the T5 leading west from Solwezi town via Mutanda turn-off and on to Mwinilunga which had been minimal in the pre-mine days, apart from an occasional vehicle and people on bicycles and on foot (Lumwana, 2005). The rate and size increased significantly once Lumwana mine preparations began and accelerated even further after 2010 when Kalumbila commenced, especially during construction and later during production (Fig. 106).

The common practice of local people moving from stream-side rural areas to the edge of main roads and spreading out on both sides, proved to be particularly risky (and noisy) in a mining boom. Due to the lack of planning restrictions small shops and houses proliferated along the edge of the road and increasing numbers of people settled along or near the roadside (see Fig. 105). Such developments clearly indicated the need for much stronger government planning control over the location of houses and commercial enterprises well back from the roadside and preferably a considerable distance away.



Fig.106: Traffic challenges for other drivers on the T5 heading towards Lumwana or Kalumbila. Notice the width of the truck compared to that of the road. 2013.

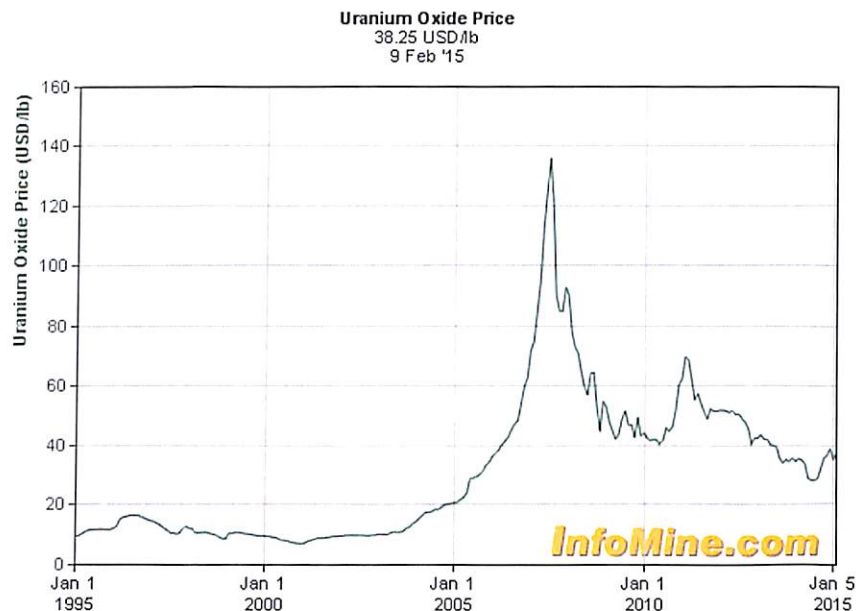


Fig.106b. Uranium oxide prices. Credit: Info.mine.com

Radiation Bearing Minerals

It has been known for many decades that the North West has naturally occurring radiation-bearing mineralization present at varying levels in different types of geological formations. Parkin (1980, p. 23/24) mentions such occurrences. International uranium seeking companies were also aware of their presence and French AGIP and COGEMA (later Areva) were exploring in the province in the 1980s/90s although with no results. It was not until Equinox bought the Lumwana property that the subject actively came onto the public agenda. In the case of Lumwana it was only as a by-product of copper mining. Commonly called 'uranium' the radiation bearing rock material is not in a pure form and has to be processed to become saleable uranium ore (as u_3o_8 , 'yellow cake'). A feasibility study was undertaken for Equinox in 2008 (Lumwana 2008c) and its inclusion in the mining process was accepted by government before copper production commenced in 2009, in recognition that it was an inexorable by-product of some of the copper which was the prime mining target.

Consequently, low grade radiation-bearing rock has been unearthed since mining began but to extract the rocks and process them to produce the 'yellow cake' was not commercially viable at that time. Consequently, that material was put aside in a specific stockpile. This was done partly because of the depressed global market for uranium during this period as can be seen from Fig. 106b. Related to that reality in order to extract the uranium from the copper ore the company would have to have built a uranium extraction plant at considerable cost. That step could not be economically justified at the prices prevailing during the first decade of the mine's functioning. It is possible that they could be processed one day if the U price rose significantly and looked like staying there for a decade or two. Developments on two new mines in Southern province were similarly affected, having to moth-ball their startup processes because of the low price. Kalumbila (Trident)'s third mine site, Intrepid, is reported to have high levels and has remained an exploration site.

Not surprisingly local communities were disturbed about the possibility of radiation affecting their lives. In order to allay local fears about the risk the company undertook a programme of community education.

This included sending community representatives to a uranium mine in Namibia to learn about its mining. It also provided a special briefing on the subject for the Council of Elders (a group of experienced citizens). However, it was reported by NGOs that communities still had concerns about the subject. In response, CSPR and Caritas Solwezi (2011) produced a report on the subject which expressed concerns about the health risks to local people and included examples of why they thought people were already negatively affected. But this report was inadequately documented and made assumptions without justification - and in fact risked being libellous and alarmist. Despite being very well-meaning, it appears that the team was inadequately qualified to report on the subject.

Illustrating increasing awareness and involvement in the subject amongst NGOs, a national report reviewing uranium mining policy in Zambia was produced by the Council of Churches of Zambia in 2010. The Council was concerned about government not having a policy on uranium mining and related safety issues, including the transport of the product by road through Zambia to ports. It was particularly concerned that GRZ did not have the capacity to monitor and safely manage such a potentially risky product. A mention was also made in the Churches' report about the radioactive status of some of the Lumwana copper transported to the Copperbelt for processing. This concern was raised despite uranium levels in the concentrates being well below World Health Organization (WHO) standards for treatment. Others anecdotally raised the issue to this author and also of the risks to mine staff working in the pits – despite the company's stated safety policy and practices.

However, the company reported that its operation management of radiation issues was compliant with WHO standards and the Equator Principles, notwithstanding the lack of GRZ regulations and guidelines. Despite this assurance the industry globally has a long history of obfuscation about the dangers of uranium mining and the extent of mine workers' exposure over the past half century, as well described by Hecht (2014). Consequently, the communities and NGOs would appear to have every right to lobby government and the company to protect the interests of the local people and mine workers until they see appropriate national policies in place and regular, genuinely independent and scientifically valid monitoring reports. By the same token, NGOs do need to be very careful not to make accusations without solid scientific evidence.

It would appear that there are strong grounds for a neutral organization such as the International Atomic Energy Agency or specialist academics to conduct a thorough study of the situation in the North West, and not just around mine sites, to clarify the situation for everyone's benefit.

Uncertainties

Lumwana was affected by a number of other uncertainties over the decade. They included the global economic downturn of 2008/9 and the consequent decline in copper prices, which threatened to make the mine un-economic. In 2011 Lumwana changed ownership from Equinox to the much larger and very experienced global company Barrick Gold Corporation which had a different style of management and made many changes to the way the mine was operated. It was also far less open to communication with outsiders, for reasons at least partly related to difficult community relationships having been experienced in other (far more challenging) countries. The issues associated with home ownership on the mine site also contributed to the uncertainties.

Further issues arose in 2012/13 when a major contractor was sacked and the subsequent lay-offs created deep uncertainty amongst employees and much anxiety among the many who lost their jobs. Also, difficulties were reported around 2013 in accessing new deposits after the first pit was exhausted and there were doubts at times whether the mine could continue because of the then low mineral prices and the difficulties in finding other economically viable deposits. It was concerning too for the company that many people had moved onto land held under their exploration licence which might have contained prospective deposits. Also, there was a possibility that mine site houses would have to be moved. These events created a great deal of uncertainty which was worrying for all involved, both in and outside the mine site at Manyama. Another significant issue was that government changed its mining tax regime a number of times, adding further uncertainties to the company's financial plans and consequently its existence. It was a period of great concern and rumour mongering.¹⁷

Such happenings remind all players of the inherent uncertainties associated with mining and the importance of local people establishing alternative income generating options, as Senior Chief Mukumbi said to this author in 2013.

Impact on Communities Further Away (Mumena and Metebo Chiefdoms)

The impact on other communities further away from the Manyama area does not seem to have been specifically studied by any researchers. However, the quarterly company Sustainability reports give a good picture of how some of them benefited from the CSR inputs such as water supplies, agricultural support and schools, clinics and staff accommodation. Also, the Social Impact Assessment by RuralNet (Lumwana, 2011a) and the Report on Compensated Community Members by Imakando (Lumwana, 2013c) also give some indication of the benefits provided. However, as with the other mine areas, it appeared that some individuals in all areas failed to appreciate that they were also recipients of these communal benefits and therefore discounted their value because they weren't being financially enriched as individuals. The Forestry study (Lumwana 2009a) also provided some information on distant communities, including Shilenda.

Other Studies

Lumwana admirably supported a number of sector specific studies, including an HIV and TB study (Lumwana, 2007) and a Business Sustainability study, the second volume of which focussed on gender issues (Lumwana 2008 a and b) (plus the others mentioned above). The company was also pro-active in recruiting Zambian consultants and NGOs to undertake studies and various projects, although the quality was not always high. The latter situation illustrated the need to upgrade social science research and reporting skills in the country, which would then enable nationals to participate more effectively in the mining boom as there was now an increased demand for those skills.

As with Kansanshi, there was interest in the mining developments from NGOs, academics, students and some bilateral agencies but not nearly as many as at Kansanshi and Kalumbila (see associated Table of Studies on author's website). Together these studies contributed to an enlarged data base of information about the area and helped to inform the Social team and others, although the reports were of variable quality.

¹⁷ Change of ownership occurred again in 2019 when the mine was sold to South African company RandGold.

However, because there were so many interviews and focus group discussions over the years, and because they were not perceived as having resulted in improvements to their lives, local community members came to mistrust or misunderstand researchers which led at times to less than factual reporting. One such comment came from the 2009 Forestry study which noted that 'Some community members agreed to be interviewed with mixed feelings saying that Lumwana had been conducting such surveys but no benefit or results are seen from the surveys.'

Imakando's 2013 study also brought up examples of this issue – noting that the people thought his presence meant that the company was interested in resolving their outstanding grievances, such as why they as individuals were still disadvantaged. But he surmised too that they also did not want to admit that their lives were at least somewhat better-off than before the mine came - because they feared losing further support from the company. However, the local people also reported reduced access to forest products – because of the increased distance, which was indeed true – but perhaps only because they insisted on staying near the 'action' – and (the limited) services - at Manyama. The latter point reminds that providing attractors, including well set-up schools, clinics, planned housing areas, some sealed roads, markets, water supplies and agricultural extension services well away from a mine area and close to communal bush land might have reduced the extent of the problems at Manyama.

Reflections on the Lumwana Mine Impact

Lumwana mine's initial challenge, and achievement, was that it was built from scratch in bushland with no infrastructure or services available. As well, the government agencies with which it was meant to interact were about 80kms away. The company overcame those hurdles, and others, and managed to set up in a remarkably short period of time. Being a 'greenfield' it had no legacy issues to consider.

The mine area consisted of much forest and was in places farmed, with small, temporary plots, but no villages on site. Consequently, loss of access to what became the mine area did not involve any resettlement. However, such bush is valuable for its forest products and an important component of rural life and loss of access to the area meant that people had to go further afield both for bush products and farm plots.

More seriously was some interference with/diversion of local rivers which are an important source of household water supplies (but to what extent was not documented by any researcher), and reportedly compensated for by the building of bore holes by the company.

The local communities shared similar characteristics (especially low education/literacy levels) and attitudes to those in the Kansanshi area, and these contributed to difficulties in their understanding what was happening and their ability to cope with the changes. Because no housing resettlement was required community compensation matters were less complicated than those at the other two large mines, although not without some issues related to the allocation of new farm plots and whether rates were adequate.

While the mine fell on the land of only one Chief (at least during this initial period), the exploration licenced area included the land of two other Chiefs. As with other mines, there was the question of where the boundary for company contributions should lie.

In this case the company was quite inclusive, including the three Chiefdoms in its coverage. The consequences were that CSR resources were thinly spread, way beyond the actual mine area.

There was a question about how Chiefs can better manage their people's expectations, especially about getting and keeping mine jobs and becoming personally wealthy. Guidance was needed about the importance of becoming less focussed on mine work and more involved in non-mining income generation opportunities. Senior Chief Mukumbi, who had worked on the Copperbelt, was well aware of this, saying to this author in 2013, 'A well-meaning person needs to think in two directions – one, mining and two, other areas.' Others who also thought wisely included Chief Mumena and some local businessmen who worked hard to create or support various types of local economic developments. They were sometimes assisted with mentoring from the Sustainability team.

The rapid influx of newcomers seeking mine work into the previously low-density area had pluses and minuses. On one hand, the local people resented that the newcomers were providing competition and over-whelming the few social services which existed. On the other hand, there was a greatly increased demand for their farm produce, although constraints to meeting that demand existed. There was also an increase in small scale commercial activity, with the growth of an expanded local market and a much greater choice of goods on sale. The previously quiet rural area of Manyama across the road from the mine site became a busy commercial area, albeit a rather ramshackle one, hardly reflecting its position as a neighbour to a large modern mine.

Government's failure to implement a pre-emptive influx management plan at Manyama and to actively support the realization of the Lumwana town plan and the related MFEZ resulted in much wasted government and company planning effort, and cost (especially to the company). Potential economic opportunities were un-realized and many social problems arose, some of which at least, could have been ameliorated. The failure to open the hospital in a timely manner was another example of this weakness.

By the same token, local government was handicapped in a number of respects, particularly by a lack of increased allocation of staffing and resources which would have enabled it to be more involved and effective beyond the Solwezi town area. Lack of political will also appeared to play a part in the issues, as did an over-reliance on the company to resolve any issues arising. Coming under the already over-whelmed Solwezi town Council during its first decade also did not help the situation.

On a more positive note, a feature of the company's approach was its strong social orientation, including the way in which it invested in its social team and a variety of studies right from the beginning, as well as by developing a comprehensive monitoring plan. Its extensive CSR programme was well structured and inclusive in its management and it included contributions from major contractors as well as from the mining company. In addition the requirement for community contributions was a significant aspect, helping to prevent the development of over-reliance on the company and encouraging some degree of self-initiative.

This approach was beneficial even if it dragged out implementation and made it less straight forward than it might otherwise have been.

Its range of project activities were appropriately focussed on local priorities and generally, although not always culturally, appropriate. An external review would show just how effective the inputs had been. The eventual transitioning in 2015 from direct management of the Trust Fund to the Chiefs acting as Trustees along with a representative of the District Commissioner at the end of the first decade was admirable and it will be informative to see how well that worked out.

As at Kansanshi, the extent of its contributions were not always well recognized, partly because they were spread over three Chiefdoms and their impact was also dissipated by the extent of the population influx to the area. Some sort of community newspaper distributed through the traditional system might have helped clarify that to the widespread communities, although it is possible that this information might have fanned resentment given how far away from the mine some projects were located. Also, many could not read, although there is always someone who can do so for others.

The uncertainties about the mine's future at various stages, created doubts about the mine's continuation over the years. These uncertainties contributed to underlying anxieties amongst the local communities, as well as amongst the newcomers. There was also a lack of confidence in the advice given by government and the company about the radiation risks to local people. The lack of a national uranium mining policy and indeed an independent, scientifically reliable monitoring programme were legitimate causes for concern, even if the company stated that global standards were being followed.

Company plans for staff ownership of housing was well-intended but unfortunately failed because of misuse of the properties by some of the residents. This experience raises the issue of what type of staff accommodation is appropriate, especially given what happened in Solwezi town. It also raises the questions as to whether home ownership is a realistic objective in these situations, especially given the inherent uncertainties associated with mining.

The company policy of prioritising employment and training of local people was admirable but must have had challenges given the local levels of education and lack of familiarity with modern work ethics. It would be helpful to know what was learnt from that experience, similarly for issues affecting agricultural productivity and business development. Another aspect of this story is how the diversion of local human resources to the mine affected local farming productivity and workloads, including for women and children. There is little in the public domain on these matters but there must be important lessons which would be useful to government and other companies. Such a review should include looking at how cultural matters were affected or influenced outcomes.

A widely prevailing issue was that of the local communities always looking at the company rather than to government for the provision of basic services – because the company was close by, and because it had lots of money (seemingly) and because it got things done efficiently, unlike government. From government's point of view it would have been easy to feel let off the hook of having to provide services for these people. But as Barrick Gold's regional CSR manager was reported as saying on its website article 'Managing the In-Migration' (Lumwana, 2012), the company '... must not become a de-facto government' and that they 'don't own the development process, nor want to.'

In many respects Lumwana was something of a quiet ‘horse’, somewhat out of the limelight because of its distance from town and also because of its lack of major issues (or at least ones which received publicity). As a result, its activities were comparatively infrequently mentioned in the press and this was probably because they were far less contentious than those at Kansanshi, or, later, Kalumbila, on which the media and NGOs were much more focussed.

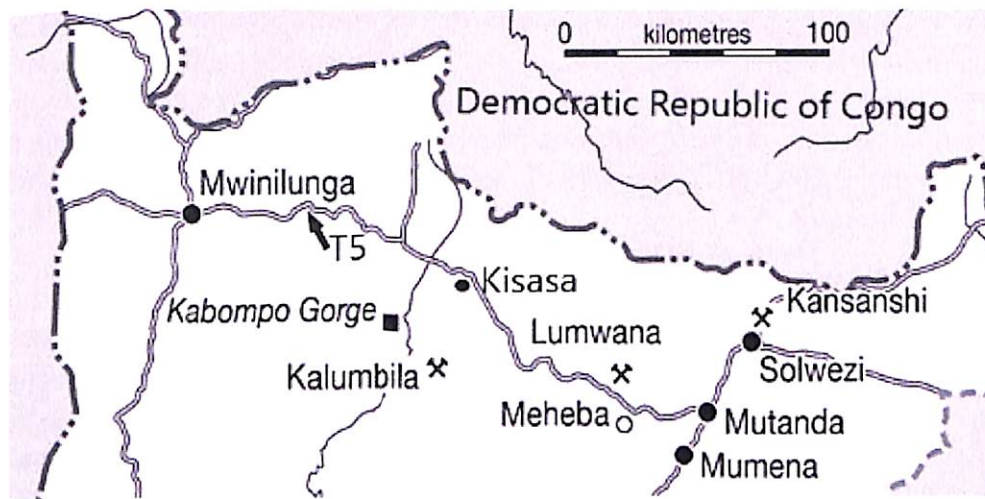
But, related to that point, the company evolved during the decade from being an open communicator to being something of a ‘closed shop’, the reverse of Kansanshi which opened up as the decade went by. Researchers discovered this when they tried to obtain information with little or no success, making it difficult to obtain a clear picture of what the impact had been like for communities, from the company’s point of view. Consequently, numerous inaccuracies have appeared in researcher’s reports over the decade, indicating that it is better public relations to respond to requests than not do so i.e. as a form of risk management, if not a learning exercise. However, as with the other mines the problem is when, despite information being shared, that the reports produced are inaccurate, as discussed in this author’s paper on *Fake News* (O’Callaghan, 2019). However, running a ‘closed shop’ indicates that there is something to hide, when in fact Lumwana has many positive aspects to demonstrate.

The Lumwana experience was different from that of Kansanshi for a number of reasons, as explained, including that it was a somewhat smaller mine with a smaller community in a rural area. But similar issues arose regarding how to most effectively involve and benefit traditionally-oriented and poorly educated local people, how best to manage influxes into the area - and especially the question of where did the boundaries of their responsibilities lie and where did those of the government pick up.

As with Kalumbila, it was surprising to see how rural the area still looked despite the presence of a mine and population influx nearby (Fig 107).



Fig.107: The T5 not far from the Lumwana/Manyama area, still heavily forested despite the nearby mine and influx of newcomers, 2012.



Map 16: Location of Kalumbila in relation to other key places and the T5, with Kisasa marked. Credit: Extracted from larger version with new names added, Carto GIS, CAP, ANU.



Fig. 108: The first company offices and staff tent accommodation, Kalumbila, June 2012.



Fig. 109: Sentinel Plant area, 18 months later. Source: FQML power point, 31 December 2013.9

KALUMBILA MINE (Trident, consisting of Sentinel, Enterprise and Intrepid)

Company: Kalumbila Minerals Ltd., (KML), subsidiary of First Quantum Minerals Ltd. (FQML)

History

Kalumbila mine (officially known as Trident), the third major open pit mine development, commenced preparations in 2010 and, like Lumwana, it was a *greenfield*. The focus was on mining copper, nickel and cobalt. The mine site was established in a well-watered, heavily forested and lightly populated rural area about 130 kms west of Solwezi, and about 60kms beyond Lumwana along the T5, then about 27 kms south (see Map 16).

As with all mining prospects in the North West the Musele area has had a long and erratic history of exploration, in this case going back the 1950s. Roan Selection Trust explored from 1959-61, followed by Anglo American and Equinox in the 1980s and 1990s. Widespread but low-grade mineralization was reported. Some small-scale mining was reported to be undertaken in more recent years by four local people (it is not known if they were licenced) who lost their access when an exploration licence (No. 267) was granted to Kiwara Public Limited Company (Plc), a London based exploration company.

Kiwara Plc. had held the Prospecting Licence through its subsidiary Kiwara Resources (Zambia) Ltd., which held 80% of Kalumbila Minerals Ltd., (KML) with 20% being held by Zambian partners LM Engineering Ltd. (15%) and Kashengeneke Enterprises (5%).

KML submitted an Environmental Project Brief to ECZ (later ZEMA) in January 2008 (approved June 2008) and an Environmental and Social Review Summary was prepared for the International Financial Corporation Board in April 2009 (Kiwara, 2009). The project was reported to be in its early stages and was yet to produce an initial resource statement for the three sites, Kalumbila, Kwako and Kwanga. The report noted that the licenced area had previously been a Game Management Area and that it cut across three Chiefdoms, Sailunga, Ntambu and Musele but mostly involved the latter.

It was reported that a camp had been built and initial drilling was being carried out without having to relocate any villagers who were sparsely settled except where located along the roadside. Forty-one local villagers were reported to have been employed as unskilled labour, with the numbers involved having been reduced due to activities being cut back because of the Global Financial crisis (GFC) – but the layoffs had been accepted peacefully because of their need to go and farm during the wet season. It was also noted that the Zambian joint partner LM Engineering was responsible for communicating with local communities and Senior Chief Musele, who was provided with a vehicle ‘for use by and benefit of the Musele community’ (Kiwara, 2009). Some support was also provided to the Musanda community school and the old Anglo-built runway was being reclaimed from the bush.

Descriptions of Developments

The first drilling results were announced on 21st October 2009. The following month FQML announced that it was intending to acquire Kiwara PLC for approximately \$260.2m and deal was formalized on 29th January 2010.



Fig. 110: View from the senior staff lodge on Kalumbila Hill of beautiful bushland, even though there is a large mine site and housing estates down below, 2014.



Fig.111: The residential developments carved out of the extensive bush. Credit: Carl-Johan Collet, 'Birth of Kalumbila, Africa's Newest Town', Cardigan Row March 16, 2016.



Fig. 112: Sentinel mine site. Credit: Trident Foundation, Community Development Report, Jan-Jun 2017.

The project was re-named in order to distinguish it from the previous ownership. It was called Trident because it included three deposits: Kalumbila (re-named Sentinel), a nickel/cobalt/copper site and Kawako (re-named Enterprise) focussing on nickel/copper. Figures 108, 109, 111 and 112 illustrate some changes which occurred in only a couple of years.

The third site, Kwanga (re-named Intrepid), had radioactive mineralization and base metals and has remained an exploration site. Together the three sites are popularly known as Kalumbila. The site there-by became a 'sister' of Kansanshi Mine, with shared senior management and a close working relationship.

After the take-over KML, now under FQML, undertook an extensive drilling programme, initially at Sentinel, the results of which were published in March 2012. Work on the Enterprise site followed.

The anticipated grade of copper was relatively low i.e. in August 2015 it was reported to be 0.51%, with nickel at 0.63% (total inferred, AIF, 2016).

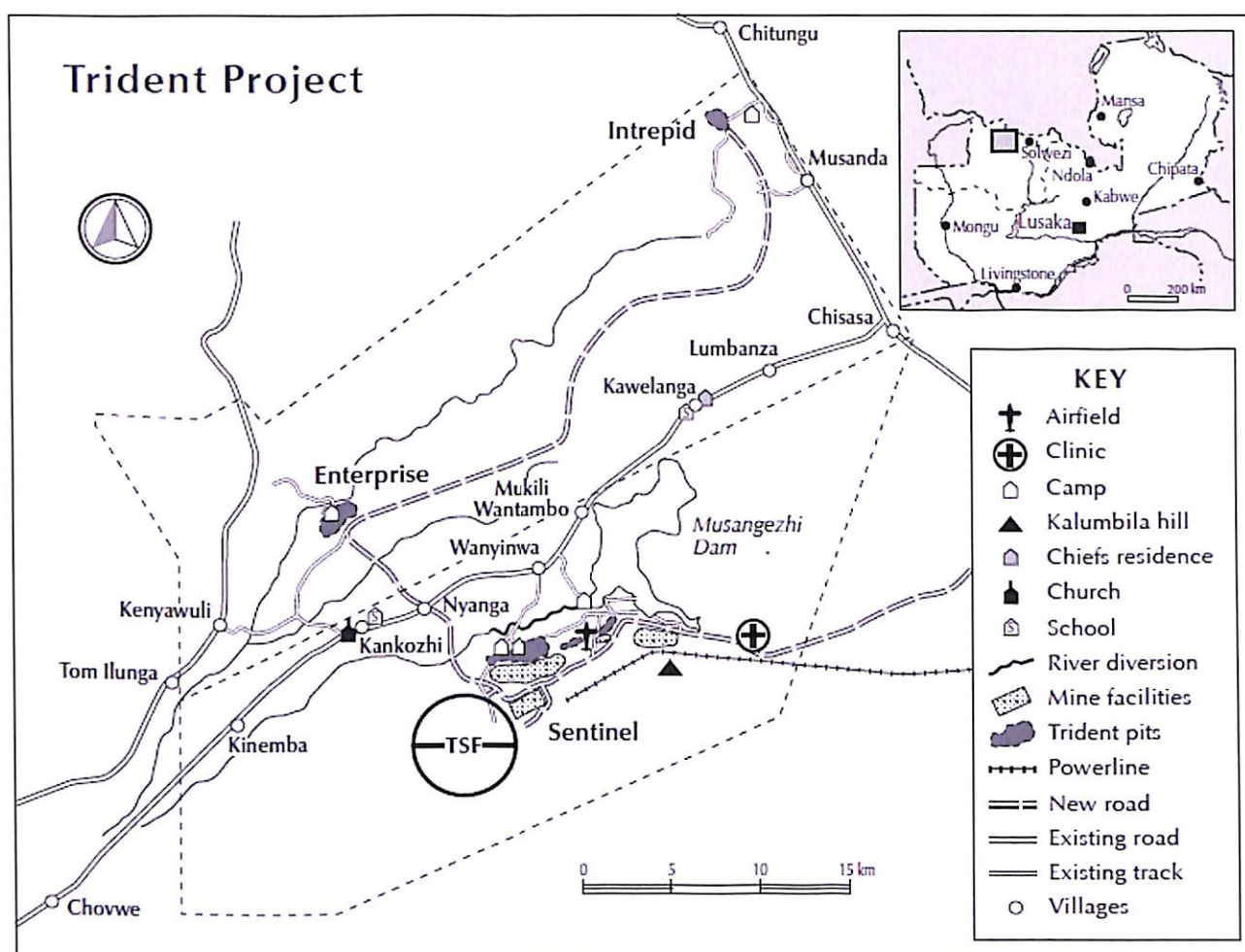
Mining licences totalling 94,722 ha (947km²) were approved in April 2011 (GRZ licence records, 2014). 518km² for surface rights was signed off by the Senior Chief on 14th July 2011. This agreement was later cancelled in February 2013 with the total surface rights area size being reduced to 384.9km² in October 2013 (Record of GRZ/FQML meeting, 15th October 2013).

The licenced area makes up about 7% of the Chiefdom's arable land, while the town area on non-mine land, makes up 1% of the Chiefdom. The MFEZ takes up additional land.

The initial Kalumbila developments focussed on preparations of the Sentinel site, followed later by Enterprise, with many shared facilities. A series of required studies, reports and follow-up actions were undertaken, commencing in 2010 with the original Trident EIA and its report, the EIS. This report was later revised in 2011 to separate out the Sentinel developments from those at Enterprise for which another EIA was undertaken in 2013/14. Because of the large number of homes and farm plots on the mining site a Resettlement Action Plan was drawn up in late 2011 and approved in October 2013. Additional EIAs were undertaken for the Township (EIS February 2012) and the Airport (EIS, 2013/14).

There being no electricity sources in the area a powerline extension from Lumwana to Sentinel was completed around 2014. An additional 330 kV line from Mumbwa arrived about a year later (see Part Three), being very delayed and forcing initial reliance on large generator sets and affecting initial processing capacity. It had been anticipated that a smaller amount of power would be obtained from neighbouring Kabompo Hydro (See Part Three) but that development was delayed for an even longer period and had still not eventuated by 2019.

The mine site was quickly carved out of what had been forests and some farm plots and a scattering of small villages. Remarkably, by 2014 most of the mine facilities were in place, spread over a large area because of the two mine sites, including the plant, administration offices, an extensive road network, large pipelines and the first pit had begun to be excavated (see Map 17). Two rivers were diverted (Muzangezhi and Chisola, see Map. 18), two dams built and a previously existing bush runway was upgraded. The housing and related facilities are described below.



Map 17: Trident (Kalumbila) mine site. Credit: Map 4, Coastal Environmental Services, Sentinel Deposit, Environmental Impact Statement, 2012. Note: the licenced area was later reduced. (Chisasa = Kisasa)



Map 18. Illustrating the river systems located on and around the mine site which lies to the east of the major Kabompo river. Credit: Cut from Figure 1.1: Location of the Sentinel Copper Deposit, in the North West Province, Zambia, CEC, EIS, November 2012, p. 2.

It was envisaged that a MFEZ would cover the town area to attract new businesses and further investment into the district as part of a major push to develop the North West. This plan was despite what had not happened at Lumwana where the MFEZ grand plans came to nought. The developments were part of a government Local Area Plan which was to incorporate the new Kalumbila district headquarters which was declared in August 2015. However, this ended up being situated a few years later at Manyama. The mine's initiative had laid the basis for government to develop this new centre for service provision and economic development. One of the media articles optimistically described it in September 2015 as 'Kalumbila: Aspiring for city status'. However, despite much public interest being shown in opening up the new Kalumbila town outside the mine boundary i.e. open to the public, only three businesses had been willing to take the risk of doing so as at 2014. This was because of the failure of government to make land title available. A Total petrol station, Automated Teller Machines for four banks and a Food Lover's supermarket were the initial developments. The lengthy delays in the provision of land title were reminiscent of the situation which had halted the Kabitaka commercial developments.

Production commenced at Sentinel with the first ore crushing and stockpiling occurring in October 2014, and the first copper concentrate produced in December 2014 and the plant officially being opened on 28th August 2015 by the President. Full production was delayed by the slow progress of the Mumbwa power line in reaching Kalumbila and by the nation-wide power shortages experienced during 2015/16. Developments at Enterprise also commenced, while Intrepid remained an exploration site.

The above information has been compiled from company reports (including FQML Annual Information Forms and EIAs) and GRZ reports, media articles, observations and communications with the company.



Fig.113: Senior Chief Musele on the occasion of the Nkisu Ya Nzambi ceremony. Credit: Zambia Daily Mail, June 2015.

Description of Associated Areas and Mine Impact

Musele Communities

The mine site is situated in the Musele Chiefdomship area under the leadership of Lunda Senior Chief Musele (Fig.113) who was assisted by a number of sub-leaders. No early socio-cultural studies of the Musele chiefdom and their lifestyle were found, unlike for other Lunda communities in the Mwinilunga area, some of whom have been well studied e.g. by Turner, Pritchett and Pesa. The earliest description of local communities appears to be the base-line survey undertaken by World Vision in 1997 (summary published in their 2011 Report) in preparation for what became a thirteen year-long project of multi-sectoral support to the area. It showed that in 1996/7 the Musele community was about two thirds Lunda and one third Kaonde, with a few residents having other affiliations. As with other areas of the North West, the different groups peacefully co-existed and traditions were still strong and overseen by the various levels of traditional authority.

However, the Musele Chiefdomship has had a number of issues with its neighbours, including court cases about border disputes with Mukumbi and about inheritance of the Chief's position. According to historians and others these issues relate to their relatively recent arrival in the North West as part of the many migrations south from the Congo from the 17th century, and to their origins as tribute collectors for Musokantanda in the Congo where the Lunda were and are strong. Consequently, relationships with neighbouring Chiefdoms were not always smooth, and not always for current reasons.

World Vision described how the Musele area communities had ready access to large, sparsely settled forest resources and to dambos, rivers and streams. They largely practised a subsistence, shifting cultivation style of farming with cassava being the staple, but with maize increasingly being grown. Other crops included tobacco, beans, and sweet potato, with vegetables grown in dambo areas. The most common stock kept were chickens and goats, with sheep also mentioned (but not cattle). Most farming plots were under 5ha in size.

The lack of support for agriculture and marketing was considered to be a major problem and there were also issues related to health, education and access to clean water.

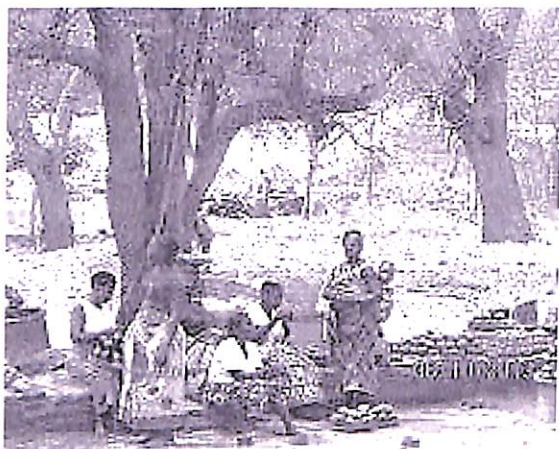


Fig.114: Musele area during the early years of mine developments. (L) Credit: PLAAS, Research Report 50, 2015. Fig.115: (R) Credit: Derrick Sinjela, August 18th, no year but c 2013.

As with other communities in the North West, membership and their locations were not static. Consequently, few had lived in their current location for more than four decades and many for far less according to a survey reported in the EIS Addendum (Kalumbila 2012, p.145). Families were mostly scattered in small hamlets along the edges of two unsealed roads leading off the T5, with larger groupings around the Senior Chief's palace and at Kisasa on the edge of the T5 (Kalumbila, 2010). Small markets or shops were set up in most areas (Figures 114 and 115). The majority of the approximately 30,000 Musele population live to the south of the T5. The northern part was being reported in the Chitungu road study (FQML, 2007) as being sparsely settled and included extensive, largely un-liveable swamp land up to the Congo border (the Jiwundu swamp).

Kiwara also provided a brief description in its Project Brief (Kiwara, 2009) saying that it had previously been a Game Management Area but that no [large] game had been seen in the area for a generation.¹⁸ It also noted that there were already some signs of modernization with a few homes being made of baked brick with metal roofs and that some contained modern household items. Kiwara also noted that there was 'no evidence currently of inward migration from other areas', and that, to the contrary, youth (presumably mostly males) were more likely move away to large towns. Also, even in the pre-large-scale mining era, social problems were reported to exist, including alcohol and marijuana abuse, HIV and other STIs, exchanges for sex and early pregnancies.

Kiwara reported too that the area was well wooded and that there may have been some harvesting of hardwoods in earlier years. It added that the locals supplanted their basic cultivation methods by foraging in the forests and by bee keeping. Curiously, it also noted that mining was not expected 'to have a major overall ecological impact' because of the extent of surrounding forests – but this seems to have been a somewhat naive point of view.

Despite World Vision having invested about US\$20m for the health, education and agriculture sectors over the thirteen years most people were still very dis-advantaged in the Musele area. Just why this was so is unclear and could usefully have been investigated by KML as preparation for their own activities. By 2010 the company health team reported that their situation was poor and that they had difficulty accessing health and education services. People still had very low education levels and suffered from many health challenges.

¹⁸ Although it may not have been talking about exactly the same area.

They also had difficulty in obtaining agricultural extension services and accessing markets for their produce because of the state of the few roads and the distances to major centres. The annexes of the EIS reports contained extensive records of comments made during the community consultations which are particularly revealing about local attitudes and concerns about the forthcoming mine.

It is notable that, despite their relative isolation, the Musele people were familiar with some aspects of mining because exploration teams had been investigating the region off and on over many decades. About forty individuals had even obtained short-term, casual employment with the crews over the years and many were familiar with the low flying aerial surveillance planes.

But such activities had been confusing and disillusioning for the communities, especially seeing drilling samples being taken away and the crews not being able to say anything about the prospects. Understandably, the people were not able to comprehend the long drawn out processes involved in having a deposit confirmed, financed and approved. The Senior Chief indicated during the 2011 EIA process how frustrating it had been, saying that he felt '... these people had been joking with their activities...'. He wanted to see development in his area and was hoping that this company's intentions were for real.

Another aspect of this familiarity with the world of mining was reported by World Vision that mining developments elsewhere in the district were affecting population dynamics, with some people migrating to those areas in the hope of mine jobs, albeit unskilled because of their low levels of relevant experience. (World Vision, 2011). A short World Vision Australia article (2009) somewhat surprisingly given the stage developments were at, described how the nearby presence of Lumwana had 'altered the social landscape in Musele'.

It also quoted government officials as saying that Lumwana '... had employed many of Musele's young men, creating labour shortages in farming areas.' But it is possible that the extent of this development was exaggerated given the number of eager applicants from the three priority areas. The labour table from Lumwana (Table 3) given in this volume included reference to a fourth preference for locals (i.e. additional to the priority groups) but the numbers were very small so the outmigration from Musele may have been short-lived, or some may have settled into Manyama, at least until Kalumbila developments got underway.

The Senior Chief had some previous experience in dealing with companies. In 2007 his representative participated in the EIA process for the proposed Chitungu Road upgrading development. This road led north from the T5 through the northern part of Musele territory to the Congo border, but this project never eventuated. According to the EIA report his spokesperson had proposed that royalties be paid for the use of the road, that half should be used for community projects and half go to the Senior Chief to meet his needs.

It was also proposed that he be given a vehicle. The idea of royalties for Chiefdoms had been raised earlier in 2005 when the three Lumwana Chiefs met with Equinox in Lusaka to decide on their agreement. Senior Chief Musele was also involved in discussions around 2010 + about the Kabompo Hydro development as it touched the forested areas of the chiefdom on its western side (Kabompo, 2013).



Fig.116: (L) Stakeholder meeting, Wanyinwa, p.13. Fig.117: (R) Focus group discussion, Musele village p.139. Credit: both from CES, Sentinel EIS, Nov. 2012.

Initial Relationship with the Mining Company

The company had, for administrative purposes, initially established a bush camp, as seen in Figure 108. It was from this temporary base that social matters were addressed commencing in 2010, initially focussing on the EIA data collection and consultations (Fig. 116, 117 and 119) and compensation processes. Exclusion zones were established (Fig. 118) and with much consultation, those residents living and/or farming in the path of the developments were prepared for moving, including having their assets assessed. Resettlement areas were identified, in consultation with the community, one by the proposed town and the other twenty kms away from Musele Central in an area already previously used by farmers. Initially causing much concern, a cemetery with about 300 graves had to be carefully relocated, and compensation was paid out to the relatives.

Given the long history of nothing resulting from the many exploration efforts, the 2010 start-up by KML was therefore very exciting but also nerve-wracking for the communities.

As can be seen from the comments made at the many and different types of community consultations), there was widespread enthusiasm about the opening of the mine, as can be seen from the Sentinel EIS annexes for records of comments (Kalumbila 2012a). Figures 116 and 117 illustrate that separate meetings were held for men and women at times to ensure that the voices of both genders were heard. As in the Kansanshi and Lumwana areas, there were high expectations that mining would bring modern 'development' to the area and that they were going to benefit significantly from its presence. These expectations included personal financial benefits and access to jobs, as well as by being provided with good houses, better health services, schools, water supplies, roads and markets.

There was a strong feeling of pride that they too were about to participate in the much vaunted 'development' which had occurred in the other areas and that they were going to join 'the modern world' at long last. Such a high level of optimism was somewhat surprising given that the local people would have, by 2011, been well aware of the many negative community experiences which had occurred in the other two large-scale mine areas.

While there was much excitement about the forthcoming development, there were equally pervasive feelings of anxiety, fear and distrust of the company, especially about the loss of and damage to their land which was their 'lifesaver'.



Fig. 118: (L) Sign stating the moratorium on building on the mine site dated 2011, warning that the land was being taken over by the mine and that no planting or building was to take place from then on, 2012. (R) Fig.119: Assisted by a translator, the then EIA team member Garth Lappeman endeavours to explain the forthcoming changes to a community meeting with the help of a map, 2011. Credit: KML

These fears were particularly held by the families who were living and or farming on what would become the main part of the mining area and who were going to have to be resettled. Table Four summarises their negative and positive concerns.

Other concerns included interruptions to their farming cycle and hence food supply and also the risk of pollution. There was also fear that better educated outsiders would take most of the jobs and that there would be corruption by labour recruiters, as there had been at the other mines sites. As at Lumwana there was fear about radiation being present (which was true in regard to the Intrepid site) and of being ‘sandwiched’ between the mine and the nearby Kabompo Hydro developments (but they were separated by the Bushingwe Protected Forest). One suspicious community member even suggested that the company might be ‘a wolf in sheep’s clothing’ (quotes from the 2012 Sentinel EIS).

They also expressed fears about mining taxes not coming back to their communities but being used elsewhere in the country, and that they wouldn’t receive adequate compensation or CSR. They also feared that the mining town would be a closed enclave as at Lumwana. With mining benefits being known to accrue to Chiefs, there was an underlying tension amongst the community about whether the Senior Chief had received a substantial personal payment after he had signed surface rights approval in 2011. In fact, he did receive a consideration, as was customary and also a commitment for substantial funds to be allocated to community developments in the coming years, including for infrastructure.

Confusion also arose as local opportunists began to move onto the mine site, quickly throwing up structures in order to also try and access compensation, (118 such structures were documented). Others were job seekers from outside the area who settled mostly around Kisasa on the T5. People living outside the immediate area also expressed concerns about the possibility of negative impact from mining.

Local communities were therefore full of nervous excitement and anticipation around 2010-2012 as they participated in the numerous impact surveys with their many interviews and focus group discussions. Their main focus was on how the company would benefit them - as the traditional landowners. But they mis-understood the purpose of the EIA process, thinking it was about compensation, with consequent frustration felt when it was discovered that this was not so. Much more detail about the multitude of consultations and other meetings, including with government departments, can be found in the 2012 Sentinel EIS.

A comment from a community member recorded during the 2012 EIA process illustrated how people recognized that the province had long been disadvantaged and that they consequently felt inferior. He said that 'The NWP is regarded as a door-mat and the people here regarded as mud.' (Kalumbila, 2012a, p. 216,). Consequently, the coming of a big mine had considerable significance as it was expected to greatly improve their position in Zambian society.

On a similar theme, an important contribution was made during the same process by Mr Kapumba, the then Mayor of Solwezi, who originally came from the area. He was keen to share his experiences, basing his comments on the Kansanshi experience (See Box 6).

BOX 3: Extract from the Mayor of Solwezi's advice to local residents during the first community consultation, September 2010.

"... Today marks a new era to Senior Chief Musele's area thanks to the investors... so what is this mine all about? This mine is a blessing and the NWPP is becoming known as the second Copperbelt province. The government wants mines to be opened ... so that people can get jobs, send their children to school and these children can become people that are recognized. What can be wrong with a project that proposes to employ 800-1000 people? ..."

"The aim of the company is to make a profit but they are required to meet certain conditions e.g. pay taxes to government and to pay Council rates. The income from those taxes and rates are what goes towards the development of schools, roads, hospitals etc. At the same time the company has a corporate responsibility. Don't be worried, my experience is that the company has contributed to a very large number of schools ... and to Solwezi General Hospital ..."

"I must warn you of one thing though. When a mine comes you can also expect negative things...[paraphrased]. Land fenced off, people settling here from other provinces, you will be tempted to steal from the company, the police will be closer, criminals jailed, some shot at. ... Those employed "do not spend your salary on beer and women. This will kill you." "Send your children to school so they can become employed". [paraphrasing] "There will be issues with those contractors coming from the Copperbelt ..."

Source: Coastal and Environmental Services, Final Stakeholder's Engagement report – February, 2011, Sentinel EIS, 2012, p. 234-5.

Table 4 summarizes what the communities expressed were the pluses and minuses about the forthcoming mine. It indicates, communities had mixed feelings about the mine developments but overall wanted such a development on their land, despite the negatives – just as other mine communities had felt.



TABLE 4: THE PLUSES AND MINUSES OF HAVING A MINE DEVELOPMENT ACCORDING TO KALUMBILA COMMUNITIES

Minuses	Pluses
<p>Loss of good farm land, less desirable substitutes</p> <p>Restricted access to forests/streams (nutritional and traditional skills implications), and loss of freedom</p> <p>Villages broken up to varying extents</p> <p>Much uncertainty /concern/confusion/fear</p> <p>Existing tensions aggravated</p> <p>Changing values eg cash v custom</p> <p>Increased inequities, elites and national govt. holding power</p> <p>Unrealistic expectations</p> <p>Stiff Competition for jobs and business opportunities from better skilled influx</p> <p>Crowded schools and clinics</p> <p>Changing nutrition (+/-)</p> <p>Increased risk of disease and accidents from vehicles</p> <p>Many strangers around</p> <p>Increased theft</p> <p>Increased marriage disturbances</p> <p>Increased alcohol abuse</p> <p>Much disappointment/anger/jealousy</p> <p>Threat of pollution</p>	<p>Jobs with mine (maybe) and therefore access to cash – and modern life</p> <p>Training opportunities</p> <p>Compensation - cash</p> <p>Better houses</p> <p>Help with agriculture and business</p> <p>More economic opportunities outside mine</p> <p>Increased market for produce</p> <p>Better schools and clinics</p> <p>More water supplies</p> <p>Better roads</p> <p>Excitement, more 'life' going on</p> <p>Becoming better connected to rest of NWP</p> <p>Feeling important for first time – 'development' has finally arrived</p>

Sources: Compiled by the author from the points raised in the EIAs and the RAP.



Fig.120: Mr Kampelembe's house demolished to make way for the mine but with a modern replacement to move into. Credit: Jack Zimba's blog spot, 2014.

The Delays and Resulting Problems – 2012-2013

Around 2011/12 people living on the proposed mine site area were relocated and their houses and a few community buildings were demolished (one example shown at Fig.120). Not surprisingly, some houses owners were very disturbed, despite clear explanations as to why this was being done, and that they would receive new, and better, houses. This demolition was not done out of blatant disrespect but to ensure that no one stayed on in what was fast becoming a very busy and potentially dangerous construction site. Some people resisted this process for a while, not appreciating that the land had been sold and the consequent inevitability, and scale, of developments. Despite many company efforts to educate communities it wasn't easy for residents to imagine how the land use was going to change and it seemed that traditional authorities had not managed to effectively guide them about these sensitive matters.

Keenly awaiting their compensation packages members of the local communities soon became very frustrated and angry by what turned out to be a very long wait for the necessary government approval for the EIS reports and then the Resettlement Action Plan (RAP). The latter had been submitted in September 2011 but wasn't approved until October 2013, only after which the relocations could be actioned. It was a very difficult waiting period for all concerned, with much uncertainty being created about whether to continue farming or not, and with associated concerns about food security. Much blame was attached to the company which was close-by, unlike the government officials who were rarely present to hear their concerns. Being closest to the communities the company social team was on the receiving end for much of the complaints when in fact the responsibilities were actually held by higher level company management and government officials. It was very challenging for the social staff to cope during this stressful period although they did so by holding many dozens of large, small and individual meetings to discuss the various issues and provided updates (all of which were documented). Compensation payments were brought forward in order to help calm the situation. But essentially the matters were out of their hands and being dealt with in Lusaka.

Other players during this period were the well-intentioned NGOs which became very active in trying to support the communities, and also the media. However, as discussed below, their contributions were not always helpful in ensuring a clear understanding of the situation.

Contributing Factors

There were a number of issues which contributed to the lengthy delays. The following provides a simplified version of them and an amplification of the underlying issues as seen by the Musele Task Force (and the NGOs which supported it).

Unfortunately, the approval processes for the various EISs and the RAP happened to coincide with the outcry about the legalities of the size of land which had been approved by government in 2010 and signed off by the Senior Chief in July 2011. The issues related to the Task Force and NGOs considering that the amount of land granted was excessive to actual mining needs and therefore unjustified. It is not clear how they had the expertise to make such a technical judgement and one would have thought it was geological expertise in ZEMA and the Ministry of Mines which would best be able to make this decision. The company itself argued that a large area was required because of the low mineral grades present and their wide-spread nature. It is also logical to think that they would not want to be short of land later if more deposits were found in the area as exploration progressed.

Another issue was that the company had planned to include a large-scale farming project outside the mine site. It was to be run by SilverStreet Capital, an international company focussed on large scale commercial farming businesses using a 'Hub-Out Growers Model'. This proposal was later rejected by government as being inappropriate. This was so even though it had aimed to promote agriculture and would have been a contribution to local employment and related business developments, in line with government objectives. However, not only would it have taken up more local land but SilverStreet was a foreign company and this fact may have been the underlying issue, based on the fear that it would out-compete potential local business initiatives.

Matters were further complicated by the company's plans continuing to evolve, including the location of the tailings storage facility and adding in a river diversion and another dam (Chisola), with implications for the environment and also some communities. Various claims were made by NGOs and publicised in the press about the supposed irregularities, contributing to heightened tensions between all players. One example was that the RAP had not been seen by the communities and their representatives - which was blatantly untrue. It had in fact been made available at the Senior Chief's palace, the Solwezi Council offices and one of the local schools (correspondence from ZEMA and KML).

The fast pace at which the company management wanted/needed to work at this very crucial time in mine establishment also aggravated relationships with both government and community representatives. It also made things challenging for the Social team who needed to work slowly but surely through the processes and not be rushed.

By the same token, on the government's side it had been responsible for approving the large-scale mining licences back in early 2010, seemingly not concerned about their total size. This fact seemed to have been over-looked when later the NGOs and the Task Force blamed the company for the extent of the licenced area. The surface rights area was smaller than the total licenced area and this may not have been understood. Prospecting rights covered a larger area (clarification from ZEMA). This was also the period when copper prices were reaching an all-time high and the interest in obtaining mining licences nationwide was out of control. Much confusion resulted and Cadastre staff in Lusaka were heavily over-worked, with large scale mining presumably taking precedence over small licences.

In addition, there were many cases of abuse of the system occurring and many licence-related matters ended up in court. There was evidence too, during this period, of what looked like petty and un-justified comments and demands being made by government regarding some company proposals. These included aspects of the EISs and the failure to initially approve the timber factory despite its many obvious advantages. Changes to the resettlement housing plans after some had been built was yet another example. Having to address these interventions made for much more work and diverted attention away from helping communities settle into the new arrangements.

It was also a very demanding time politically, with the new Patriotic Front government in power from September 2011. Consequently, there many changes occurring within the elite in Lusaka. For example, during this period four different Mining Ministers were appointed between 2011-15, and at the provincial level, there were a series of changes in Deputy Minister and Permanent Secretary positions. Such changes may well have contributed to the delays in resolving the perceived issues and obtaining the necessary approvals.

It was not an ideal time for calm and efficient consideration of the requirements for what was to become Zambia's biggest mine. Also, while the licence and other issues may have needed resolving, the lives of those needing to be resettled were placed in limbo at a very critical time, a precarious situation which government did not seemed to have appreciated, or cared about.

There were developments: As part of the effort to resolve the licence size and other issues the new government put a freeze on agreements with the company until an investigation was completed. As a result of the freeze, for example, the Town EIS took eighteen months and the RAP just over two years. Consequently, the resettlement related activities were prevented from being implemented in good time.

Eventually government created a ministerial sub-committee which met in Solwezi in February 2013 to investigate the issues. It reported back to Lusaka, recommending that the agreement signed by the Senior Chief be cancelled because he had done so for an amount of land exceeding his authority. In May 2013 government placed an Environmental Protection Order on the Chisola dam project which significantly affected the company's ability to progress the mine's infrastructure and would have resulted in the lay-off of 500 employees. The threat of such job losses caused a public outcry, but no business employs when there is no work to be done.

It wasn't until October 2013 that matters were finally resolved during a joint company/government meeting. Agreement was reached on various issues, including reducing the total size of the licenced area from 518 to 384.9km². The protection order was then lifted, the resettlement plan was approved and mine developments were resumed. Resettlement processes were then able to proceed - with most of the houses already having been built during the hiatus and compensation having been paid out.

This short version of events omits the details of the dragged-out negotiations and game playing which went on during this period, behaviour which hardly represents a business-friendly approach to mining governance, nor much protection of community rights. However, other problems then arose. Despite the promises, arrangements by the Senior Chief and government for conversion of customary land to free-hold title for the town and town housing areas continued to be delayed, as was the making of that land available.

This was despite the problems that lack of title had caused to the development of the MFEZ because business people required that surety before setting up. Again, such a situation was hardly conducive to business promotion, let alone to actively promoting home ownership. Remarkably, these matters remained outstanding into 2018, suggesting that some ulterior motives were at play.

Despite resettlement finally proceeding, the tensions and un-certainties which had riddled the local communities continued. This can be seen in the antagonistic tone of many of the comments from both government and community representatives recorded during the Enterprise EIA meetings in 2014 (Kalumbila, 2014b). It didn't help that some elements were still actively stirring up negative feelings at this time with rumour mongering and false information being circulated – and much distrust being created. Tempers were easily inflamed in such an atmosphere and some visiting government officials were even physically threatened and chased away during this period. A visiting NGO representative even felt compelled to advise the people to calm down.

It was far from being a smooth start to the new mine, or an easy adjustment for local communities to their changing world - despite the multiple efforts of the social team to address community needs and soften the shock of the changes. The capacity and political will of government to support and ease the processes did not seem to be in evidence.

However, despite all of the issues arising during this initial period, it was notable that no one, including the Senior Chief, demanded that the mining developments be cancelled.

The Role of NGOs and Media

The Kalumbila developments attracted greater media publicity than did the other two big mines, as well as much attention from NGOs and to a lesser extent from researchers. NGOs interacted closely with parts of the Musele community. Their activities began to consolidate during 2012 and increased over the next two years. They provided valuable advocacy support and legal advice to the Musele Taskforce and, along with the media, helped to publicise what they saw as being the issues. The lead organizations involved were Action Aid Zambia, the Legal Resource Centre (South Africa) (LRC) and to a lesser extent, the Council of Churches, Caritas Solwezi, and Greenpeace. World Vision, which was very familiar with the local communities and newcomers to the area, contributed to the initial community training. In addition, the media and about a dozen researchers also wrote about the issues.

Unfortunately, while community empowerment should be a positive achievement, especially in what could be seen as a *David and Goliath* contest, the reports were often inaccurate and simplistic. They also addressed issues in an overly emotive manner, thereby fanning much negative publicity, including, on occasion, in the international media. Such reporting helped to confuse, and at least partly mis-represent and exaggerate the situation and to simplify what were complex issues with multiple causes. While there were some genuine issues to raise there was an over-reliance on the opinions of only a few people and a lack of recognition of the underlying political tensions, including those related to the non-representative nature of the Taskforce and the non-cohesive nature of the communities. It was already a difficult time because of the many problems described earlier and the embers of discontent were only too easily fanned by the presence of naïve outsiders who were easily misled.

It was apparent that at least some NGOs jumped to the conclusion that everything the company did was negative and failed to distinguish between the different parties and the different types of issues involved (legal, management and social), and who was responsible for what aspect i.e. government (national and local), the company (management or social department), or the Senior Chief, the Taskforce and the various communities. Accusations that the relocation arrangements were not being properly managed by the social team were inaccurate and unfair, with the real issues and delays lying largely at the national level.

Many of the articles were un-fairly damaging to the company's reputation, including on international sites – some so damning that they risked charges of defamation. Naive investigators coming in from the outside tended to be negatively biased in their thinking. They were easily hoodwinked about the true nature of many of the problems. They failed to understand that just as mining companies are not always *bad guys*, community members, governments and traditional authorities are not always *good guys*. These episodes, and others from elsewhere, contributed to inspiring this author to produce a paper on the subject of biased investigations and *fake news* being spread (O'Callaghan, 2019).

There was also an important point about the appropriateness of the timing of the NGO campaigns – for, as District Commissioner Likando was reported to have told Action Aid in 2013 (Carlucci, 2013). 'Most of what we are saying here is water under the bridge.' i.e. the reality was that the mine development was far too advanced to be stopped now, and that their campaigns were far too late to be fully effective.

Another point which is obvious from flying over it or looking at a map and at the population density figures, that shortage of land in the Musele and surrounding areas was not an issue if some access is allowed to the surrounding Game Management and Protected Forest Areas or being able to settle further to the east. Neither was an issue to have to move, as that has been a long-standing traditional practice in the area. These facts seem to have been conveniently ignored by those making a fuss - as they did regarding the benefits which had accrued such as mine site jobs to which many local people had access, and greatly appreciated, not to forget the small business opportunities which were now available. It is apparent that there were other reasons behind the many negativities being publicised.

The NGO assistance was positive in regard to selected residents being empowered to know their rights and how to advocate for them. By the same token that power was mis-used on occasions. On the side of government and the company the need to rush to have the licences approved and the mine started (for whatever reasons), possible weaknesses in the original approval processes, along with the changes in plans which later occurred, contributed to the resulting difficulties. However, the handling of the resulting issues by government was hardly effective or efficient and suggested that much game playing was going on.

The Role of the Musele Nkisu Task Force and NGOs

A feature of this difficult period was the very active role played by the Musele Nkisu Task Force. Formed by the Musele 'royal establishment' in 2012 and largely made up of family members, its demands were initially addressed in a document entitled *Proposals on the Development of the Kalumbila (Trident) Mine* (Musele, 2013).

The document was prepared with the help of NGOs, including with legal advice from the LRC-funded lawyer for six months to work with the Task Force.

It was essentially requesting 'responsible alienation of land' and the right to the '... utilization of land for the sake of both present and future generations' – both of which sound like reasonable requests. However, the range of demands put forward were very mixed in their significance and reasonableness: some were major challenges to national control over mining matters, others were normal procedural matters which were already being addressed to varying extents such as the provision of compensation and two were reasonable, like keeping Intrepid site matters separate from the others because of the radiation issues. However, a larger number were quite unrealistic and reflected naivety or even ignorance, such as those demanding that the land allocation to the company be restricted to a certain theoretical size (which in fact should depend on the mineralization), that nobody be resettled and that there be open access to the site. However, they also made the reasonable point that the size should be no more than was required (a point which sort of contradicted their theoretical figure).

But their major demands were significant i.e. that there be:

- Local ownership of sub-surface rights
- Sub-leasing of land by the local community to investors
- A percentage of the company shares go to the local community
- Local representation on the mine board

These demands were important challenges to existing national land and mining legislation and their relationship to customary land ownership and community rights - and they were not specific to Kalumbila. Although aspects of these issues have come up regularly at Alternative Indaba's (see Part 6) this was possibly the first time in the country that they had been raised in such a formal fashion. This aspect of the demands could in fact be interpreted as Kalumbila being a test case for mining communities in Zambia (and indeed, elsewhere) as they challenged long-standing arrangements which firmly vested power and control at the national level and left mining communities virtually powerless. But their case was weakened by the inaccuracies and falsehoods used in arguing their case, and their poor timing.

Despite the Task Force's strong activism, their major concerns never went to court, and there was never a nation-wide campaign including other mine communities which would have increased the momentum. Not even the mine royalty issue was picked up even though such arrangements exist in some countries e.g. Papua New Guinea and with the Bafokeng in South Africa (albeit not without their problems). Lack of substantial funding was obviously a constraint to taking the issues forward – a problem all NGOs face with trying to obtain mining justice, illustrating just how uneven the playing field is.

Consequently, these important issues never gained traction – while to some extent the Kalumbila-specific ones did.

But it was obvious that national government was never going to allow local interests to over-rule their own access to mine income without a concerted fight. It is not known what the role of the local MP was during this period.

The laws being questioned have their roots back in the colonial days when the British South Africa Company (BSAC) entered into treaties over land with local Chiefs, later followed by the adoption of British law regarding mining rights which was biased towards benefitting national governments and companies and minimalizing the rights of land owners. The implications of such legislation are still far reaching in many countries although some now specify a certain percentage to be returned to local communities.

Zambia even had a proviso in previous mining legislation under Section 136 which required that a certain percentage of mining taxes to be allocated back to the host communities, although that was never specifically implemented. In addition, while CSR contributions are now normal practice, they are still, not legislated, so voluntary, and it is not specified what percentage of mine profits they should be.

Another issue was that despite some having mining impact related experience, visiting NGOs and also researchers, were not always able to fully understand local politics and the underlying situation, including the considerable power plays which were going on. The communities were not cohesive, the representativeness of the Task Force was questionable and there were at times, incidents of threats of violence and coercion, including of witchcraft, within and outside the communities, which influenced responses to visiting enquirers.

But even if there were constraints, it was apparent that the Musele Task Force became, as one experienced NGO representative said, '... the best organized community group he had ever worked with' because of the advocacy training and the legal advice they received. It demonstrated the potential of educating communities (or at least their leaders) to undertake advocacy, collect evidence, document and analyse information and know something about the law and use of the media – and most of all, being organized and strategic in their approaches. However, in this case, there were weaknesses in their use of such skills which undermined their credibility and did their cause a dis-service. They also risked falsely blackening the reputation of the company.

In July 2014 another substantive report was produced by the Task Force about several issues entitled *Kalumbila Land Grab, the Unfolding Drama of Greed, Economic Sabotage, Cultural Aggression and Injustice*. (Musele, 2014). This report addressed the same issues in considerable detail but was much more emotive in its tone, often using exaggerated, inflammatory and potentially libellous language about both the company and government. Interestingly, it clearly identified the latter, not the former, as being the root of the problems. But it was also obviously biased in the way it underplayed the role of other key players.

One issue they dealt with in some detail was the size of the licenced area compared to the size of the chiefdom - which raises the question of whether that is relevant given that a mining licence is, or should be, dependent on the mineralization. The report ignored the mineralization factor, used some odd comparisons and failed to look at the size of other existing Zambian mining licences. The question of what percentage of a chiefdom a mine should be allowed to take up is also spurious because chiefdoms vary considerably in size e.g. very large Kasempa compared to the very small Kalunga, and a mining deposit is not defined by such colonially described boundaries.

In fact, a number of North Western licences include more than one Chiefdom and even more than one province - as they presumably also do in other provinces. Also, people are always able to move freely between chiefdoms as clearly evidenced by the mixed nature of many rural communities and the extent of urbanization over the past century.

The presence of a community living on and around a potential site and whether a community wants such a development should be an important point to be considered by ZEMA when assessing a licence proposal. But the attraction of potential compensation and jobs usually over-rules any concerns a community might have and they themselves are very unlikely to say no to such an economic development.

Nor is government likely to accept a 'no' if a prospect is likely to be very profitable and given that the President has the power to over-rule local decisions 'in the national interest'. Also, government has had a long-standing practice of relocating communities, for a variety of reasons, so resettlement of communities was not an unusual event in Zambia. That is not to say that relocation with all its upheaval, is desirable but to note that it is not the end of the world, especially in communities which are highly mobile anyway.

Referring to the tense atmosphere prevailing with-in the communities the 2014 report also went as far as taking on a threatening note, hinting that matters could '... spiral out of control' i.e. presumably meaning into violence, if the issues were not attended to. Interestingly no such an acceleration ever resulted. But the report also, correctly, pointed to Zambia's policies and laws as being root causes of the problems and insinuated that corruption within government was involved and also that KML had blatantly ignored regulations in its rush to get the project into production (without concrete evidence).

The timing of the second report in mid-2014 would appear to indicate that the Task Force and the NGOs were fed up with not having the concerns adequately dealt with in 2013 and were very frustrated. By using such strong language, they perhaps hoped to draw attention yet again to the issues, this time more frankly than the previous report had done. It is appreciated that the Task Force was very frustrated by government's failure to address the issues raised but it was not clear if in fact the issues were all genuine community well-being oriented or more of a self-serving nature.

However, the value of such an inflammatory approach was doubtful - apart from demonstrating to government the extent of their anger. Just how widely circulated these reports were and what government's reaction to them is not known - except what can be inferred from government responses in 2013 - although the Cabinet Sub-Committee was formed a month before the 2013 report was published.

A detailed and frank story of what really went on during this period remains to be told, but, given the underlying vested interests and the extent of misinformation, this is unlikely to happen.¹⁹

¹⁹ Note: This section has not been fully referenced because there were so many different sources, both written and personal communications and because of the sensitivities some sources had to be treated as confidential.

Resettlement, Compensation and Post Resettlement

A major issue for the company was that many people's homes and farming plots were situated right in the centre of and around the planned mine area, and some remained in very close proximity. Their situation was problematic, especially if the mine needed to expand in the future, a point which was mentioned in the RAP. Some other facilities were also to be lost, including burial plots and infrastructure such as schools and clinics and their staff housing, water points, small businesses, markets and churches (some having been built earlier by World Vision). There was also some loss of access to bushland and rivers/streams – which was significant for local people who seasonally used these natural resources, although there were plenty further afield. However, as can be seen from Map 19, much of the local land was either Game Management Area or Protected Forest (but which in the case of Lumwana had been reduced in area to cater for that mine).

Complicating the resettlement processes was opportunism. The company documented (correspondence with photographic evidence) that about 20% of those needing to be resettled were not original residents, but people who had moved in and quickly thrown up structures so as to be eligible for compensation. Others also ignored the moratorium set and kept on or started farming. Their access to local land was at times reported to be 'facilitated' by remuneration to the traditional authority, despite such practices being illegal. Any such opportunities tend to be quickly seized in such a cash-poor society, and also occurred at the other mine sites.

Eventually 597 households were identified as needing to be relocated because the land on which their houses and plots lay were to be taken up by the mine, as well as a few farm plots in the planned township area. The amount of farmland affected totalled 2,820 ha (some plots lying fallow) belonging to 1,250 farmers. This included 540 who farmed within the mine area but lived elsewhere, such as at Kisasa or Chitunga some distance away near the T5. They weren't necessarily happy with new farming land even further away at Shinengene, about 20 kms to the south on government land even though it had been a traditional farming area to which people were accustomed to travelling, albeit by a more direct route through the bush.

Other land was eventually identified by the Chief and government but not until around 2016 when it was finally de-gazetted from customary land and converted to state land. This land was closer to the T5 on the eastern side of the mine access road and some of its jurisdiction was under dispute with neighbouring Chief Mukumbi. However, the land most suitable for farming turned out to have been reserved for business developments rather than housing and farmland and what was left over was largely an unsuitable dambo area. When some blocks were eventually allocated they were given to a few of the 'elite' and not to those requiring resettlement, indicating nefarious practices going on and a lack of caring about the needs of ordinary people. The issues were still unresolved as at 2018.

Despite the social team following required procedures, many concerns were raised about the relocations and often exaggerated by local people. Such attitudes were easily fanned by the lengthy delays in government approving the RAP and their anxieties about receiving compensation and new farming land. How compensation rates were determined was especially a hotly debated topic.

The 2011 statement which appears in Box 4 is quoted in full because it *lays down the law* - puts to rest (or should do so) the concerns often expressed by communities and played up by NGOs and others, that the agricultural rates used to determine compensation were not fairly determined, and the fault of the company.

BOX 4: DETERMINATION OF KALUMBILA COMPENSATION RATES

'Charles Sondashi (then Provincial Agricultural Officer of the Ministry of Agriculture and Cooperatives. (MACO) presented the process of determination of crop compensation rates:

MACO was involved from day one in determining crop compensation rates. We have very specific procedures we follow to generate crop compensation rates. During this exercise, we went even further, with the help of KML, to get in an independent consultant to verify crop compensation rates. We scrutinized the CVs of consultants and ensured that we approved the best available.

A literature review was done which involved our research station. Physical determination of crop yields and market prices were performed in local areas. Average historic yield data from the past decade was used as well. The yields that were used to determine the compensation rates were very high yields. If you scrutinize the yields used you will see that they are much higher than what an average farmer would get in Musele. Rates were differentiated by crop type and specific yields were determined for each crop type. Weed control, fertilizers, labour and land development fixed cost including land clearing, primary cultivation expenditure, ploughing and harrowing were included as applicable in the various rates. Cassava yields and rates varied according to year due to changes in yield. Grand compensation rates per hectare were determined based on all these considerations.

In most cases the rates were increased from the previous season's rates. We are very satisfied with the study and very comfortable with the rates and they are approved by the Ministry of Agriculture and Cooperatives. They have been adopted by the Office of the District Commissioner and Permanent Secretary and will be applied to other developers in the area, not only KML.

- These rates were presented to the chief and he responded positively to them. They have also been presented to other chiefs in the area.
- FQM, in collaboration with our extension officer, surveyed all the affected farms where detailed information was captured, using GPS's to obtain the most accurate size of the farm.'

Ref: (Kalumbila, 2011). Minutes of general update and mobilisation of resettlement-related activities. Meeting, 24th Aug. 2011, pt. 3. Sentinel project,

Despite this definitive statement, confusion was reported to have been created in the community by the presentation of monthly market bulletins which showed different rates from those in the Ministry list, but the reason for the divergence was explained. It was also explained that it was up to the Chief to clarify such concerns. Confusion was also due to the myth that rates would be discussed and debated – when in fact they were to be worked out logically by MACO and there was no room for negotiation (which would make for a chaotic process if that occurred). As in all relocations there were many complaints about the rates not being adequate, and these complaints were often mistakenly focussed on the company when they were set by the MACO, as described above. In fact, a comparison undertaken by the company showed that the total package provided by the company was the best for a number of mines in the country (KML data collected, 2014).

The World Vision representative was even reported, somewhat surprisingly, as saying during the debate on rates that the company had veered on the side of being generous.

However, such a micro-focussed process might well camouflage an underlying inadequacy in the rates which fail to value the degree of loss in a more substantive way, such as fallow areas, household use for non-farming purposes and the valuing of lifestyle disturbance. This is a generic issue for all governments and mining communities and one which needs to be more fully debated in order to better ensure a more holistic assessment. However, it is suspected that whatever the amount offered it will always be disputed.

In addition to compensation for loss of farmlands, those to be relocated were to receive new houses and compensation for their other structures. This process included special attention being paid to the needs of the disadvantaged such as aged widows without families, whose particular needs were identified, provided for and their well-being monitored.

Because of the long delay in obtaining RAP approval compensation was paid out before relocation occurred. Also, the building of the new social services at both re-settlement areas commenced so that people could be assured that developments were happening, despite the hold-up in approval. The latter was undoubtedly a wise move and one which government itself could have approved, if it had been at all concerned about local people's well-being. This was especially so as there was no way, at this late stage, that it was going to make the mine development stop completely.

The first group of people were relocated between November 2013 immediately after the RAP was finally approved and a second group moved in February 2014. They had been given the choice of moving to the new northern site which about half chose to do so.

A quarter selected the more distant southern Shinengene farming area (see Map 19). Twenty-one percent took monetary compensation instead and three percent made other arrangements. Some changed their minds as the months of waiting went by about which option they would take. As one could imagine, the decision making must have been very difficult and would have involved much debate within and between families.

The company preferred to provide the compensation funds to bank accounts although the nearest banks were in Solwezi. The nearest banks at Lumwana were not accessible to outsiders, and this was before one was built outside at Manyama – and before telephone banking. A few people already had accounts under the World Vision project. However, the social team was persuaded by the NGOs that they meet the people's wishes for it to be provided in cash. The Netherlands Development Organization (SNV), an NGO, was then recruited to provide financial management education for those receiving payments. But there were challenges because of the low literacy levels and the lack of familiarity with dealing with large amounts of cash. Consequently, the temptation for some was to spend it on disposable items, rather than investing in productive assets. In practice much cash was reported to be squandered and as one researcher noted 'Local people confessed that the compensation money had finished quickly.' Another commented that it was important to have the wives present when the payments were made for women were known to handle money more wisely than men (as had been the experience at Kansanshi).

This issue of dealing with compensation payments was not restricted to Kalumbila communities but is a common international one which is challenging for any developer to handle effectively. The propensity to spend un-accustomed amounts of money on non-productive items and to end up worse off than before is a common practice in many societies – which reflects badly on the relevant company but which is largely out of their control.



Figs. 121/122: Examples of pre-mining era types of housing. Musele area. Credit: KML, 2012.

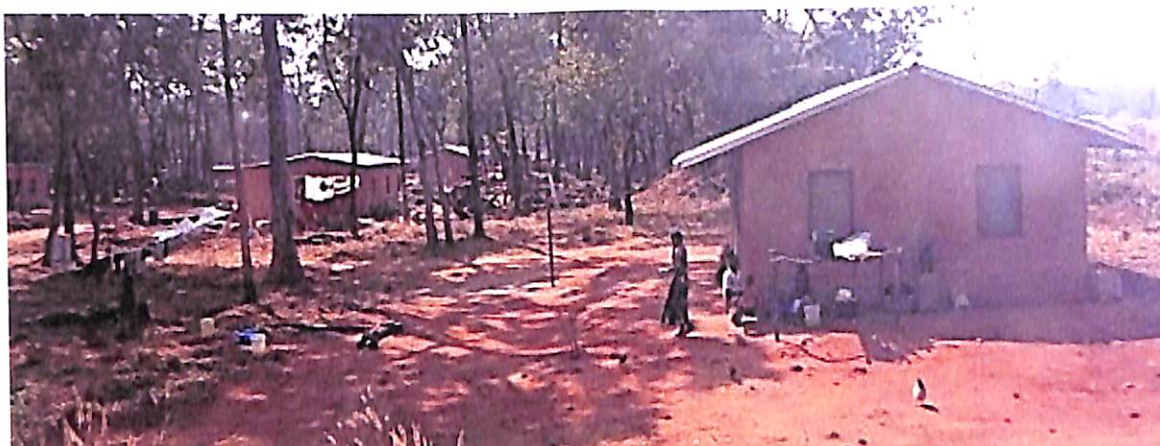


Fig. 123: Newly built resettlement houses, Northern resettlement area, solid with metal roof, still quite rural but with density and facilities, August 2014.



Fig. 124: A happy resident in her new resettlement home. Credit: KML power point, 2014.

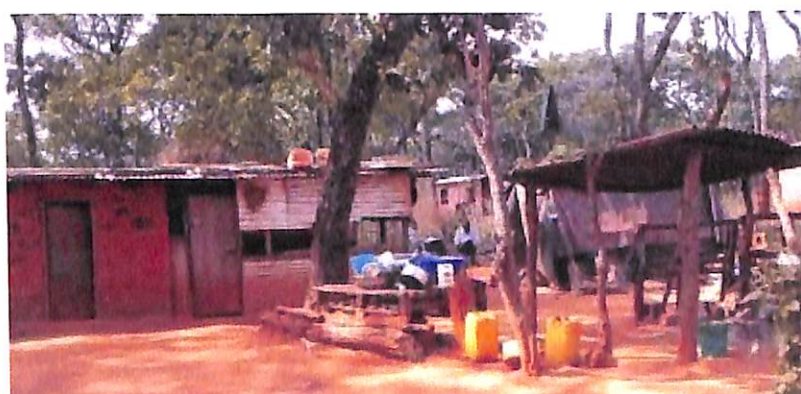


Fig. 125: Northern resettlement area, illustrating how the mine-built houses and surroundings became 'Zambianised'. Credit: PLAAS, 2016, p. 96.

Experiences from other countries, such as Panama (FQML) and Australia (Argyle Diamonds) show that the process works better where it is previously agreed with communities that payments are only to be paid out after committee approval i.e. according to a pre-agreed investment plan. But even then cultural factors can come into place, such as family sharing requests unable to be refused, challenging the logic of a system. Lessons need to be learnt from other mines and countries.

Contributing to the relocation related tensions were the very long delays on the part of both the traditional authority and government in finding land for other housing, farms and commercial developments. A further setback was that government suddenly raised issues, for example about the need to add onto the design of the resettlement housing - after many had been erected. The issues were dutifully addressed by the company, at some inconvenience and extra cost, but such late demands make one wonder why they were raised, as the design had been previously been approved.

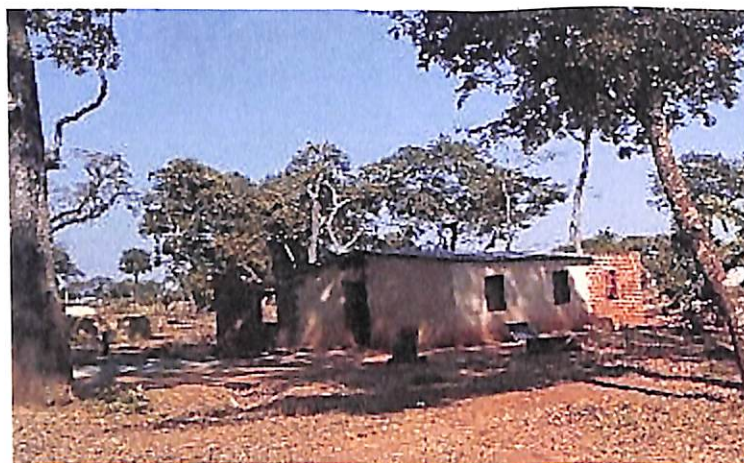
This experience was yet another example of the many difficulties the company faced in trying to follow somewhat erratic government requirements. But one could also ask why that very limited design had been approved in the first place without looking closely at cultural factors, including by both government and the company. Figures 121-122 illustrate the type of homes people originally lived in. The new houses provided are shown in Figures 123-124 and Figure 125 shows how at least one was subsequently *Zambianized* by its inhabitants.

Not surprisingly, the relocation processes were very unsettling, although also a relief after the lengthy delays. This was despite the fact that North Westerners, including the Musele people, have traditionally been very mobile people, both within their own Chiefdoms and that of others. Also, in the past there had always been plenty of land available to accommodate such movements, and there still is, although not necessarily where people want to farm or live.

But mining relocation is different, and it is apparent that the lure of compensation packages and other possible benefits understandably flavoured people's thinking. Such attitudes contributed to the tensions which existed for a considerable period of time, even after the move was made.

The southern resettlement area of Shinengene had long been used for farming. However, those who chose to settle there found that they were now at a considerable distance away from the main areas because the siting of the mine cut off direct routes. Kalumbila town was 16 kms away by dirt road, and it was even further to Musele Central and Kisasa on the T5. Some resented this relative isolation even though it had been their own decision to settle there but they hadn't able to appreciate how it would work out in practice. It was especially difficult for the majority who were without transport as there was no bus service. This was probably because such a small number of passengers would be unprofitable and the wear on a mini-bus from the unsealed road would be considerable, despite it being graded.

The situation of those who had opted to re-settle in the Northern area, about 3 km by road from the new town, was somewhat different, for the 'semi-urban' area was subject to influx from the newcomers to the province, attracted by the possibility of jobs and retail opportunities. Many of them were entrepreneurial and soon set up thriving small businesses, whereas local people (former farmers) were less proactive - being more focussed on obtaining mine jobs and unskilled in commerce.



Above Figs.126, 127 and 128: Northern Resettlement area housing, bore hole and clinic on Maternal Child Health day.



Fig. 129: Southern Resettlement housing.

Consequently, such a mixed population also contributed to an already disturbed social environment, to which it was also going to take some adapting. Some too may have misunderstood the nature of the northern, more 'urbanized' area, not recognizing that it was not going to be one where farming was a major activity, let alone being an easy source of employment and income. However, most grew some vegetables on their plots.

Unfortunately, there does not seem to be any comprehensive socio-cultural study which documented how the people affected adapted over time to this significant change in their lives, in both resettlement areas i.e. apart from various investigators writing briefly on a single aspect and the company social team reporting on the various components of their support and with what issues they were dealing.

Even after some years there was little sign that these were mining-related communities. Despite the solid new houses and public buildings and the graded roads, both were surrounded by bush and still looked very rural. Figures 126-129 show other aspects of the resettled areas.

Also, although very desirable in their 'modernity' and their solid nature, resettlement homes were different from their own traditional and more flexible housing which had made it easy to move regularly and to easily accommodate somewhat fluid households. On the other hand, many people were enjoying a slightly more affluent lifestyle, although it was not as modern as most of them would have liked i. e. with running water, electricity and sealed roads.

It is not clear what style of home would have been most appropriate for such a lifestyle, including if and when the practice of cooking outside continued and family membership was not static. Issues such as whose house is placed next to whose, who sleeps where and with whom and location of latrines were also cultural matters which needed to be thought about. However, those practices may well be changing with such modernization of housing – and indeed lifestyles.

Action Aid's 2015 report which includes some observations on Kalumbila discusses the issues which were raised by the community. It also noted that the company responded to them, including by building more houses to accommodate the older children who had matured into young adults during that time. However, just when such corporate responsibility should end is an unanswered question. The Action Aid report also reported that the new houses weren't as spacious as their old ones but examples of the original houses indicate that this may have been an exaggeration (see Figures 121 and 122).

In order to ensure a greater sense of ownership (and reduce dependency) it may have been useful, and cheaper, to have included community involvement in building the houses with locally baked bricks, rather than just handing them over. However, there may then have been issues of quality of workmanship which would create later issues. This is a subject which would be worth considering in the future, including comparing the experiences of the different mine sites. It would be useful to see which design was found to be most culturally agreeable and which encouraged house pride and self-responsibility for maintenance – and meshed with both traditional and modernizing lifestyles.

Another issue was that the newly allocated farm plots at Shinengene were slightly smaller than were farmed previously (3 ha) and were under title. Such a size did not allow for rotation nor did it accommodate inheritance issues well. The size of the plots however, was due to arrangements between the government and the Senior Chief, not to the company.

The size also implied the need for a change in production to more intensive farming. PLAAS's (2016) report discusses the issues arising, including those regarding land title.

As explained earlier, the long delay in de-gazetting the land caused major hold-ups in achieving a range of commercial developments for what was meant to become a focal point for the 'new' Kalumbila. PLAAS (2016) also describes the issues which arose regarding the new supermarket which had opened with much optimism regarding the number of cashed-up customers it would attract. Despite what turned out to be an unexpectedly low level of patronage there was reported by 2015 to be evidence of some cash flowing and aspects of modernization being enjoyed. It was apparent that a wider range of clothing, cell phones, metal roofs and modern items in homes were being bought. Presumably the increasing number of shops in Solwezi selling a more extensive range of household items than those available locally were also benefiting from cashed-up Kalumbila customers.

An issue arising in both re-settlement areas was that of dependency, with constant requests being made to the company social team for help, additional to the many services already provided under the compensation and the CSR programmes. World Vision Australia also noted such an issue of dependency in their 2008 commentary. How this played out was still evolving at the time of writing. It also appeared that at least some local people had somewhat unrealistic expectations about how they would be able to participate in such a modernized environment, especially if they did not obtain or continue with mine employment, and if they had given up farming.

The cohesiveness or otherwise of an affected community was a factor in how quickly they adjusted to such changing circumstances. But not only did the Northern resettlement area have outsiders move in but there were also internal socio-political issues which complicated matters, in addition to the physical changes in village setups. But these communities were never fully homogenous, there were always differences within and between them, and life had always been subject to some change, even before the mining era.

The loss of ready access to dambos for vegetable growing, to forests for foraging and to fishing because of the damned rivers were issues for many. There were also problems related to bore hole water quality and land for cattle grazing, which the company social team had to try and address. As mentioned previously, the increased distance between communities, including to the Senior Chief's palace and to the T5, were also an issue.

To help the newly constituted communities quickly regain their agricultural productivity and ensure food security, support was provided for, among other things, improved conservation farming agricultural methods, as can be seen in Map 19 and as discussed below under CSR contributions. Such measures were crucial, especially when many eventually lost their temporary mine jobs, and therefore access to cash, after construction finished and production began.

A feature of the mine site is that much of the land was still largely untouched bush, providing buffer zones for wildlife and safe access for roads and traffic - and also allowing for later expansion if required. In response to appeals from communities plans were later made to increase local access to parts of these bush areas for cattle grazing, for beekeeping and also for seasonal products such as mushrooms. However, this opportunity had to be carefully managed to ensure safety given the proximity of the mine workings.

By mid-2014, a few of those re-settled had even sold their new homes and had gone elsewhere – demonstrating another form of adaption to the changing circumstances. It is not known what happened to those who took their compensation in cash.

The new arrangements were undoubtedly unsettling and made for a considerable change from their old lifestyle - but were all part of the inevitable psychological, social and physical change towards a more sedentary, modern lifestyle. Despite all of the planning and extensive preparation, it was apparent that there was going to be a considerable period of adjustment before the new lifestyles became the norm. Given the extent of the change, invariably some, especially the older folk, might never do so with any sense of comfort.



Fig. 130: Musele village, near the Senior Chief's Palace. Still very rural more than a decade after the start of the mine, and close to it, 2019.

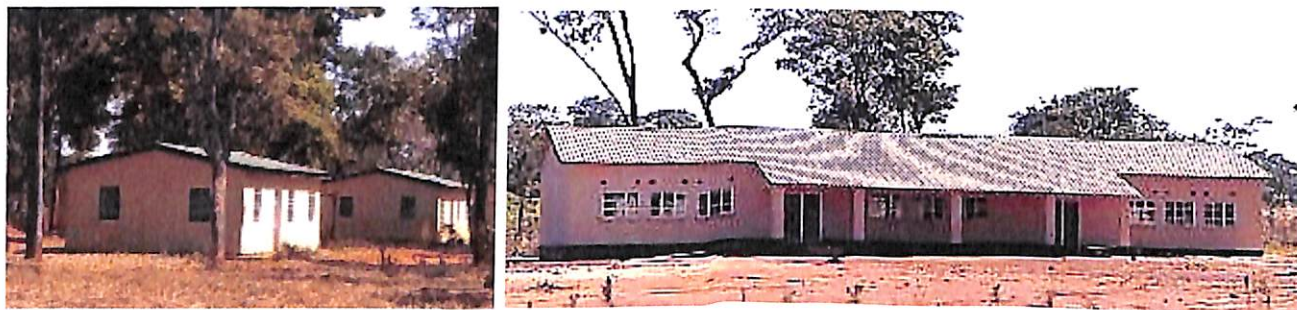


Fig. 131 and 132. New staff houses and school, Musele area.

Musele Central area retained its original position and still had direct road access to Kisasa on the T5. However, it was situated very close to the mine site, and quite cut-off from the Kankonzhi and Shinengene communities (see Map 19). While the modern town and industrial developments progressed around them life in the Musele central area and beyond did not change much, apart from all houses gaining metal roofs and perhaps more modern household items (Fig. 130) and the Senior Chief benefiting from a new palace. They also received new school buildings, teacher and nurses' houses and clinics and water supplies – amounting to a significant contribution to local infrastructure, along with the graded roads (Figs. 131 and 132) (and replacing the World Vision inputs which had been swallowed up by the mine). It is not known how efficiently government was able to provide the necessary staff and equipment inputs required to make them functional but the new staff housing would have been attractive to any teachers or nurse



Fig. 133: Kisasa – in 2012 a quiet spot on the edge of the T5, 2012.



Fig.134: On edge of T5 near Kalumbila mine turn-off, much land being demarcated by axed trees by someone anticipating future customers, 2014.



Fig. 135: On the edge of the T5, before Kalumbila turn-off, another entrepreneurial project- the building of rooms to rent in anticipation of the influx, 2014.



Fig. 136a and b: (L) Kisasa was very quiet in 2012. (R) Activities had had greatly increased by 2019, unfortunately of them close to the edge of the T5 road.

Kisasa

As at Kansanshi and Lumwana, Kalumbila had an associated area - Kisasa, a small centre situated on the T5 about 145kms west of Solwezi, half-way to Mwinilunga, about 10kms west of the Kalumbila mine turn-off and about 30kms from the actual mine site (see Map 16). It is situated at the intersection of the T5 and the R185 which leads 15 kms south on the western edge of the mine site and to the Senior Chief Musele's palace, then a further 52 kms south to Ntambu. Before the mine start-up Kisasa was a small rural centre, with a basic school, clinic, small market, maize collection depot and some dispersed low-density housing and small shops, on customary owned land (Figs. 133 and 136a). It still wasn't modernized by 2014, although the population had greatly increased, and had done so even more by 2019 (Fig. 136b).

As at Manyama, the growth was rapid. The 2000 and 2010 Census results for Kisasa Ward (a broader area) indicated a small population with a very low growth rate. However, the situation changed dramatically with many new people starting to flood in from about 2010 when mine preparation activities commenced, including from Solwezi and Manyama and beyond. The new arrivals were hopeful of obtaining jobs at Kalumbila and informally were setting up basic homes. The company estimated that there were about 5,000 people in 2010 when they first arrived, and it was thought to be about 15,000 in 2015. To a lesser extent growth also happened further afield in the villages around the mine site, including at Musele Central and Kankonzhi to the south, but also further south at Ntambu and even Chowwe.

The number of small shops and stalls accelerated at Kisasa to meet the growing demand for food, clothes and household items and some entrepreneurs brought in produce and other goods from Mwinilunga and Solwezi. However, one resident reported that only a few, such as teachers and mine workers, could afford to buy them because there was so much unemployment. As in Solwezi, prices of basic goods increased, thereby further disadvantaging those without jobs or access to farmland.

The result of the 'invasion' was very similar to what happened at Manyama, with the building of hundreds of small, poor quality houses being ad hoc, and clustered, uncontrolled, along and around the T5, west and east of the junction, risking the same problems of road safety which had occurred at Lumwana and around Solwezi town. In 2012 entrepreneurs were commencing building basic rooms for rent in anticipation of customers (Fig.135). Others eager for land sales were also busy informally demarcating sections along the T5 east of Kisasa by felling large trees in 2014 (Fig 134). But as this was land actually customary owned the legitimacy of these sales was questionable.

Hundreds of new residences reached south along the road to the Senior Chief's residence, presumably with the Senior Chief's permission. Initially there was no planning, and the sudden increase in population created a heavy demand for the basic services. As at Manyama alcohol abuse became common and there was increasing theft and other social problems, especially hunger. As a teacher said, '... many were not living well.' (Interview, 2014).

She also reported that the school was over-whelmed with pupils with as many as 158 in a class in 2014, a rapid increase from about eighty-four in 2011. As in the other places these teacher : student ratios caused much stress for teachers trying to do their jobs. Most of the students were from outside the area and province and were job seeker off-spring. Some new residents were from Manyama and Solwezi and some were from within the traditional Musele area who had been given their resettlement money and moved to the Kisasa 'town' area. Some of the latter had spent their compensation unwisely so ended up in trouble as they had given up farming. Others were local people who had moved closer to the 'action'. Schooling was reported to be not such a priority for local Musele children who often disappeared on farming duties, especially from January-March. The teacher also reported that the pupils' ability to concentrate and learn was often affected by hunger, with vulnerable children being particularly affected.

Matters were complicated because Kisasa was still customary land, and largely neglected by government so the area became an additional challenge for the company although strictly speaking, it was not their responsibility, being well outside the mine licence area. However, as part of its Influx Management Plan the company extended the basic school to help address the over-crowding and also upgraded the rural health centre but it was hard to keep up with the every-growing need. Government had agreed to build a new high school, with a sign put up in 2013 but nothing had eventuated by the end of 2014.

In order to avoid congestion around the T5 the company created a plan to attract people away from linear settlement along the highway. However, the new arrivals appeared to be resistant to any form of organization and the traditional authorities exerted no visible effort to control the influx – even though they had the power to forbid people from settling since it was customary land. This was so even though the influx of so many outsiders was creating social problems and stiff competition for jobs for their own people. There appeared to be more focus on taking advantage of the economic opportunities which were arising. As a provincial officer noted to this author about the mining boom in general, 'Chiefs are coming up with their own plans, giving away and selling land ad hoc, but they are not mandated [or able] to provide services.'

Making matters worse, the company's efforts to help address the lack of planning had not been accompanied by a matching level of cooperation and action from the provincial government which had decided in 2014 that Manyama, not Kisasa, was their priority. But that 'horse had well and truly bolted' and one would have thought that it might have been more appropriate to focus on the fast-developing situation at Kisasa before it got completely out of control. It was clear that government had failed to take responsibility for both mine associated areas, which was somewhat surprising given that they were highly predictable situations and that lessons should have been learnt from the Solwezi town area experiences. But perhaps, as with Solwezi, there was a presumption that the companies would pick up the responsibilities. It was notable that a few elite businessmen were benefitting from the developments, despite the lack of organization.



Fig.:137: (L) Musanda farmers preparing soya beans payback. Fig.138: (R) Learning new beekeeping methods.



Fig.139: (L) Vegetables selling well at market. Fig.140: (R) Purchasing produce from Kankonhzi. Source of all photos above: KML reports, 2017.

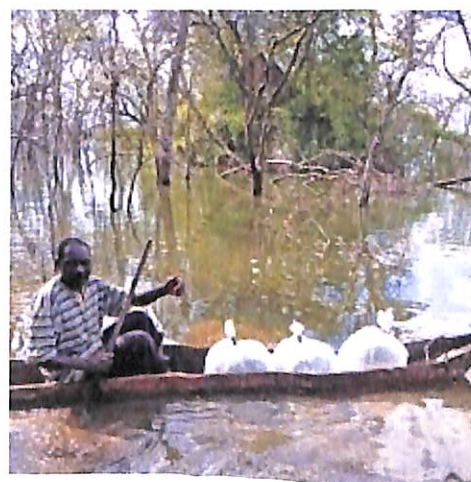


Fig.141: (L) Improved cassava growing, 'Kalumbila Invests in Cassava Farmers,' photo by Martin Musonka, Suma Systems, Lusaka Times, 7th February 2016. Fig. 142: (R) Fish restocking at Musangezhi dam. 5fm, reporting on FQML. <http://www.5fm.co.zm/first-quantum-minerals-gets-fishing/>

Corporate Social Responsibility (Community Development Programme)

In order to manage CSR contributions, the Trident Foundation was established in 2013 with an advisory committee consisting of the Senior Chief, other community representatives, local government and company staff, and managed by the social team manager. Their task was to consider proposals, taking into account available resources. Their decisions were guided by an assessment of priority needs in particular areas and by the Foundation principles and a development framework produced during community consultation processes undertaken in 2016. In 2016 the Trident Foundation was invited to the first District Development Coordinating Committee meeting of the newly formed Kalumbila District, illustrating recognition of its important role in development matters in the newly created district.

Millions of dollars of activities were initiated, and, as in all mining areas, focussing largely on health, education, community infrastructure and livelihoods. Specific priorities were mostly based on the results of community consultations and varied slightly from area to area. They included:

- Health activities, including facilities, malaria, nutrition, HIV, safe motherhood support, hygiene and sanitation programmes and emergency transportation.
- Education, including provision of textbooks, scholarships, adult literacy programmes, teacher training, early childhood development and building or renovation of schools.
- Other infrastructure such as roads and bridges, a market and water points.
- Local business development training for would-be entrepreneurs and marketeers, incubating small businesses, including micro-loans activities specifically for women.
- Farming, including bee keeping, conservation farming, livestock care training, caged aquaculture-fish farming and a vegetable greenhouse pilot which focussed on providing vegetables for the mine and local area.
- Specific youth and women's empowerment programmes.
- Forest and wildlife conservation.
- Culture, such as support for traditional ceremonies and related activities.

See Figures 137-143 for some examples. The schooling situation at Kisasa was particularly challenging because the numbers of students kept increasing as the influx grew and it was very difficult to keep up with the demand. But education was seen as a priority for helping people to be able to move ahead in their lives and multiple resources were devoted to the sector.

In addition, a major focus was placed on the development of skills and knowledge related to income generating opportunities which would enable the creation of alternatives to mine work. Examples include provision of scholarships for school leavers for vocational training at Solwezi Trades Training Institute (auto mechanics, power electrical, information communication, secretarial and office management) and at Mwinilunga Trades Training School (automotive mechanics, power electrical, carpentry and joinery and bricklaying). Efforts were also made to enable employment opportunities for largely unskilled local people in areas such as landscaping, security and bus and cleaning contracts.

One aspect of the programme which did not come from the local needs assessment – which was focussed on meeting basic community priorities, was the provision of support for West Lunga National Park.

While important in its own right, as with Kansanshi's animal reserve, it is not clear why limited CSR funds were allocated to this activity as they were not a local priority. It was later reported that the project was going to hire many local people.

The following discusses a few aspects of this extensive programme of support.

Agriculture: Given the importance of the production of food to local people's well-being the re-establishment of farming after relocation was a priority. Map 19 illustrates how widespread was the expanded program of support. The developments were slow in the initial years as support was initially focussed on the introduction of the same style of Conservation Farming (CF) used at Kansanshi. It was introduced at the Shinengene resettlement area even though there had been no evaluation of its appropriateness at Kansanshi and there were a number of issues associated with its application. The approach was not smoothly accepted by the resettled farmers. The style of technical assistance and the rush to achieve results appeared not to have fitted well with local aspirations. This was especially so in the early days as people were still adapting to their new environment and being somewhat 'shell shocked' by the move and the reduction in plot size. But much of the reticence of the younger men, in particular, was probably to do with being far more interested in obtaining mine jobs than going back to the hard and less remunerative work of farming. It was reported that women were more responsive.

As at Kansanshi it became apparent that yields were dependent on the amount of subsidized fertilizer provided which didn't bode well for sustainability. Part of the problem was also that attitudes of dependency had built up within communities, with a tendency to sit back and wait for things to be done for them by the company, rather than taking the initiative to get settled into their new environment. However, the company was under enormous pressure to be seen to be producing results. Consequently, the situation was difficult.

Another issue was, as had happened at Kansanshi (but not Lumwana), the Ministry of Agriculture complained that the agricultural developments moved too fast and their staff were not sufficiently consulted and involved (remarks to this author, 2014). This may well have been partially due to the inability of their staff to be available when required, due to insufficient numbers and lack of transport for accessing the relatively distant site. But there was no time to delay increasing productivity, especially once the number of those employed on the mine site was reducing in the post construction phase.

It was recognized by the company after some time that the issue of addressing agricultural needs required an overhaul, especially in regard to expanding farming capacity to meet the greatly increased demand for food stuffs for the mine and the town. The revised approach included cooperatives to enhance efficiency and efforts to develop markets and overcome the transport and distance issues. The range of activities increased, including livestock, chicken and bee-keeping, soya and groundnuts growing and expansion of the type of vegetable growing, including in mini-green houses. Adoption of the new methods and productivity began to increase as illustrated by the amount of produce on sale outside the supermarket and elsewhere, as well by the records kept by the Foundation team. It was apparent, yet again, that adaption to their new circumstances takes time. There were still constraints to be overcome, including about repayment of loans and being able to maintain quality of produce for sale, but by 2017 there were also reported to be clear signs of increasing engagement and of increases in income, at least for some, as well as development of initiative and somewhat less dependency.

An underlying issue for farmers, who were traditionally cassava growers, was the focus on growing maize which could be sold for a comparatively high price and consequently tended to be sold, without anticipating future household needs.

But maize also required expensive inputs and more labour than that needed for traditional crops like cassava, sorghum and millet. It also required water and was not drought tolerant - unlike the other crops.



Fig. 143 : Company built school building at Kisasa, 2019.

Business Developments: The CSR programme included much support for business development. As the other mine programmes had done, training of local people in business skills was provided and the company actively encouraged the participation of local companies to tender for business opportunities. There were none in existence until late 2014 when the Senior Chief and the Taskforce used their initiative to form the 'Musele Chamber of Commerce' and so became eligible to apply for tenders. A data base of potential local providers was also established. Furthermore, in 2016 a North Western Extractive Industry local contractors' partnership was formed between the Musele Chamber, the Lumwana Community Business Association and the North Western Chamber of Commerce, with all three mining companies actively promoting such developments. These arrangements contributed to overcoming the low level of business capacity which existed in the area, and to enabling the North Westerners to compete a little more effectively with business experienced outsiders.

However, as in the other mine areas, despite the various types of support provided, there were many challenges to achieving local business development objectives. They included communication problems, poor treatment of staff by some local business owners, lack of local capacity, no capital, elite capture, poor organization, and the difficulty of determining who was local. The reality was that business capacity takes time to develop and is undoubtedly especially challenging in such an environment, despite the best of intentions and provision of much support. More modest aims might have been more achievable.

Another aspect of business development was a concept for a serviced industrial park to be created within the MFEZ. In 2015 there were over 100 investors waiting for title deed with a combined investment of \$50 million which they could use as collateral to get loans and invest in the town. These investors planned to employ at least 500 people. However, again the lack of title deeds from government resulted in an inability to progress investment opportunities and provide more employment.

By 2017 only one company had signed up. It was a Chinese one, experienced in the construction of mill balls for the mine. The factory was built on four hectares of land amidst the bush. It opened in 2019 employing about one hundred and fifty staff (Fig. 144).



Fig.144. The mill ball factory, the first development in the industrial park, a lone structure amidst the bush, near Northern Resettlement area, 2019.

Such delays aggravated the tensions about work for local people, for other opportunities such as at the local supermarket and service station, were very limited. As at Lumwana government had been unable to build up on a company initiative by providing the enabling elements required for it to progress. This was a missed opportunity to meet one of its prime objectives – to create more employment opportunities for Zambians and one could well ask why this was so.



Fig. 145: Cable pulling by locals, during the construction phase. Credit: Trident power point, Jan. 2014.

Employment

The most sensitive issue after compensation and relocation was meeting the communities' prime demand - the employment of local people on the mine. In the early stages (around 2011) the company social team was also very aware that the interruption to planting and the delay in relocations meant that there was a possibility of food shortages arising. Consequently, efforts were made to provide community members with jobs, with the company reporting that about 70% of all affected families had members employed for some period of time, mostly in casual, short term and unskilled positions (see Fig. 145). This work enabled any food shortages to be made up for by the buying of food items or by employing others to farm for them through contract labour or 'piece work' (which is common practice).

The buying of food had dietary implications, just as the loss of ready access to the forests had done. As one community member said, 'We are eating different foods now that we are buying it.' Those changes, which do not seem to have been documented, and may have been negative or positive, as discussed briefly in the health sector discussion paper (see author's website). These changes may also have been temporary as compensation monies and employment pay dried up and as farming practices changed.

Being related to initial land clearance and unskilled construction work the majority of those initial work contracts were short term and expired in 2014/early 2015, with the potential for problems to occur as people adjusted back to having no sources of cash. This was especially so if there had been no savings, which was likely for many. Local employment was about 70% of those available at the peak of demand during construction. Local lads keenly watched the public notice board, such as at Kisasa, to see if they had been selected (see Fig.146).

Efforts were then made to identify other unskilled jobs such as gardening and cleaning and the social team provide training in skills which would help to enable alternative income generation, including participation in the evolving local economy.

A local employment data base was developed and run by the traditional authority, but as at the other mines, abuse of this privilege resulted in the facility being withdrawn. There were also issues related to biases in employment similar to those experienced at Kansanshi, despite efforts by senior management to root them out.

Employment became a very sensitive issue, with the Senior Chief and local communities demanding local preference on the grounds that it was *their mine* and that they therefore should benefit the most. Mine work became *the holy grail* and anything less was regarded as being unacceptable and the cause of great resentment.



Fig. 146: Mine employment noticeboard at Kisasa, with local youth eagerly checking to see if their names had been included, July 2012.

The situation became especially inflamed when non-local people started to flood into the area desperate for jobs. However, the expectations of the local populace represented a quandary for the company for as much as they would have liked to have obliged they were constrained by the tribal neutral Constitution from fully doing so. In the post construction period efforts were made to prioritize locals, including women, for the unskilled jobs which were still available, like gardening, security and cleaning.

But the low levels of education and lack of competency in English and relevant skills of most local people were attributes which could not be overcome overnight. Consequently, most were not eligible for the more skilled positions.

There were also issues relating to the lack of a modern work ethic, including punctuality, safety consciousness and being alcohol free. Another challenge was how to define who was 'local' and who was not. For example, how to categorize the Kaonde people who had lived in the area for many years and those who had left the area years before but now returned eager to share in the new opportunities. Lastly but not least, the Constitution forbids discrimination on grounds of tribe so being able to meet the requirements of a duty statement was meant to be the judgement point, most of which would require characteristics which many local people did not have. It was not a straightforward situation and could not be judged simplistically.

Government's lack of clarity and inconsistency in responses to company requests as to how to satisfy local demands and at the same time, be non-discriminatory, was very frustrating for the social staff which had to directly face much antagonism from the Senior Chief and his people. Kapesa et al (2015, p. 49) refer to these difficulties but interestingly, report that it was the 'outsiders' who felt discriminated against. These issues, which had been simmering for some time, came to a head in 2015 with a widely reported episode of violence between locals and the outsiders which the police had to quell (one example was Daily Mail, 2015).

Such a deep-seated issue added to the tensions prevailing in earlier years which have been previously described. But such a situation is not all that surprising for a country with such high levels of unemployment and the level of desperation amongst people, including amongst those who had travelled far in the hope of obtaining jobs. and was similar to those which had occurred at both Lumwana and Kansanshi in terms of resentment of the many outsiders who were often from other older mining areas and had higher levels of education and appropriate experience and skills. Many such people had migrated along the T5 because of poor work prospects on the Copperbelt and the better paying jobs and conditions in the new North West mines. But to some extent the situation may also have been indicative of long-standing negative attitudes to outsiders – and perhaps, about their own feelings of inadequacy, feelings which have their roots in history.

However, the local people who complained about the influx of outsiders taking 'their' jobs seemed to be unaware of, or else they conveniently ignored, their own history i.e. their own people had travelled to Lumwana and Kansanshi, and even as far as the Copperbelt for mining employment in earlier years. Musele people were even included in Lumwana's preference list, after the three most local groups.

Employment was also created by the opening up of a timber recovery mill in 2011 (Figures 147 and 148), to make use of the timber chopped down to clear parts of the mine site. Instead of burning it, and adding to air pollution, the timber was to be used to produce decking and school furniture and other useful items. The company, with the Senior Chief's approval, provided \$6m to set up the facility and machinery and to staff it with Zambians experienced in woodcraft and for them to provide training for local people to develop the necessary skills. What would have been waste material consequently had value added to it and new employment options were opened up.



Fig. 147 and 148: Kalumbila's mine site timber recovery project mill. Credit: Woodmizer, Dec. 2016

Surprisingly, in another case of obstruction, government initially objected to this project at one point, and held up its development. This was even though the Senior Chief had approved it and it provided a number of jobs and usefully recycled what otherwise would have been waste material. Sanity finally prevailed when the Minister of Mines intervened and the facility was re-opened but not before there was much wasting of time and energy to sort the issue out.

As well employment opportunities for about forty people were created when the SPAR supermarket opened, as well as in other businesses around the town. But more often than not it was again outsiders who were best qualified for these positions, causing further resentment amongst local people.



Fig. 149: The hospital in the town.



Figs. 150 and 151: Kalumbila town, shopping area, with a local farmer's market and a supermarket, banks and a hotel, all nestled within many original local trees and shrubs.

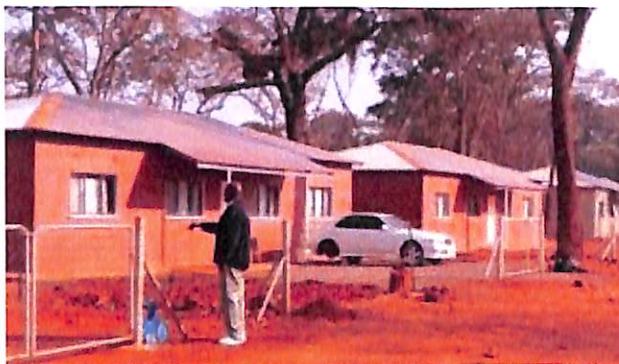


Fig.152: (L) Very new Kalumbila junior staff housing development, 2014, to be compared with Fig.153. (R) illustrating how well some had developed their gardens and how they now had sealed roads and lighted streets. by 2019.



Fig. 154: The entry to Kalumbila Town, leading off the mine road, with sealed roads .

Kalumbila Town

There was, in the early days, enthusiasm amongst the communities for the town concept, with much appreciation that it would be an open facility, unlike at Lumwana. However, because it was an expensive place to live its residents tended to be limited to those with non-casual jobs on the mine or working with associated services. By 2016 there were about 5000 people living there, enjoying the clean and well-organized set-up, including sealed roads, electricity, running water and sewerage, with its facilities set out in what was still a well-wooded area, as shown by Figures 149-154. The establishment of the only wholly planned and fully serviced modern town in Zambia, set out in the middle of the bush was quite an achievement.

There was also a senior mining staff housing estate (Fig. 152/153) with community social facilities situated slightly away from the town and near the golf course.



Fig. 154: (L) Senior staff housing, 2014. (R) Fig. 155 A flower garden being carved out of bush at the senior housing area, with the golf course in preparation beyond, 2014.



Fig. 156: Assessing damage to Kansangito Bridge, an important piece of infrastructure for this isolated area south of Kalumbila, Ntambu area, Credit: Lusaka Times, 21st December 2012.

Neighbouring Chiefdoms

There is a generic issue in this mining impact story about where a mine's influences and responsibilities stop. In the case of Kalumbila the neighbouring Chiefdoms were Ntambu (6 kms from T5) to the south west) and Sailenga Chiefdoms to the west were also very needy. Both of them had exploration occurring on their lands – which consequently raises expectations amongst local people. The Ntambu area was also affected by the disruptions to the R185 by the mine developments and by the arrival of outsiders, some of whom settled in the area in the hope of being able to access mine jobs. Their presence created some degree of social and physical disturbances in what had previously been quite isolated communities. Figure 156 illustrates one of the trials of living in such a rural area and the difficulties which arise when what little infrastructure they have is damaged.

Some of the local people were also interviewed during the EIA processes which created some confusion as to why they were being consulted given that they weren't going to be directly affected (at least immediately). There were reported to be considerable feelings of frustration and unfairness about the developments 'next door' and an attitude that 'It seems that nobody cares about us as there are no minerals in our area'. As one observer noted, '... such frustration could strengthen divisions between Chiefdoms...' (as between haves and have-nots), as mentioned later in the section on Culture.

There were reported to be constant requests for assistance from these neighbouring areas – which presented a quandary for the company about where to draw the line. It also raises the generic issue of whether companies should be expected to provide any assistance during exploration activities. Also, because Ntambu was down-stream of the mine site it also had the potential to be affected environmentally by any contamination of streams or rivers and changes in flow or turbidity. The latter problem has already been reported. The increase in population would have also increased the demand for schools and clinics, and for forest products, especially fuel for cooking.

The Kabompo Hydro development occurring to the immediate west, mostly on Chief Sailunga's land, were also part of the changes which were occurring in the neighbourhood, as described in the section 'Related Developments'.

Reflections on the Kalumbila Mine Impact

The Kalumbila developments were handicapped by a number of factors right from the beginning. Firstly, was the nature of the mining site with its low-grade mineralization, and related to that, the three sites being spread over a large area and needing to be connected. Secondly, the local people were scattered in small hamlets throughout much of the area and were used to being able to freely move around it. In addition, the site was a considerable distance from government officials in Solwezi, Ndola and Lusaka and Kalumbila's development immediately followed those of the two other major mines. The demands on provincial and Council staff included participating in the many on-site meetings which was difficult as they were over 140kms away from Solwezi town, because they were so poorly resourced with transport and fuel. Consequently, they were unable to fully carry out the active government advisory/guidance role which was needed and owed to those being relocated. At least three full-time officers on-site, with adequate resources, for the start-up years were required for supporting an exercise of this complexity. As a result of their frequent absences much of the community focus was on the company rather than on the responsible officials when they had issues with what was happening.

The company's own performance contributed to the problems with the initial years being complicated by issues related to the initial licence approvals (although whose fault they were was not clear), the rush to get the mine established (which is understandable from the point of licencing and engineering but challenging for the social aspects) and subsequent major plan changes. Most significantly, the presence of so many local people living and farming in and around the future mine site indicated the need for a significant investment in social management, and this was achieved more by the dedication of a few staff than by being well resourced. But this was the first of the three mines which had appropriate and mining experienced professional expertise, which was clearly demonstrated by the detailed documentation of developments and the strategies used, including hundreds of consultations.

The way in which national government approved the initial licences and then handled the resulting difficulties also contributed to the difficult situation which prevailed in the early years. In addition to the inherent weaknesses mentioned above, there appeared to be much game playing and manipulation going on in Lusaka, including obstruction, corruption and delays with which no key investor starting up a major project should have to tolerate.

Understandably, the communities were very disturbed in the early days, with high levels of anxiety about the forthcoming changes, much spreading of often false rumours and excited and exaggerated levels of expectation about how they were going to personally benefit from the developments. Such mixed feelings were aggravated by the delays. The style of community leadership being practiced did little to allay the prevailing tensions.

Those issues, in turn, complicated the ability of the company's social team to carry out what were inherently challenging responsibilities, even under the best of circumstances. By the same token, the compensation and resettlement processes were completed according to international standards. CSR inputs were significant and the selection largely based on local priorities with much assistance provided to communities including social services and support for employment, business opportunities and infrastructure. In addition, the social team was very supportive of communities, handling much of the flack which should have been addressed to the government and/or the traditional authority. As it was with the other mines, the issues associated with the influx of newcomers were extremely challenging and could not be solved without intensive government inputs, which were not forthcoming.

An additional complication was that the social team manager was also required to undertake public relations duties until a full-time officer was appointed in mid-2014. However, even then the demands continued because of the controversies and the high level of public and media interest in the early years. This included mine site visits by a constant stream of government officials and other VIPs, media, NGOs and researchers, including, in many cases, providing them with escorted tours around the very large site. While important for helping people understand the situation such extra duties were very time consuming and consequently distracted from their priority job of supporting the communities. The need to cover both tasks during that most difficult period was unfortunate and indicated an under-estimation by senior management of the requirements for handling the community-oriented aspects of mine work. This was despite FQML's experiences at Kansanshi which should have given the company some insight into the need to devote significant professional resources to social matters. Dealing with human issues is no-where near as straightforward as dealing with engineering matters – and any weaknesses in this area could constitute a significant reputational risk (and did so) to the success and reputation of a mining project, as identified in FQML's own Annual Information Forms. Hence, it is important to invest in a well-resourced and qualified, experienced and culturally aware social team in such a situation.

An interesting development occurred during the lengthy wait for the RAP to be approved. The Musele Task Force, with NGO support, became unusually well organized, active and vocal and partially successful in attracting government attention to their issues. While their generic complaints were ignored they certainly put the other matters on the government agenda and contributed to the initiation of the Ministerial committee which helped to resolve some of the specific local issues. However, it was apparent that the group was not really representative of the local communities and actually constituted a form of 'elite capture', one which took full advantage of the new business opportunities for themselves. This situation meant that inequalities were exaggerated, not lessened. It appeared that the visiting NGOs did not always understand local politics, and additionally, some researchers mis-reported the situation and the media created exaggerated, alarmist coverage.

From the communities' point of view their land had been 'invaded', their free movement had been partially restricted, the basis of their lives had been re-cast and they were being thrust very quickly into a world with quite different values. The majority had not benefitted personally anywhere near to the extent that they had hoped and they especially resented that jobs weren't as widely available as anticipated because there was so much superior competition from outsiders. There was also a misplaced focus on mine jobs and a failure, at least initially, to appreciate that there were other ways to be involved in a mining boom. Consequently, a considerable level of anger prevailed in the initial years, along with a strong sense of dependency which at times inhibited the development of local initiatives.

Also, despite the expansion of the multi-sectoral CSR programmes and its many inputs and their well-intentioned objectives, some projects did not achieve to the extent envisaged. Absorptive capacity was weak, for reasons including cultural factors, political interferences and the weak state of related government services. Unfortunately, there was no magic bullet available to transform over-night an impoverished, traditional society into a modern, twenty-first century entity.

The long-awaited *Development* had finally come to the Musele area – but with very mixed results, just as Kansanshi and Lumwana communities had discovered. Things hadn't turned out quite the way most members of the local communities had expected. But a few individuals did benefit well and had no such complaints, nor did the national treasury.

The Team: Such a comprehensive CSR programme being planned and implemented over a wide area requires a large, multi-sectoral team with technical expertise, and importantly, local knowledge to work with the Musele communities to help improve their lives (Fig. 157).



Fig. 157: The Kalumbila social team, without their Manager, Garth Lappeman but with the Community Liaison Officer, Alex Mapapayi, 2017 Credit: KML



Fig 158: Sunday morning baby-sitters helping out while the parents sleep in after the previous nights' socializing. Waking in front of one of the thousands of large termite mounds which dot the Musele area, and the sports ground, Kisasa, 2013.

DISCUSSION OF ISSUES COMMON TO ALL COMPANIES

Looking back over the first decade it is apparent that there are a number of issues generic to all large mines:

CSR Programmes

There is a diversity of definitions globally about what Corporate Social Responsibility (CSR) should entail and different views on why and how companies should include the practice in their programmes. However, the subject is commonly understood as doing business in a way which accords with social values, recognizes international standards and follows ethical principles of behaviour. But these lofty ideals are wide open to interpretation. By following such standards companies are meant to earn what has become known as their 'social licence'. What is clear is that CSR is a voluntary practice, not mandatory, and that it includes a variety of approaches in the way a company engages with and contributes to local communities as a way of enabling them to directly benefit from mining developments. Neither is there a set formula for the amount provided or for how it should be contributed. Whether its definition should also include ways of working within a company, such as labour practices, training opportunities and occupational health and environmental measures is open to debate.

This discussion focusses on those CSR contributions made to a mine's local communities - but they are really just the tip of the iceberg for even more is contributed to the national treasury and local Councils. Critics of mining companies often fail to recognize that all large mines pay even greater amounts of money in the form of corporate, royalty, land, property and other taxes and business fees, especially at the national level but also to local councils. Mine associated employment and the involvement of local or at least some Zambian businesses in procurement opportunities could also be interpreted as contributing, at least to some extent, to the social and economic well-being of local communities or their fellow Zambians. The big, unanswered question is to what extent do the national level contributions trickle back down to the source communities.

In the case of Solwezi it would appear from the poor state of local services that minimal national support to the impoverished local government was provided to help them meet the needs of the greatly increased population in Solwezi District over the past decade. It would require a forensic study of accounts and a more accurate population count than the Census provides to precisely document the extent of the short-fall. But there was much evidence to suggest that priority setting at the national level largely ignored the stress that the mining induced population boom was causing. Kesselring's (2018) study provides a glimpse of the situation of a largely self-funding Solwezi Council's financial situation. That analysis indicated that the Council was highly reliant on mine taxes for survival as its capacity to obtain taxes from its residents was minimal. It was apparent that the CSR provided by the mines filled a very large gap and represented a substantial additional contribution to service provision, at least for the major mining areas in the District. However, as is obvious to any viewer, it was still not enough to meet the great expanded needs of old and new residents.

As described in the sections on each major mine, the various CSR programmes have been extensive, although not all were smoothly implemented. Some projects raised expectations then disappointed, such as the introduction of *Jatropha* farming. Also, criticisms were made by local government agencies that some projects had been introduced without relating to development plans (although almost all were in the priority sectors).

There were also complaints that, with the exception of Lumwana, they had failed to sufficiently involve local agency staff, such as agricultural extension agents.

On the other hand, in regard to classrooms and clinics, the complementary and necessary provision of more teachers, nurses and equipment and supplies was not always provided by government in a timely fashion, if at all.

It was apparent too that mining companies can move much faster than can a government bureaucracy. Infrastructure is particularly easy for a mine to quickly implement, they being well resourced and skilled in such matters, and efficient. The 'soft' components are less easy for a company to provide for they required social skills, cultural know-how and patience with local methods which are much harder to achieve. These two aspects are often out of synchrony which makes for a difficult situation.

A review of the various programmes funded by Kansanshi, Lumwana and Kalumbila clearly shows an impressive range of socio-economic development activities which are undoubtedly helping to meet local needs. They supplement government's efforts, largely in priority sectors, particularly in education, health, agriculture, water, livelihoods and business opportunities, as well as providing some support for culture and welfare. Overall the amount of money expended has amounted to many millions of dollars, a fact that doesn't always seem to be recognized or appreciated by critics of the companies. The total amount contributed over the first decade is not given here because these companies vary in their definition of what constitutes CSR expenditure e.g. Kansanshi includes road construction and rehabilitation, and Public Relations in its calculations. This issue showed up in the 2014 ICM report which, included much lower figures for Lumwana which had used a different definition. But the amounts are significant contributions to the Province/District and sometimes beyond.

In order to try and reduce the handout mentality, Lumwana notably required community contributions to the buildings it supported. This requirement invariably slowed down the construction process and sometimes complicated implementation but enabled a greater sense of ownership. Also, because of their inherent weaknesses, use of local contractors was not always an efficient way to have projects implemented.

The structures for managing CSR programmes varied. Lumwana impressively established a partnership with local traditional and government authorities – and handed the responsibility over to them after a decade. Just how effectively this arrangement, and the handover, worked would be worthy of a study. Kalumbila set up a cooperative arrangement in about 2016. Kansanshi's organization was quite different, and at least initially, lacked community involvement, planning and monitoring and evaluation.

It was often agreed by people in all mine communities that 'the mine has helped but not to our expectations'. This was mostly because there were so many new arrivals, and because their numbers kept increasing, the benefits were dissipated. Consequently, the original inhabitants could not benefit as much as they would have wished, as shown by the over-crowded classrooms and clinics. In Lumwana's case, the projects were spread widely across three Chiefdoms which further dissipated the benefits. It wasn't until after 2012 that recognition and appreciation began to be voiced about the contributions in the Kansanshi area. This was some seven years after they had commenced and after many millions of dollars had been spent. The situation was largely due to the negative atmosphere which prevailed during this early period, because of the many problems occurring at that time, as described in that section.

But a major contributing factor was that the Solwezi town was so problematic, and the need so great and ever increasing – and government was not meeting its own responsibilities using mine taxes.

Another issue was local people expected much greater personal benefits, not appreciating that community services were part of the benefits.

It is notable that expectations were generally about the most basic of resources – of access to schools, clinics, clean water supplies, roads and agricultural assistance – all of which could be seen as addressing basic human needs, none being excessive or extravagant demands.

An unintended outcome of the extensive provision of CSR inputs was a growing dependency on the mining companies to provide basic services. Government was widely seen by communities as being largely unresponsive to meeting such needs – and some suggested that it was abrogating its responsibilities for community well-being to the companies. Those who were particularly aware recognized that in fact much of what the companies were contributing should really have been undertaken by government.

Others have observed that the companies had turned into a new form of ‘development agency’, playing almost exactly the role that the UN, bilateral and INGO agencies have played in the past. A benefit of this form of assistance is that large mining companies tend to be around for much longer than aid projects which usually have short lifespans of three-to-five years. Inputs of longer duration increase the chances of greater impact (if appropriately designed) and the likelihood of that impact being more sustainable.

However, some interpret CSR as implying ‘sustainability’, something of a trendy buzz word in development circles and more recently, the mining world. For example, FQML optimistically entitled its 2013 annual report as ‘Sustainability Report’ and Lumwana named its social section the ‘Sustainability Department’. In practice, CSR social inputs, unless enmeshed with government systems, and, most importantly, budgeted for, may not be the least bit sustainable once the external inputs cease.

Another issue was that the major mine areas were receiving multiple inputs while neighbouring districts were not doing so, adding to the inequity which inevitably arises in mining situations. It is doubtful that there was any evidence of national resources being re-directed to those neglected areas to balance the situation.

The question of definition of boundaries for a mine’s assistance presents a quandary for they cannot be expected to solve all of a province or district’s needs. Kansanshi and Kalumbila were fairly specific in deciding on their area of responsibility as their immediate neighbourhood whereas Lumwana was more inclusive, covering three chiefdoms even though mining only directly impacted one. The downside of the latter approach is that CSR contributions are very widely spread, with their impact (perhaps) somewhat dissipated.

Just how long support should be provided for is another un-answered question.

On a different note, companies were naturally very happy to publicise their ‘good works’ wherever they could. But there was minimal information publicly available about project monitoring results and the lessons learnt. Lumwana put a very detailed monitoring system in place in 2007. It also produced quite detailed quarterly social reports which are discussed at regular meetings with its government and community partners.

These reports describe achievements for that period and also (tactfully) hint at the implementation challenges which were often encountered. Issues were usually not of their own making but represented the reality of working in such rural and traditional environments. Kansanshi developed its first Social Management Plan in 2011 and reports descriptively and in a summarized fashion on a monthly basis with the information widely shared, but the reports would benefit from being more analytical. Kalumbila has been developing its monitoring plan and reports to adequately report progress and identify constraints to effective implementation.

It would have been useful if an independent body could have maintained an overview of the CSR activities and reported on their effectiveness but this did not occur.

Designing and implementing plans require dedicated staff with programme planning and monitoring and evaluation skills, or access to consultants who have such. The same goes for local government which should be overseeing all such activities and reviewing progress on at least an annual basis. The District Development Committee does not appear to have the capacity to undertake such in-depth analysis. The reality is that managing such wide-ranging programmes is a lot of work, and even more so in the complex and stressful environment of mining communities. Also, neither the companies nor governments, are very good at airing their weaknesses or discussing the challenges they face - sometimes because it might reflect poorly on their hosts or their own weaknesses. But the sharing of frank information on the experiences of all three social programmes, and admitting mistakes and addressing them, would help to make future CSR more meaningful and effective – if the lessons learnt were followed up on – and if government had the resources and political will to address its own responsibilities.

Related to this topic is the issue of unrealistic objectives for some projects. Developed with the best of intentions some tended to over-estimate the conduciveness of the context in which they were being implemented. Hence, disappointingly, many experienced inevitable issues. Examples included the painful efforts to set up MFEZ's at Lumwana and Kalumbila.

Another question is how a company chooses how much will be provided for CSR and what that decision is based on. As CSR is currently voluntary, government has no say in the matter. Logically a certain percentage of annual profits or expenditure, or some other measure, would seem to be the answer, and contribute some transparency to the subject. However, such an amount would vary from year to year.

The definition of what constitutes CSR is also unclear - activities such as road building and upgrading airports do benefit some local people at times, directly or indirectly. However, their prime purpose is not community benefit but to enable corporate business. Such mis-categorization is common. The ICCM has failed to question this practice and in fact mis-used such data from two North West mines in its 2014 report, thereby providing misleading information about how much particular mines were contributing.

It is tempting for a company to inflate CSR contributions and such a practice suggests that a company may be pushing public image promotion, especially when dressed up in glossy magazines and focussing just on the positives. But in a way it is difficult to blame companies for doing this given that globally mines frequently have a very poor reputation (sometimes, but not always, well deserved). Consequently, they have to constantly fight to demonstrate that they have 'earned their social licence' in such a negative climate. Also, if they don't proclaim their contributions then who will – it is unlikely to be government.

A recent paper published by the Harvard Business Review (2018) discusses this dilemma and ways of more effectively reaching different types of audiences. A related point was that, as Frederiksen (2017) noted, 'CSR spending can be written off against tax contributions as an operational expense... ', which, if so, would encourage the mis-categorizing of activities.

Writing about the subject more broadly, Frederiksen has commented about the enormous amounts being contributed, 'All [such contributions] have failed to shift the long-running perception of mining simply not paying its way. The national debate on mining has almost entirely focused on taxation and rents; [positive] environmental and social impacts remain a [neglected] sideshow.' CSR contributions have undoubtedly been under-appreciated in such discussions, just as the reverse has happened at the community/NGO level where company contributions to the national level have been unrecognized.

Another question relates to the irony presented by companies which allocate CSR support, on their own volition, to the preservation of flora and fauna while at the same time, devastating another area of the environment with their mining activities, and potentially or actually, causing pollution. Such well-meaning assistance maybe helpful to Zambia and provide some employment. However, one needs to ask if such support is a local priority given that humans affected by the advent of mining still have many unmet needs which should, perhaps, take priority. One could also relate the question back to the make-up of the CSR decision making body, asking how inclusive it is and what it bases its priorities on. In some cases, they appear to have been related to personal interests of management rather than to an analysis of local needs and priorities and cultural appropriateness.

An important aspect of social programmes is their management, for they are complex matters requiring considerable administrative, managerial and social science skills, as well as experience and understanding of local context. This is why social teams have been headed by expatriates but staffed with Zambians who have experience in dealing with community projects and a good understanding of local culture. High level social science and analytical skills are not common in Zambia, as is evidenced from the often weak EIAs and other reports. ZEMA has itself recognised this issue as evidenced by its Press Release of 21st February 2017 regarding its 'Call For Submission Of Profiles From Environmental Assessment Consultants And/Or Firms' (GRZ/ZEMA 2017). It is a capacity which needs to be strengthened nationally, especially as a mining boom provides many jobs for those with such skills.

In short, there have been some short comings and constraints experienced in the management and implementation of the CSR projects, not always the fault of the companies. But it is very clear that the large North West mines have contributed significantly to improving the availability and quality of local social services and contributed to economic enhancement in all sorts of ways. They have in practice become de facto development partners, sometimes in ways which were much more efficiently achieved than could be carried out by the local authorities. This was usually because they were so much better resourced and had far less 'red tape' than government to deal with.

The reality was that not everyone living in the mine areas could benefit, either communally or personally. No amount of company CSR could overcome the inherent constraints to development which included the extent of the population influx, the nature of the local population, the inadequate state of local government, infrastructure and the level of political interference.

Company Social Teams

The Mining Companies, then as now, were veritable weathercocks. They were free with advice at both director and local level. They pictured themselves as tough, practical men only intent on getting copper out of the ground: men with rolled up sleeves and hairy chests, men who had come up the hard way, while University dilettantes fiddled with minor matters of administration. They failed to grasp that copper cannot be mined entirely by machine, and that they had to contend with great numbers of human beings, living close together, not scattered in villages, and fertile ground for new ideas, good or bad. Irascible and inflammable also. (Short, 1973)

This picturesque description by former District Commissioner Robin Short succinctly reminds us of the importance of mining companies recognizing the key role that social teams play. They should be regarded with equal status along with the engineers and other technical specialists who deal with the hard side of mining. Social teams need to be equally well equipped and resourced for it is also a specialist area. Their neglect can result in problems which constitute a significant risk to the company reputation. Issues which arose during this past decade illustrate this point only too well, with many lessons being learnt. It appears that the importance of their roles came to be better appreciated by senior managements, but in the meantime many un-necessary issues were experienced.

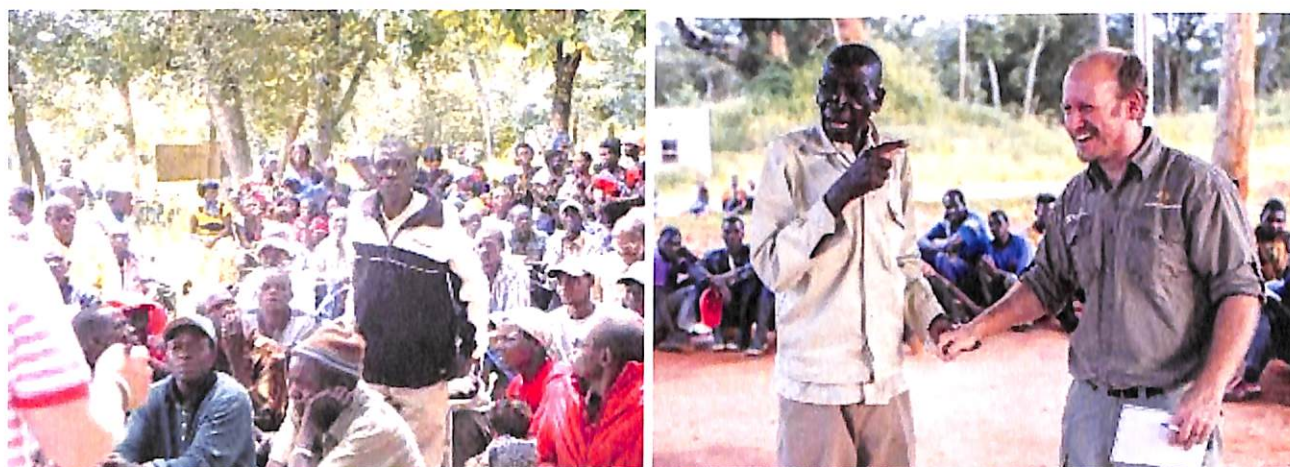


Fig.159: (L) Senior Headmen of Wanyinwa Village, Singlestone Munswala speaking out at a community consultation in 2011. Credit: KML. Fig.160: (R) Seven years later Mr Munswala was still challenging social manager Garth Lappeman, but now in a very collegial manner, with mutual respect. 2018. Credit: KML

The above photos serve as a reminder about the importance of effective communication between community leaders and the social staff and how that relationship matures over the years as understanding increases about what is happening and what is required. Mining impact brings together two very different cultures and inevitably is not going to be an easy process, especially as initial understanding is low and expectations are very high. It is very challenging for the social staff and requires considerable patience, tact and diplomacy, and a keen appreciation of the situation of local people – personal skills which are above and beyond mere academic qualifications. Figures 159 and 160 suggests how such relationships can mature over the years. Working together since 2011 these two players got to know each other rather well over the years. Initially the community was very antagonistic and their leadership combative but by getting to know and learn to respect each other and as the local people got to better understand the reality of the situation they eventually developed a warm and respectful relationship, even if they still don't quite agree with each other all the time.

Building on from this discussion in order to assess or to understand the impact of a mining boom it is useful to recognize the stage which developments are at:

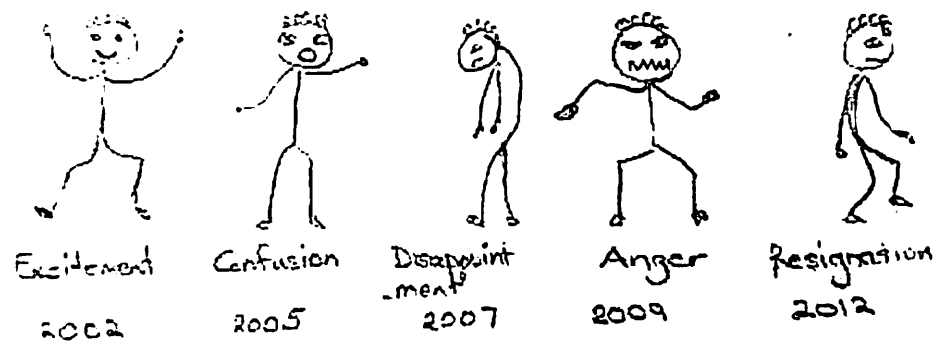


Fig. 161. The stages of mining impact, using Kansanshi dates as an example. (O'Callaghan, 2019)

It was apparent from reviewing the experience of the decade that people tended to go through different stages in their reaction to a mining boom, depending on the phase developments were at. This example uses (approximately) Kansanshi dates:

- Initially when it was apparent that things were developing regarding the revival of the old mine site there was a strong sense of excitement, of anticipation of good things to come (despite knowledge of what happened on the Copperbelt).
- During the second stage, as the pace of change increases and lots of things are happening it can become very confusing, especially when communications are poor.
- In the third phase disappointment sets in as the instant benefits which were hoped for don't happen or only do so in a sporadic manner.
- Such a mood may progress to anger that the company and/or government and the traditional leadership are failing to protect people's rights and to improve well-being. A strong sense of blame is prevalent, but not necessarily directed at the right agency.
- The final phase is adaption and an acceptance of the reality that for most people life is not going to improve dramatically because of mining. This includes beginning to understand that not everyone can have a job on a mine and that there may be some useful opportunities available outside a mine site.

It is therefore important to understand what phase a mining community (or communities) are in when viewing their situation and making judgements. Without this understanding of such phases it is easy to misinterpret what is going on and where communities are at in their capacity to cope with the changes. This also applies to government and the companies as they evolve in their understanding of how to deal with each other and the pressures that a mining boom inevitably brings.

Further in regard to the skills and knowledge required for social teams it is apparent that it is very important to have a mixture of both high-level professional expertise (which is not likely to be available in-country) and local knowledge.

As described in a paper by this author (O'Callaghan, 2018a) there is a need for a country with a mining boom like Zambia to train up local people and apprentice graduates to mining impact experienced professionals in order to build social capacity and experience.

Also, expertise in the social sciences needs to be complemented with programme planning, monitoring and evaluation and reporting skills and also by a capacity for cultural sensitivity, patience and good leadership. These are skills to be valued in a mining boom and can only be fully developed through years of learning under an experienced manager.

Local understanding is also essential and this creates a need for a different cadre of staff on the social team – local people who have to work across both the corporate and local cultural, governance and political worlds. They play an essential and valuable role as intermediaries and interpreters. But this is sometimes, perhaps often, a very sensitive and difficult role which can put them in a very stressful position as they try to straddle the two very different worlds. The importance and challenging nature of their role also needs to be better recognized and appreciated.

Resettlement Housing and House Ownership Arrangements

The issue of suitable resettlement housing never seems to have been adequately resolved or dealt with in a coordinated way, or with cultural issues taken into account. No research or discussions were undertaken about what style would suit rural people, designs apparently being based more on cost and materials. Only the Kabompo Hydro development facilitated a choice in the matter of style of housing, even taking community representatives to Solwezi and Manyama to look at options (although that resettlement has yet to reach fruition). It is not apparent that the company planners took into account the factors behind the traditional layout of villages, including the different purposes of structures and who lived where, which way their door-ways faced and why, and that most social life took place in the central area, in nsaka's. However, the communities being resettled may not have all been traditional groupings anyway and the Kabompo Hydro people actually expressed a desire for a modern town set-up, 'like at Matero' (a planned Lusaka suburb) they said. So, driven by the wish to be seen as 'modern', cultural practices may have been to be evolving, and in this regard at least, less important than in the past.

While the houses provided by Kalumbila were solid and weatherproof they did not easily accommodate extended family and traditional styles of cooking. Their solid nature, although much appreciated, also implied a non-traditional static lifestyle. This was a form of modernization which would require a considerable period of mental adjustment.

However, even though the houses provided may have been modern in style they did not include modern services such as sanitation, tap water and electricity – a big disappointment for some, although outside VIP (improved) latrines were included. But such services are expensive to establish and then to pay for – and few could afford to do so.

Both Lumwana and Kansanshi's Kabitaka's experiences with helping staff buy their houses also faced issues which needed to be discussed and reviewed. It might have been helpful for all parties if these housing issues had been on a common planning/policy discussion agenda, so that experiences could be reviewed and lessons shared.

Enclaves

The reality of an industrial world of mining meeting traditional rural communities in isolated rural areas will inevitably demonstrate stark inequalities. This is especially so in regard to the staff enclaves which have been built. In order to attract highly skilled, experienced senior staff and because of the shortage of high-level expertise in-country many of them will have to come from out of the country.

Without modern facilities they would not take up such jobs. Consequently, there is a need to create modern facilities, including high standard housing, schools, health, education and social facilities (Figures 162 and 163). This approach is 'family friendly' and a better alternative to practicing the alternative 'fly in-fly out' approach which has far less economic benefits for local mine communities.



Fig.162: The Kansanshi Golf Club up on the hill above Solwezi town – a very different world from that below. 2013. Fig.163: (R) Comfortable house for senior management, in foreground, Kansanshi, 2014.

An often unrecognized benefit of such facilities is that they create local employment for house maids, nannies, gardeners, waiters, cooks, security staff, maintenance services and so on. Whether it is North Western people who are employed is another question – they may not be. But for every resident family as many as three Zambians may be employed. Their presence also stimulates the local economy in other ways, such as for food and beverages, and household supplies. Such facilities also create land sales or rents and other fees which benefit the local Council.

Solwezi had no such facilities in the early 2000s and the transformation prompted one observer to remark that 'Salisbury had come to Solwezi', referring particularly to the influx of Zimbabweans (and South Africans). Negi (2011) reported one of his informants as saying bitterly 'This is apartheid ... Kansanshi has created another Cape Town.' But again this was not so different from Kabalonga in Lusaka. Some South Africans were also opening up businesses such as supermarkets, adding to the sense of a foreign invasion but making it no different again to Ndola or Lusaka. Such opportunities were also available to cashed up Zambians, but few seemed to be taking up the opportunities.

Enclaves are an elitist practice but any Zambian negatively judging such developments might remember that their own society is also very elitist and the well-off live in equally segregated areas and send their children to expensive private schools. Also, if observers looked closely they would observe some well-educated Zambians amongst those enclave inhabitants. It is also no surprise that many expatriate staff come from the region, especially given South Africa's longstanding mining industry, industrial capacity and expertise – and its own economic downturn.

Learning From Each Other

Because Kalumbila was the third big mine to be built, and other developments were occurring, some of the lessons were being learnt, including about benefits. One example was where, in 2007, some three years before Kalumbila came onto the local agenda, Senior Chief Musele had been arguing for a much better deal than government was currently providing. This was in regard to the proposed Chitungu Road development. The project did not proceed but the Senior Chief gained some experience in negotiations with the company.

The timing was such (2007) that it is possible that he had learnt from the recent experience of the Lumwana and Kansanshi Chiefs, and he was prepared to be assertive and fight for a better deal. He exhibited similar assertiveness in his negotiations about Kalumbila, more so than any other Chief had done before, although the Lumwana Chiefs had also tried, against some opposition, to increase their equity. These experiences remind of the importance of, firstly, Chiefs having experienced support for their negotiations. Second is the need for having resolved at the national level, in conjunction with other community representatives (i.e. not just Chiefs), the issue of what are fair arrangements for mining communities so that more equitable deals are made. Ad hoc, non-transparent and private negotiations with Chiefs would then be a thing of the past.

Communities also learnt from each other, enabled by the increasing availability of mobile phone networks and support from NGOs. They shared experiences at ZAMI's and some took community action about their rights needing to be met.

The companies occasionally shared experiences including in 2017 when Kalumbila social staff travelled to Lumwana to learn about their approaches, including the processing of cooking oil from groundnuts. But it is a pity that such sharing did not happen earlier, and also with Kansanshi and the medium sized mines – the latter largely appearing to be in an isolated world all of their own.

However, as discussed above, the subject of suitable housing did not seem to be shared. Also, how much local government learnt from dealing with the expanding number of large mines is not known. Issues related to the advantages and disadvantages of having land title could also have been usefully discussed.

Advocacy Support to Mining Communities

It is apparent from the experience of the past decade that mining affected communities and their leaders needed to have had an advocate appointed to help them deal with the changes which were to take place. This support should include the Chiefs and Sub-Chiefs being provided with administrative and logistical assistance. They also need, along with their people, to be provided with information and possibly field visits to other mining areas to obtain first-hand experience of what is likely to eventuate.

Such support should come from mining impact experienced professionals who can guide them on the legal aspects, their rights and the practical aspects of the forthcoming changes. This assistance should be provided at the beginning the EIA process, handing over as the company social team takes up its responsibilities. Given the level of expertise required it would probably require an international with a local intern who acts as intermediary and also gains experience in such processes.

The cost could be shared between government and the company. As it was, any advocacy that happened during the past decade came from NGOs, and while very helpful at times, it tended to be somewhat ad hoc and not always timely or comprehensive. The most useful form of assistance needs to be present right from the beginning

Issue of Meaningfulness of Community Consultations

Despite all companies, mining and otherwise, dutifully following the EIA requirement for community consultations to be held one can't but wonder how meaningful they were. The most detailed record of such meetings was those for Kalumbila in 2011 and 2012.

They revealed a myriad of useful insights into local attitudes and concerns. But as with the many other such consultations it was far from clear if the people being consulted actually understood the implications of what was going to happen.

This was especially so when relocation was involved. Showing a map of the intended changes is unlikely to be meaningful to people whose view of the land around them is quite different, being related to identifying features such as rivers, tracks and trees from the ground level. A physical tour of the areas to be affected might be challenging to organize but is likely to have more meaning even if the whole picture was still somewhat obscure.

An unintended bonus was that many local people appreciated the rare opportunity to speak their minds about local issues and have someone take them seriously - especially since government or their MPs never or rarely did so. But just how much they understood the social, physical and political changes which were coming it was far from clear. For those who were used to moving freely around their territory the advent of a mine in the middle of their land was going to be a very different experience. Also, some - perhaps many people misunderstood the nature of such meetings, thinking they were about compensation - and reminding how the focus is so often on the monetary aspects of the changes - not about the reality up social upheaval. Hence the shock of the reality when the changes do eventually occur.

In line with the idea of seeing is closer to believing travelling to an existing mine site to view it and consult with affected people might help but for logistical reasons it would have to be restricted to a sample of a community. However, in the case of the Copperbelt mines, their conditions and experiences would be quite different from those to be offered by a new, modern mine. Also, discussions too with local communities might well veer off onto the subject of compensation rates and distract from the nature of the real changes. Both the Kabompo Hydro (regarding housing styles) and Lumwana (re uranium mining) did send community representatives to other places while Kansanshi sent a team of Chiefs to Zimbabwe to view conservation farming. It would be insightful to know how helpful those visits were. But the majority would have to hear about their experiences from second hand. Having a senior local person who understands the situation speak out (such as the Mayor of Solwezi did at Kalumbila in 2011) might be somewhat helpful, and possibly even a movie.

Land Title

There were disadvantages to only have customary title, such as not being able to obtain bank loans or sit having monetary value and being able to sell. But as Action Aid discovered, local people could easily be disadvantaged by the temptation to sell their land. The subject is obviously an area that needed looking into in more detail.



TOTAL NUMBERS DIRECTLY AFFECTED

Table 5 provides an indication of how much farmland and forests was lost from 2002 onwards and how many people and assets were affected. This table includes the hectares taken up by mine sites and staff housing and other facilities and the tailings dam areas.

A total of about 5,000 people were directly affected and approximately 311,000 ha of land alienated by the three major mines under their mining licences. The smaller mines together contributed over another 50,000 ha and possibly as much as 90,000ha. The total constituted approximately 3% of the province's total area, according to the 2013 licences data. It is to be noted that some of the licenced land still remains at least partly forested, especially at Kalumbila and Lumwana. Additional land was licenced for exploration which may impact on local people, especially in terms of raising expectations of future developments. Most of this land will never become licenced for mining but its use maybe put on hold in the (often false) expectation that it will be mined.

The size of actual mining licenced areas presents a quandary. This is because it is likely that the actual mining will clarify in much more detail the extent of a mineral deposit and may indicate that there is a need to expand beyond the original pits. Consequently, the area must leave room for expansion – just how much is the big question for a company, especially if the area is populated and farmed. Kansanshi did need to expand slightly during the first decade, and Lumwana considered doing so at one stage while the Intrepid at Kalumbila remained an exploration site and some of the total licenced land was reduced by GRZ. In other words, the situation may not be static. Lumwana also had the odd situation of Chief Mukumbi's palace being maintained within the licenced area.

However, it is possible to say, approximately, that the following were directly affected during the decade:

- Over 5,000 people were relocated
- 6000 ha of farm plots which may or may not include productive, fallow fields or newly cleared ones
- Most lost access, to varying extents, to some services, rivers and forests, and some churches, small shops, temporary farm structures, water points, cemeteries, stone and sand pits and grazing land were affected.

All were compensated in one way or another, including financially, with rates set by GRZ. Some were provided with replacement structures e.g. new houses and services such as schools, clinics and roads. New land for farming was meant to be identified by Chiefs or government. If the railway had eventuated many more people and hectares of land would have been affected in a narrow, linear fashion.

Another factor regarding the loss of land is that the rapid informal population increase around the mine areas, including the influx of outsiders, has and is causing over-use of nearby forests by the rampant cutting of trees for charcoal, fuel and building and over-harvesting of fruits and small mammals, thereby destroying habitats and reducing future availability. It is to be noted that licenced areas might not all be mined, or used for tailings, and may never be fully affected. Also, licences may expire and not be renewed. All mines take up land, not just for the mine pits, plants and administration offices but also for tailings, for access to water supplies, access roads, for housing, schools and clinics. Sometimes business-related developments may take up additional land.

PART THREE

RELATED DEVELOPMENTS ALSO IMPACTING

It was not just the three big mines which impacted on the North West social, physical and economic environment. Other developments have also occurred as a direct result of the mining boom. This section describes the following significant examples:

- Description and Analysis of NW Mining Licences
- Infrastructure projects:
 - Powerlines projects and Kabompo Gorge Hydro-Electricity project
 - The Proposed North West Rail project
 - Roads
 - Trucking Industry
- Business Developments, Employment Opportunities and Skills Development

As with the smaller mines, none of these developments attracted anywhere near the same amount of attention as did the three large mines. This was so even though these activities have also often involved much investment, planning and consultation, the taking up of land, and, to varying extents, have caused various disturbances. Some impact has been positive (e.g. some increased employment opportunities and payment of compensation) and others negative (like damaged land, social disturbances and raised expectations). Despite having commenced extensive preparations years ago, two major infrastructure projects have still not come to fruition or been completed, such as the North West Rail (2006+) and Kabompo Hydro (2008+). Other developments, such as the housing boom (and its related demand for labour and sand and aggregate), have been described under the descriptions of Solwezi, Manyama and Kisasa.

Some of these projects also required an EIA to be undertaken, incidentally adding further to the provincial data base, including for areas away from the main focus points around the three big mines. Interestingly, despite the disturbances they have caused, none of these developments have been the focus of NGOs or researchers, as far as can be determined. This is perhaps because donors have been focussed on supporting reviews of mining impact and no one has drawn attention to the other developments.

DESCRIPTION AND ANALYSIS OF THE NORTH WESTERN MINING LICENCES



Figs.1 and 2: The initial phases, exploration and prospecting. Credit: C. William's power point, 'The Story of Lumwana', c 2012.

Overview

The main focus of attention during the decade has been on the three previously described large scale mines but there have also been many other mining related activities, including much prospecting and exploration work (Figs. 1 and 2) as well as the development of a few medium and small scale mines and much artisanal mining going on (both legal and illegal).

This overview is mainly based on data from the 2009-2014 Ministry of Mines' licences data bases for the province (GRZ Cadastre Office, 2009-2015), and as included in the annual *Zambian Extractive Industry Transparency Initiative* (ZEITI) reviews. It should be noted that the information on the Ministry data base is not entirely accurate, for the following reasons: The data base may have been slightly out of date because some licence holders had not renewed their licences and the information had not yet been updated. Sometimes an entry in the data base was incomplete, some licences were being challenged in the courts and others were under Ministerial review. Many were inactive with the land just being held in a practice known as *land banking* whereby an optimistic novice licence holder (or speculator) waits for a genuine mining company to buy them out. The Mining Minister reported in Parliament on 19th June 2013 that there were '... in excess of 100 licences earmarked for cancellation' because of non-development...'. (Yaluma, 2013).

Some deposits were more genuinely not developed because of failure to find an investor, and/or because of the prevailing global price and issues related to infrastructure which did not make development worthwhile. The nature of the region's geology, as described in the section 'Not the New Copperbelt', was another factor.

It was also known anecdotally that many other people were prospecting, exploring or even mining without a licence, mining with only a licence for prospecting or undertaking unlicensed artisanal mining. In addition, numerous un-registered rural and peri-urban families were carrying out small scale quarrying with hand tools, especially for aggregate, in response to the greatly increased demand for building materials.

Despite the inaccuracies the licence data does give an overall idea of what had been happening in the province over part of the decade.

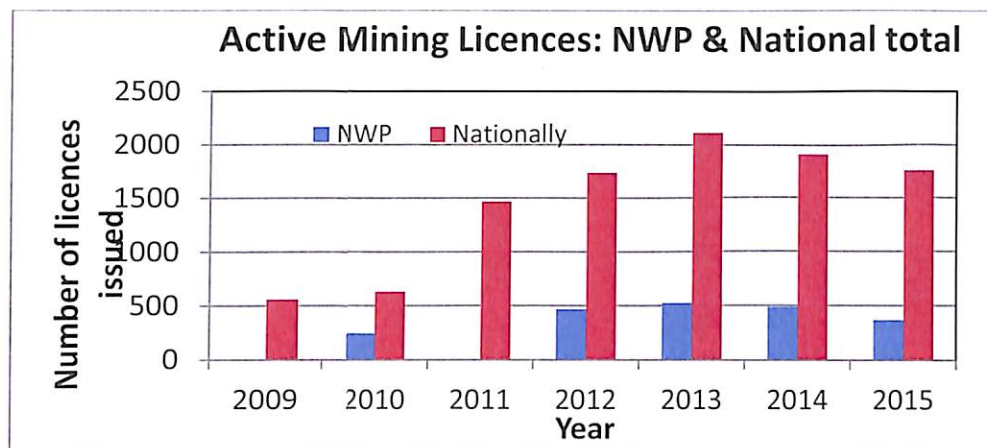


Fig. 3. Active Mining Licences: NWP and National Total. Source of data: Ministry of Mines annual data bases, as reported in annual ZEITI reports. (2011 and earlier NWP data was not made available). The missing data for 2009 was about 20 and for 2011 it was 257 licences.

Figure 3 provides a summary of the number of licences being held nationally and for the North West, with the total number increasing rapidly from 2009 and reducing slightly from 2014. The sudden increase in licences also supports other evidence that the registration system became overwhelmed by the demands during that period, including the sight of the cramped Cadastre outer office crowded with applicants, desks being piled high with application folders and staff stressed out by the demands being made on them. It took a couple more years before measures were put in place to rationalize registrations, including cleaning the registration data base and cancelling those prospects not being developed. By 2014 there was also a much-needed expansion of office space and an increase in the numbers of staff.

The decline after 2013 is likely to have been due to the Ministry finally managing to institute the rationalization of the licencing processes and catch up with the backlog. The increase in the cost of licence fees may also have played a role in reducing the demand, as may have been an increasing realization that mining was not for amateurs.

North West figures follow a similar increase and decline, as also illustrated by the following graph (Fig. 4). There may also have been a growing realization by amateurs that a licence not based on the proper examination of a prospect was not worth holding. Following an initial burst of interest by the Chinese in the North West there was also reported by observers to be a decline in their involvement in the latter part of the period.



Fig. 4: Total NW mining licences for 2011-2015, plus 1999 which had approximately 20 licences. Source: Compiled from GRZ Cadastre data with the 1999 data from the Licence Area map.



Figs. 5 and 6: Aggregate prepared by local families ready for sale, in rural and peri-urban areas. Solwezi, 2014.



Fig. 7: (L) Un-licensed small scale mine, Kasempa area. 2012. Fig. 8: (R) Luamata Mine in Mwinilunga District was closed down by the owner around 2008 because it was uneconomic to mine at that time, but it was observed being worked informally by hand by local people in 2012.



Fig. 9: (L) A disused pit at medium sized Jfumpa mine, Kasempa District, but mining was continuing in another area nearby, 2012. Fig. 10: (R) Tourmaline deposit close to the surface, Mwinilunga District. Credit: B. Ankar et al, 2006.



Fig. 11: (L). Artisanal mining, Solwezi district. Credit: R. Banda, Caritas Solwezi, 2013. Fig.12: (R). Artisanal mining, Solwezi District, with very basic and dangerous working conditions, 2013. Credit: R. Banda, Caritas Solwezi.

The numbers of North West licences held as shown in Figure 4 constituted a significant increase from 1988 when there were only four and in 1999 when there were less than twenty, according to the Republic of Zambia, Prospecting, Exploration and Mining Licence Areas map of 1999. Un-fortunately it was not possible to obtain numbers for the early part of the 2000s but presumably they gradually or even rapidly increased.

Matching the increase in global mineral prices, Figure 4 clearly indicates that there had been a commensurate boom in North West licences being applied for and granted. In typical mining boom-style the talk of high prices and the presence of many exploration teams roaming the countryside appeared to have inspired many local people to rush down to Lusaka to also obtain licences (there being no decentralized service).

Table 6 provides an overview of the different types of licences held in the NW as it pertained in 2014.

TABLE 6: NUMBERS AND TYPES OF ALL NWP LICENCES BY TYPE OF HOLDER – 2014									
Source: The GRZ NWP Data Base									
	Prospecting Permit	Prospecting Licence	Small Scale Mining	Large Scale Mining	Artisanal Mining Rights	Small Gemstone Mining	Bidding Area*	Total Licences	% of total
Zambian Individually owned licences	31	23	20	1	14	8	NR	97	20%
Zambian company licences	69	191	38	1	NR	6	0	305	63%
Other International Company licences	NR	31	NR	14	NR	NR	1	46	9%
Chinese Company licences	NR	30	5	1	NR	NR	3	39	8%
TOTALS	100	275	63	17	14	14	4	487	100%

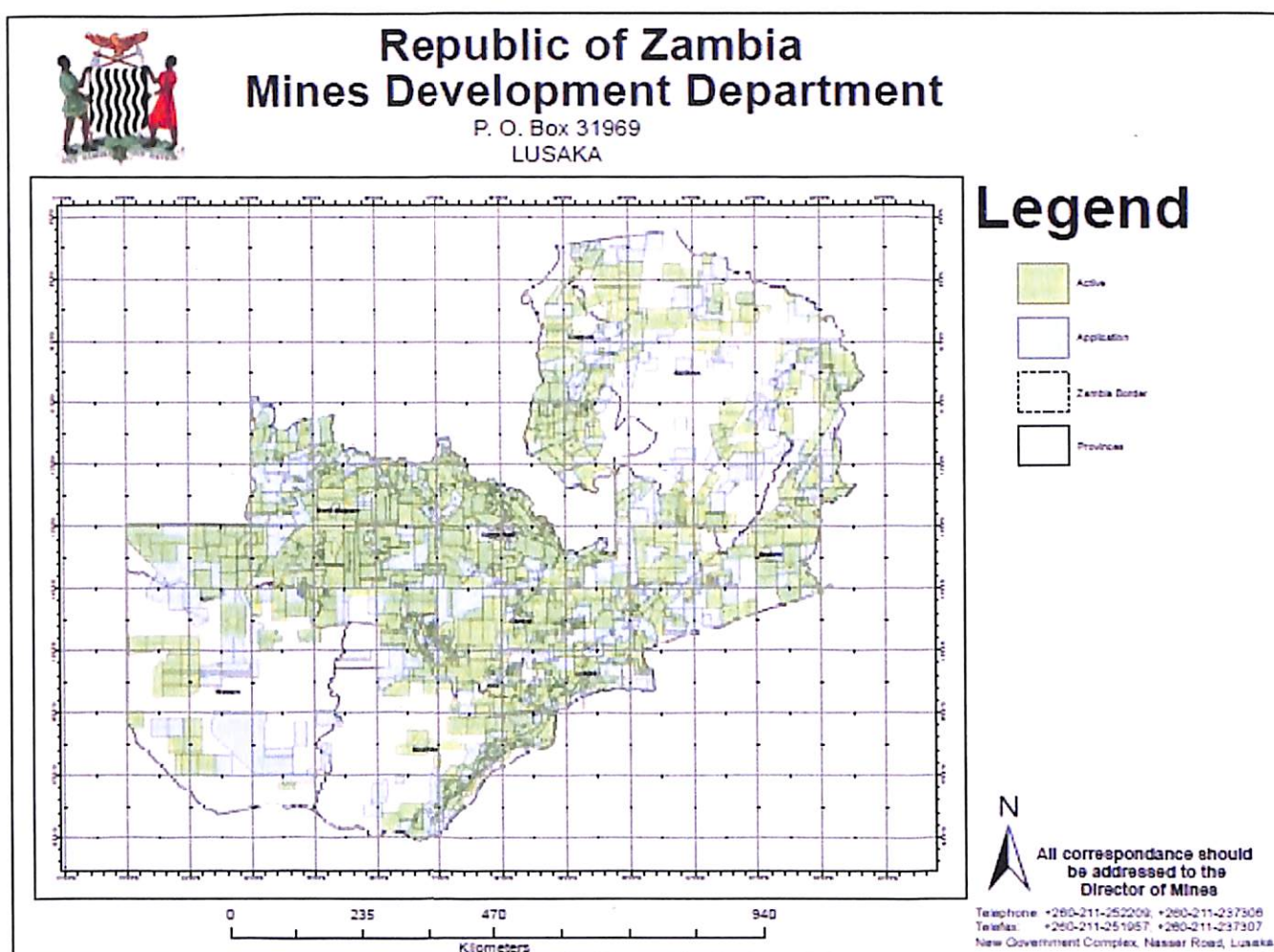
NR: Not relevant

*Bidding Areas (BA) have since been phased out.

There may be some small errors in definition between Zambian and 'Other International' companies. Where the international partners is the main player (all cases?) they have been counted as international.

Some companies and individuals have more than one licence

It is clear that there were far more licences (78%) for prospecting (both permit and licence) than for any other category. Thirteen percent were for small scale mining and 3% for large scale mining. Fourteen licences (2.8%) were for artisanal mining and similarly for Small Scale Gemstone mining, with Bidding Areas (since phased out) constituting less than one percent. In later years there were refinements in the categories, differentiating exploration from prospecting and large from small scale and also for gemstone mining.



Map 20. Cadastre Map, 2013, illustrating the almost 100% coverage of NWP by active licences (green) and applications (blue). Credit: GRZ, Ministry of Mines.

Another issue was, as the 2013 cadastre map (see Map 20) graphically illustrates, that so many licences had been granted that they almost completely *carpeted* the NW province, a term author Paul Cleary (2012) once used about the Australian situation. The extent of the coverage was of great concern to one Chief in Solwezi District who had seen the map and was very worried that his people were going to lose their farming land and forests and that he would have nowhere to move them to when new licenced areas were granted. Another potential problem was that in some cases farmers may have been delaying or stopping planting in anticipation, consequently affecting food production, or alternatively planting and building small structures in the hope of being eligible for compensation. The extent of these potential problems does not appear to have been studied. Presumably the issue was also affecting other Chieftdoms.

Figures 5-12 illustrate the types of smaller scale mining which were going on at this time. Also, even maintaining a licence without doing anything is time consuming and costly, and such a situation is not legal as a mining licenced site is required to be developed.

Other analysis of the individual 2014 NW licence records showed that the majority of prospecting and mining licences were focussed on copper and a variety of other minerals, including gold and uranium, while a handful were for gemstones, including emeralds, tourmaline, amethyst, aquamarine and quartz. Building materials were the focus of about 14% of licences, most being for prospecting but including the mining of sand, aggregate, clay, laterite, limestone, talc and rock slab stone, such as marble and granite.

About 39% of all licences were for Solwezi District, a quarter for Mufumbwe, 19% for Kasempa, about 14% for Mwinilunga and the remainder for Zambezi and Chavuma.

The data also provides an indication of the type of involvement by the various parties and some of the associated issues. These include the extent of local and foreign ownership and genuine, experienced companies, compared to local amateurs keen to cash on the boom.

Of particular interest is that Zambian individuals and companies held about 83% of the total licences – however, it is thought that most of them would have had no expertise in mining. About 8% of licences were held by Chinese and about 9% by other international companies. However, the situation was not static as licences changed hands, some had lapsed and others were challenged in court.

But despite the plethora of licences being held by 2014 there were only three very large-scale mines functioning and only a handful of medium scale ones, such as Jifumpa and Kalengwa, were mining, or like Jimbe and Chinfunshi, were being developed. Excluding the numerous small-scale mining efforts, including artisanal, it was more of a boom in prospecting and exploration than in mining

In terms of locations most licences for both prospecting and mining were in Solwezi district but prospecting occurred to varying extents in all districts.

- Prospecting was taking place in all districts but predominately occurring in Solwezi, followed by Mufumbwe and Kasempa districts
- The majority of licences owned by individuals were held in Solwezi district
- Mining was taking place in four Districts (none in Zambezi and Chavuma) but predominantly in Solwezi district
- The majority of Zambian owned company' licences were for Solwezi District, followed by Mufumbwe and Kasempa districts. The least were in Chavuma.
- Chinese companies held 12% of all the licences in Kasempa district, including one large scale mining licence, the largest number of Chinese companies in any district, but they were also represented in Solwezi district, with about 6% of the licences held (all for prospecting).
- All (licenced) artisanal mining was being undertaken in Solwezi district.

The Non-Major Mines and Prospecting/Exploration

While the activities and impact of the 'big three' mines are well publicised, far less was widely known about were a dozen medium-small sized mines in the province which rarely attracted media or other attention. This was partly because they were scattered in rural areas considerable distances from officialdom in Solwezi town. Some such as Jifumpa and Kalengwa, had been functioning on and off for decades.

Others such as Samuteba, Njenja, Sinozoncha and Luamata were functioning for some years and some or all have ceased work because of economic factors. Chinfunshi had been licenced since 2008 but had been very delayed in moving into production, while Kametete, Katokamena and Jimbe were relatively new. Most have had little or nothing written publicly about their functioning, except where they have had serious legal problems, such as at Katokamena and Kalengwa. The Kasempa District is reported to be rife with serious issues and needs to have much more light shed on the situation, at all levels.

Another issue is that it is highly unlikely that any of the mining areas shown on the opposite page here will be restored when work ceases, if it hasn't already done so, such as in the old Jifumpa pits. The same could be said for the many even smaller un-photographed sand and aggregate mining areas. This subject is an issue which has yet to be raised, and which is likely to constitute a widespread problem, of varying sizes, creating safety hazards for people and animals and mosquito breeding grounds, not to forget the ruining of potential farming areas.

But even prospecting and exploration also impacted on local communities, in both negative and positive ways e.g. by creating uncertainties, raising expectations and disturbing farming and other land. Also, Chiefs having to sign prospecting or exploration papers tended to create confusion as well as raising expectations, as Chief Sailunga complained at a Kabompo Hydro EIA meeting (Kabompo, 2011). Caritas Solwezi also reported that there was, on occasion, little (or even no) consultation with local authorities before the would-be miners obtained their licences in Lusaka. Consequently, their sudden appearance waving licences was a shock for the local residents who had been completely unaware that their land had become licenced. There were also reports from a Chief and a Parish priest of some company personnel producing false papers, as also noted by Caritas Solwezi in 2009 in their draft Baseline Information survey. Disputes over licences and Chiefdom borders also complicated matters, some of which ended up in court and caused issues for Chiefs and much acrimony within communities.

In addition, official surveyors were sorely pressed to meet the demands being made on them by the greatly accelerated demand. Chiefs and District Commissioners also reported not being aware at times of what was happening in their own areas. They reported lacking access to up-to-date licence data, as well as to the cadastre and the Chiefdoms maps i.e. they were not equipped to adequately monitor what was going on., let alone be trained in how to cope with the many new demands. It has been said by some that the resulting ignorance and confusion had its advantages in that infringements could be easily got away with. In regard to the smaller scale mines sources such as interviews, media articles and NGO reports indicate that at least some of them, while providing some local employment, have been operating using poor standards, have caused serious problems for local communities and practised illegalities. The Caritas Solwezi project has provided worrying information on some cases as did others at the 2008 Mining Watch meeting in Solwezi (CSPR/Caritas Solwezi, 2009). Caritas has also reported that some small companies were ignorant about CSR and even asked them for help in this area.

Small scale mining was associated with many issues. They included the challenges posed to Chiefs regarding approving mining activities to companies with unknown capacity, the role of 'middle-men' who liaise between Chiefs and other landowners and companies and the exaggeration of employment potential in proposals for mining. There were also the logistical challenges in accessing the centralised licence approval authority, the extent of mining law illiteracy, the potentially dangerous nature of artisanal mining and the likelihood that Occupational Health and Safety (OHS) practices and CSR provisions were below standard.

Three of the medium size North West mines were associated with particularly serious problems during the decade, including legal issues regarding ownership, disputes over boundaries, the mining of undeclared products, collusion by authorities, violence and threats, and difficult relationships with the local communities.

MEMORANDUM

TO: ALL LUNGA RESOURCE AND AAGI EMPLOYEES
FROM: THE DIRECTOR
DATE: 20 May 2012

RE: ILLEGAL MINING AND SELLING OF MALACHITE MATERIAL

The exercise of allowing the community to collect malachite material was a social decision to help the underprivileged and not to propel illegal dealing in the Jifumpa community.

It has been brought to our attention that illegal buyers have started mushrooming in the village, this resulting in illegal activities ~~which~~ is considered unacceptable.

The company has therefore decided to stop all hand picking activities of malachite material and will soon conduct inspections with the assistance of the Police and Ministry of Mines.

Please take note any employees of Lunga resource or AAGI found with material or harboring a buyer or dealing in materials will face instant dismissal.

Thank you

MR SHAWI FAWAZI
PP: *Mpala Mulembe*

Fig. 13: Sign put up by company withdrawing privileges because of abuse by local people. 2012.

Only a few of these issues received any media coverage and communities only received support from NGOs to help resolve the problems presented by the mine in their area. One such mine was referred to at the 2008 Mining Watching meeting as being '... a synonym for failed supervision and control by government, police, unions and Zambian society in general...' and that '...relevant institutions were aware of the misery... but ignored it.' (CSPR/Caritas Solwezi (2009). It was reported that the issues included lack of provision of protective clothing, workers having to bring their own picks, salaries delayed for as long as nine months which forced them to buy food on credit from the company shop, the lack of a functioning clinic and unfair dismissals. District officers were reported as saying that 'their authority was limited', indicating a mine owner with influence in high places.

Later the mine ceased to function, was revived again but then sold in 2014. Despite this history the 2015 EIA (Jifumpa, 2015) made no mention of the long saga of problems, whose heritage would certainly affect future community relations unless great care was taken.

Members of local communities also contributed to the issues being faced. One international company geologist reported to this author:

We are currently drilling within our exploration licence, we have been granted permission from the Chief and have valid papers from all mining authorities etc. However, upon arrival within the area with the drilling equipment, the Sub-Chief, together with a whole entourage, arrived and started making their own demands. After a long discussion of their wants and needs, the Sub-Chief then asked for 'something personal'. (Correspondence, 2013)

In short, the Sub-Chief was going to hold up developments until this happened – which raises the issue of relationships between Chiefs and Sub-Chiefs when the possibility of benefits is in the offering. Another example occurred where a Chief was permitting unregistered (i.e. illegal) small scale mining to take place in his area, presumably for a share in the profits. Presumably these weren't the only examples of such practices.

Also, local people didn't always play an honest game, for example when permitted by a company to undertake artisanal mining on their large site. That privilege was abused, resulting in the offer being withdrawn, to the dismay of those involved (Fig. 13). Mines also experienced problems with theft of mine equipment and a suitable work ethic was not always apparent with local people not always appreciating the type of commitment and discipline required for working for money on a mine. On the other hand, the stop and start nature of some mines was understandably difficult for them to understand and created much confusion and resentment.

Another mine had a particularly chequered history, being a gold mine which around 2014 was involved in fierce ownership disputes including the Kasempa Community Company headed by the Senior Chief and foreign interests which had taken over from the previous owner and who were said to be of doubtful reputation. Senior government officials were said to be involved and compromised. Despite the matter being before the courts, there was evidence that the mine was working when it was meant to be closed. This case illustrates that anything to do with gold mining is bound to be fraught with problems as it attracts extra attention from certain types of players because of its high value product. Another issue was that the EIA for this mine was not able to be located, when it should have been publicly available.

Other developments include two new projects with large scale mining licences away from the 'Big Three' i.e. Jimbe in Mwinilunga for Nickel (Jimbe 2013) and Nama on the border with the Copperbelt for cobalt and copper (Nama, 2013). These developments spread the impact of mining and involve different Councils which may have never had any previous involvement with large scale mining matters. Again there have been raised expectations from local communities about the benefits which are expected to flow from the mines' existence. In the case of the distant Jimbe, the deteriorating state of the T5 must have been a negative development.

These various examples illustrate that problems were not just being experienced by large mining communities but also by those affected by other types of mining activities, and often far less in the public eye. Apart from a few media stories it appeared that the NGOs were the only people paying attention and trying to help resolve the issues that were arising. These episodes also illustrated that many people, at all levels, were eager to improve their economic situation by the opportunities presented by a booming minerals market, and some not just through legal means.

In 2008 CSPR/Caritas Solwezi noted in the North Western Mining Meeting Report (2009) that the main factor contributing to the problems experienced in the case of these mines was the lack of regulation i.e. insufficient inspection by both the licencing unit and mines safety department and also a lack of cooperation between the Ministry and local authorities who do not know who was operating in their area because investors by-passed them. There were also reported to be problems with tax evasion and corruption by some authorities and double issuing of licences. The failure of government officials to protect community rights was noted to be of particular concern - and which was why the NGOs were having to 'pick up the pieces.'

Another issue, according to a Mining Ministry official, was 'mining 'illiteracy' amongst the applicants for licences. As mentioned previously, many of the license holders were 'amateurs' without appropriate financial and technical expertise and being unaware of their licence rights and obligations. They were reported to be ignorant of the difference between surface and mining rights, and matters such as 'right of entry', appropriate OHS, environmental and labour law requirements. They were also reported to be ignorant of the nature of geology and the different requirements for gemstones, minerals and building materials.

On the more positive note, some modest economic benefits have flowed locally from smaller scale mining and also from exploration work and most of those involved were Zambian individuals or companies. The licence data and area visits also indicate that there are some district centres benefiting economically from the presence of prospecting teams and/or smaller mines in their areas, especially Kasempa, and to a lesser extent, Mufumbwe, Mwinilunga and Zambezi. These benefits arose from the opportunities for provision of casual labour, of food and other supplies, and lodgings for visiting teams. Shoprite in Solwezi and fuel stations would have particularly benefited from teams stocking up before going out in the field. Others based in Lusaka would also have benefited from inputs such as the hire of vehicles for teams and the provision of guides and drivers.

Other International Companies - Chinese Involvement

The large number of Chinese companies (twenty-three with thirty-nine licences in 2014, see Table 6) has also been a feature of the decade (although constituting only about 8% of the total licences). Seven held mining or Bidding Area (BA) licences (later phased out), with twenty companies holding thirty prospecting licences.

The Chinese presence in the North West (as determined by the granting of licences) began in 2006, and by the end of 2008 their companies held eleven licences. Fifteen more licences were granted in 2010 and by the end of 2013 thirteen more were added. This 'boom' coincided with the timing of President Jiang Zemin's urgings for Chinese companies to 'go out' and get involved in business developments outside China. As Burgis (2015) noted, 'Between the early 1990s and 2010 China's share of world consumption of refined metals went from 5% to 45% ...', and this dramatic increase was the impetus for China's 'arrival' in Africa - and of course for the dramatic increase in global mineral prices.

But by 2014 only two Chinese company licences were applied for/allocated and sixteen of the earlier licences had expired by late 2014. This illustrated the suggestion made by a Ministry official that year that their interest (or those of smaller companies) in the North West (and possibly Zambia) was waning (unless some were being renewed or upgraded from prospecting to mining and not yet entered in the database).

In regard to actual larger-scale mining there were only two companies active. Sino Kasempa undertook its EIA for mining iron ore at Kamatete in 2013 (Kamete, 2013) and Ruida took over Jifumpa from Hetro (a Zambian company) with the EIA being undertaken in 2015 (Jifumpa 2015).

Indicating the very close relationship which existed between the Zambian and the Chinese governments around 2008-9, it appears from an analysis of the time between application and date of granting of licences that Chinese companies were being given preferential treatment, with most being approved in six months or under and a few within days of application, which was generally much sooner than for other applicants.

Further to this favouritism Caritas Solwezi even reported that the Mwinilunga District Council had allowed the company Sinomine Resource Exploration to use their road maintenance equipment free of charge - and the Caritas Solwezi project took the Council to task for this inappropriate gesture.

Sinomine was the same company which sponsored a large group of Chiefs to visit China in May 2009. Despite this considerable outlay no small or large scale mine was ever established in Mwinilunga by the company, at least up until 2015, presumably because the deposits were not economic (a common story in the North West).

Issues re Obtaining Licences

One of the big problems of the past decade, in addition to the Ministry staff shortages, has been the lack of transparency regarding the granting of licences and disputes over borders, and as Chief Mumena was quoted as saying in the media (Lusaka Times, 2012) ‘... at the moment the licences are issued arbitrarily with NO regard to the affected communities.’ But the same article noted that the then Minister had assured that the issues were recognized and that the system was being improved, ‘to restore sanity...’.

Mr. F. Banda, Chief Engineer of the Mines Department, reiterated those intentions in March 2015 in a presentation to the Japan-Zambia Business Forum:

What will be achieved in the immediate term is efficiency in the handling of applications for mining rights, transparency and eventually the elimination of conflicts arising from overlaps. Government is determined in improving this system further and is currently in the process of developing an online mining rights application and evaluation system.

There was indeed some evidence of improvements having occurred by 2015.



Fig. 14: Tourmaline mining by children, Kavungu mine site. Source: B. Anckar, December 2006

Small-Scale Mining

The various forms of small-scale mining had some common characteristics and their own peculiarities:

Gemstone Mining: The NWP 2014 licence list showed only eight individuals and six Zambian companies holding Small Scale Gemstone licences, most in Solwezi District. The earliest date for a licence was 2000, and the majority had been granted in 2001/2. There has only been one recent licence granted (2013). Most were mining for Amethyst (6), Quartz with other gemstones (3), Quartz (3) and Aquamarine (1).

No specific study of the social impacts of gemstone mining in the NW appears to have been done but there are some mineral/area specific geological reports, including the one by Anckar et al (2007) and Zwaan et al (2005). It is presumed that the impact would be similar if not the same for other small-scale mining activities, both licenced and un-licenced.

Anckar et al provided a description of the situation for Tourmaline (see Fig. 14), in one isolated rural area of the NW. Figure 14 shows it to be a very accessible deposit and consequently one which could fairly easily be worked by small scale miners, including children. This unusual mineral, which sometimes resembles the emerald, is known in the trade as the 'Mercedes Benz' due to the Benz logo shape of the pattern which is revealed when the stone is sliced. Anckar et al reported that 'Although tourmaline is relatively abundant ..., to date there has been very little organized mining and only a small percentage of the crystals recovered are suitable for slicing to show the [unusual] tripiche pattern.'

Gemstone mining could be a profitable industry for individuals, the product being of higher value than those such as copper, and of low weight and therefore easily transported in quantity. But when mined on a small scale the usual problems are likely to prevail, as discussed below. As in other parts of Zambia there is much potential but according to observers the benefits are not being realised. An article by Mukanga (2012) in the *Zambian Economist* pointed out that:

Gemstones are among the most lucrative minerals in the world. They are also stones that Zambia has in abundance. It has the second largest deposits of emeralds in the world and accounts for about 20% of global supplies. The quality of these emerald stones is very good for colour and specific gravity. Zambia also possesses Africa's largest deposits of amethyst and aquamarine, with the quality of the former considered to be amongst the very best in the world.

The article then goes on to explore the reasons why Zambians are not benefitting significantly from this industry, including because of the illegal mining which is going on and also because many licences are 'leased' to foreigners who take the earnings out of the country and there is little in-country processing. While he was mainly referring to the very successful large-scale gemstone mining on the Copperbelt, it raises the question of whether the North West has unrealized the potential. Given the apparent lack of information available a study of the potential would seem to be desirable, especially given the high value/ small volumes nature of the minerals, meaning that small scale miners could well benefit. However, it may be that much more gemstone mining is going on than is being reported. The then Deputy Minister for Mines, Richard Musukwa, openly admitted that '... government lacked the capacity to monitor the country's mining industry [as a whole] and added that 'The gemstone industry has for a long time been neglected...' (Post Online, 2013).

Building/Industrial Materials: The number of licences for materials used in construction (sixty-one, with half of the 2014 licences being for prospecting, as per details of individual licence holders' data) largely reflects the building boom which has been going on in the province, including for road building. Not surprisingly, the majority (80%) of such licences were held in Solwezi district but half of them were for prospecting.

Breaking up stones for aggregate which are then piled up neatly beside the road awaiting customers with vehicles to take them away is a convenient, small scale business for local people, especially women and children. In the vicinity of a town experiencing a building boom, selling of aggregate can be a reasonably good income earner. Although physically hard work it results in a saleable product much faster than does farming.

Dealing with building materials however, requires equipment and access to large scale transport providing another opening for those with trucks to also participate in the boom. However, there are likely to be issues associated with such mining because no EIAs were required (that requirement has since changed), and poor rural folk are hardly likely to follow occupational health and safety standards, or to have the required clothing and equipment. Some sand mining is done on a large scale as in Chief Kapijimpanga's area, raising additional issues, including that of damage to local tracks by large trucks which also raise dust over neighbouring homes as they speed by. Unlike the large mine trucks they seem to be completely unregulated.

Artisanal Mining Rights: Such rights are restricted to Zambian citizens, using low technology or with minimal machinery. They are restricted to being under five ha and remain in place for two years and cannot be renewed, although a new licence can be applied for. As with other licences the minerals being sought need to be specified on the permit, although it is not clear how a novice miner would be able to identify what they were, apart from the obvious Malachite. Such miners are mostly community or family based on their own customary land, except where outsiders have come in and paid to access a site.

The Caritas Solwezi project reported that it was mostly men who did the work but boys, girls and women were also involved in various capacities, including selling the products. There were fourteen such licences registered in 2014 but it is known that many more people were mining illegally, and all over the province, according to Caritas Solwezi. Some local people have also benefitted from working on old, discarded mine sites, a practice of which the legal owners may be aware but turn a blind eye to, as long as it remains an artisanal practice.

All of these forms of mining also tends to 'fly under the radar', do not attract media attention and the Ministry is unlikely to have the time and resources to check out all of the many small sites, and the location of many are unlikely to be known

OHS standards were probably poor or non-existent, risking life and limb, including of children. Most would not have the resources to buy safety equipment or known how to prevent accidents. The diversion of village labour to mining also reduces that available for some aspects of farming and possibly increase women's workload. However, that impact may be reduced during the rainy season, when mining has to stop or is greatly reduced.

Not only is artisanal mining damaging to the environment but it is also highly unlikely that arrangements would be made for rehabilitation when a deposit has been exhausted or the miners have given up. This means that the remaining pits would be dangerous to humans and animals and becoming breeding grounds for mosquitoes.

Also, water courses may have been polluted and possibly diverted, and the land may be ruined for future farming. Kambani (2003) noted these issues as early as 2003 when discussing the national situation, with concerns which were also valid for the North West:

The environmental degradation caused by SSM [small scale mining] is also growing with the intensification of activities in the country. Meanwhile, institutions responsible for managing the environment are unable to effectively carry out regulatory and monitoring mandates due to inadequate resources.

In addition, poor rural people don't usually have appropriate transport so they would have to rely on outside 'middle-man', probably the owner of a truck, to buy the products and they are consequently likely to be at a disadvantage pricewise when selling their products.

Another aspect of the subject of transport, especially when it is coming from unregistered mines, is that it involves having to go through police, or even army posts, often, purposefully, at night. One can anticipate that this happens on payment of a bribe. Both the transporters and eventual buyers of the product, often on the Copperbelt, are essential to making this system function and are often well-known in the industry. The involvement of some traditional and government authorities (both taking handouts and turning a blind eye to activities) and certain unprincipled sections of the private sector continues to reinforce a functional but illegal system – and one which denies tax collection. While it is difficult to judge poor people trying to 'make a buck' from the various forms of small scale mining the very basic and sometimes dangerous working conditions and low levels of return for the miners may well out-weigh the financial rewards.

Reflections

In summary, the licencing area was an aspect of the national and provincial mining boom in which irregularities flourished, partly because of the sheer scale of applications resulting from the wide-spread excitement created by the dramatic increase in mineral prices and lack of government capacity to manage them adequately. In 2012, the very over-worked Cadastre office staff were buried within sky-scrappers of files piled high on their desks, overwhelmed by the demands. ZEMA must have been in a similar state.

Also, while the main focus of media and public attention was on the three very large mine areas thousands of other people have also been affected by and/or involved in prospecting and/or exploring and various forms of small-scale mining across a much broader area. The activities of the latter were relatively neglected by the authorities and consequently were often reported to be performing below standard.

ZEMA simply did not have the capacity to monitor as it should have been doing because national government had failed to resource it sufficiently to meet the greatly increased need. However, by 2015 the Cadastre office had received at least some of the extra support it needed to function more effectively. The skyscrapers of files significantly reduced and their office space was enlarged, to the great relief of staff. The system was tightened up and the number of licences reduced.

The rapid increase in the number of North Western licences matched that occurring nationally but indicated more of a boom in prospecting than actual mining. However, there were also known to be an indeterminate number of mines operating illegally.

Most of them were working on a very small scale and known to be doing so in very poor conditions and often associated with illegalities. Many of those taking out licences had no mining expertise or capacity and it appeared that their interest began to fade when the harsh realities and economics of mining hit home – with their numbers declining as the first decade went by. Another negative was that the increase in the number of licences was seen to be associated with increasing numbers of disputes and tensions between the various players, including some which ended up in court.

Despite the number of licences issued, very few mid to large sized mines eventuated, indicating yet again the harsh realities of the North West's geology. However, a few non-major mining interests did profit to varying extents, at least for short periods, and not always legally. ZEMA was inadequately resourced to monitor effectively and so it was the NGOs who, as usual, tried to pick up the slack and report on the issues occurring, but with limited impact because of the weakness of the overall system and prevailing self-interests of some key players. The various forms of small-scale mining especially need to be studied and the issues documented more comprehensively. The situations of the handful of medium sized mines also warrant more attention being paid to their impact on local communities.

A Post-script to Exploration and Mining:



Photo Credit: Antony Van der Ent, University of Queensland, Australia.

The Copper flower (*Ocimum centraliafricanum*) is an aromatic perennial herb which tolerates the presence of high levels of heavy metals, including copper and nickel. The presence of the flower is associated with such mineral deposits and has been an aid to geobotanical prospecting for decades (Brummer and Woodward, 1999).

The increase in mining in Zambia (and over the border in Congo DR) risks this species of flora disappearing. The flower was observed by this author to the east of Kansanshi mine in 2012 but that location is now covered by the mine over-burden or tailings.

INFRASTRUCTURE PROJECTS

Power – 2004 +

An essential ingredient of mining infrastructure is power but the North West had minimal supplies when the mining boom began from around 2002. Only Solwezi town was electrified via the Copperbelt grid from 2004.

Overview of Power to the North West

Kansanshi had to arrange for an increased supply from Chingola around 2004, when Kasempa was also connected via Solwezi. In order to enable Lumwana to commence work the line was extended from Solwezi, around 2005. Kalumbila received an initial line from Lumwana from 2012 then from Mumbwa as described below. All of these exercises required EIAs, clearance of land and compensation to those in the path of the developments. All had relatively minor, linear impact and, except for the Mumbwa line, much information about them is not readily available. The Hydro development however, impacted in a broader manner and affected a significant number of people.

It is sad, and ironic, that it took a mining boom to bring major electricity supplies to the province which had previously been so poorly supplied, and that people were mostly too poor to be able to access those new supplies. But it was the mines that took priority. Diesel and/or solar panels consequently continued to service the needs of many people.

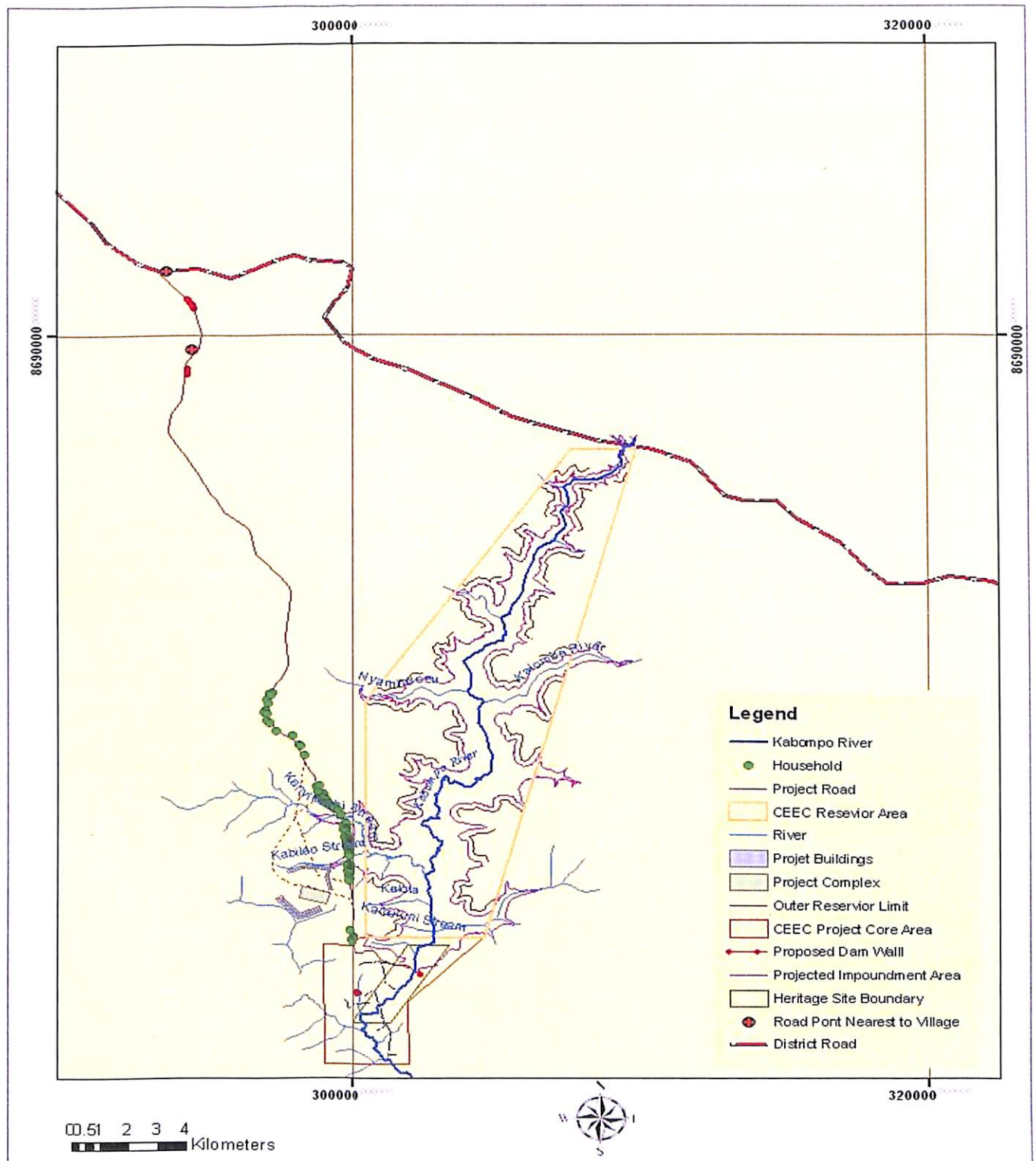
During the 2015/16 national power shortages, the mines had priority for supplies but even they had to reduce their usage to a limited extent.

An attempt was also made to establish a source of hydro power from Kabompo Gorge from 2008 but many delays were experienced and the amount of power it was meant to produce would not have made a significant contribution.

The issues associated with the use of roads for transporting minerals, equipment and supplies, rather than rail are discussed, as is the impact of the trucking industry.

These projects are described below.

Kabompo Gorge Proposed Road Project



Map 21: The Hydro project sites, showing the existing road going south from the T5, about 50 kms east of Mwinilunga (which has been rehabilitated), the location of existing households, the project complex, and the proposed flooding area of the river. Kalumbila mine area is directly to the east, separated by the Bushingwe Forest Area. Credit: CEC/KHPL, Kabompo Gorge Hydro Road Rehab. EIS, 2012.



Fig.15: Kabompo Gorge, south of the planned dam. Source: CEC/KHPL, RAP Report, 2012, cover page.

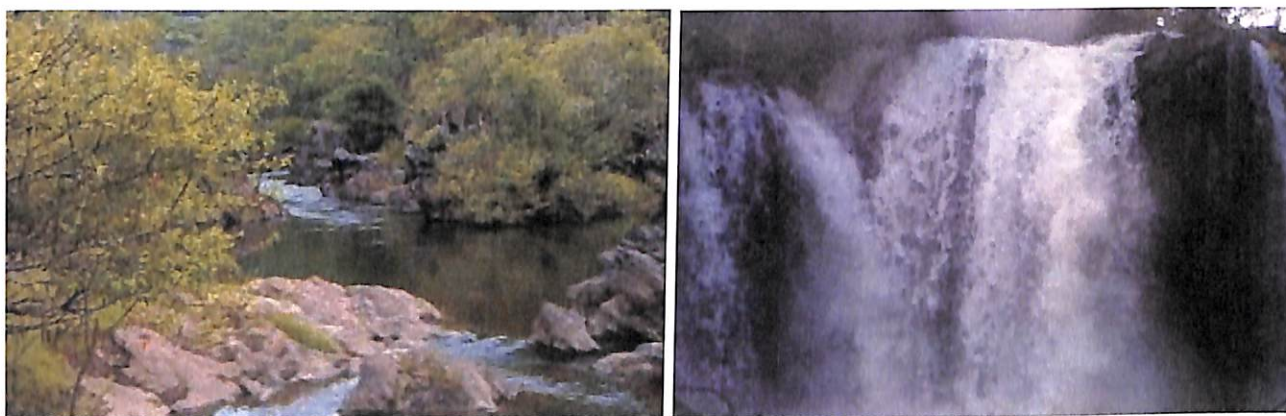


Fig. 16: (L) Kabompo gorge. Source: Gibb and Co., Kabompo Gorge Hydropower Project. Feasibility Study.
Fig. 17: (R) Nyambwezu Falls, north of the project area but not part of it, and south of the T5, illustrating the amount of water channelled through the river during the wet season. Credit: L. Matabishi, 2012.

Kabompo Hydro Project (2008+) (KHPL)

The Hydro project is situated south of the T5 about 50kms east of Mwinlunga and directly west of Bushingwi Forest Area which separates it from the Kalumbila mine site to the south east (Map 21). It is one of the few steep areas in the province and channels the Kabompo river (Figs. 15-17). The project involves a 40 MW underground power-plant and was designed to provide additional power to the region, including to Kalumbila mine, and to help stabilize the national power grid.

However, the development was dragged out over many years. For economic reasons, it may now not be completed (2017 information). Nether-the-less its extensive preparations impacted on local people for over seven years. As with the development at Kalumbila, this project involved resettlement and also the inundation of a large area of land, some of which had been used for farming, grazing and foraging. The project involved 4,750 ha of the Sailunga Chiefdom and 2,720 ha of the Musele Chiefdom (whose border is the Kabompo river) i.e. involving a total of 7,470ha.

The two Chiefs (Sailunga and Musele) signed with the Copperbelt Energy Company (CEC) on 8th April 2010.



Fig. 18: House of burnt brick with tin roof, one room



Fig. 19: House of thatch and poles.



Fig. 20: Kitchen nsaka, with poles and thatch. Source of all three photos: Kabompo RAP, 2012

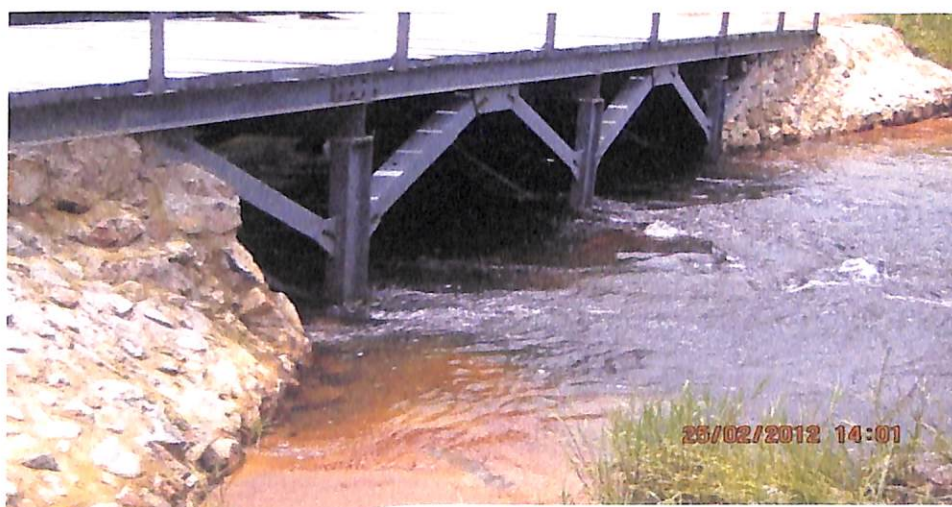


Fig. 21: Much improved crossing of Nyambezu stream crossing, only road into the Gorge area, thanks to CEC (previously impassable in the wet season). Credit: Mwata Consultants, CEC, Road Rehabilitation, EIS, 2012.

An array of related studies were undertaken, all involving community consultations and illustrating the extensive planning which went into project preparation: the EIS for Proposed Kabompo Gorge Hydro Electric Scheme, prepared between 2009 and 2010 (Kabompo, 2011); Proposed 132 kV Transmission line from Kabompo Gorge to Kalumbila Mine, (Kabompo 2012); Resettlement Action Plan developed late 2012/13, (Kabompo, 2012a); EIS Project for the Rehabilitation of the D273 Access Road to Kabompo Gorge Hydro Power Station, (Kabompo 2012b); EIS Proposed Construction of a Township Complex and Resettlement Housing Scheme at Kabompo Gorge (Kabompo, 2013). A positive aspect of these studies was that they provided probably the first ever available information on local communities and that they gave local people a much appreciated opportunity to voice their concerns. But these studies also raised their expectations sky-high.

Twenty-nine hamlets involving 523 people were identified as needing to be moved and a 35Km² area of farm, grazing land and forest was to be lost to the dammed waters of the Kabompo river. For comparison, this area is relatively small compared to Lake Kariba's massive 5,5080km² and Kafue Dam's 805km². Figures 18, 19 and 20 show the type of local housing and outbuildings which was to be affected.

The socio-economic impact of the development was anticipated in the RAP to be widespread and significant but able to be mitigated only to some extent. The project identified four key areas which would be impacted: i) Around Kanyikhezi, including the Mutumba area to the south by the CEC/KHPL camp ii) at Kanzala on the T5, iii) the northern part of Bushingwe National Forest where grazing occurred i.e. east of the Kabompo river and around the Kalombe river, and iv) the flood plains down-stream of the Gorge in the Ntambu area.

A substantial amount of farming (105 fields) and grazing land, as well as woodland, was to be lost through the inundation. Three hundred and thirty-one cattle coming from areas near the T5 would lose access to grazing. Some households living close to the T5 would also lose farming land but not residences. Relocation was required for about twelve small villages concentrated along the D273 in the Kanyikezhi area which were located within or on the edge of the expected flood line, due to the flooding of the Kanyikezhi and Kabileo streams. A further seventeen near-by villages slightly further south in the Mutumba area also required resettlement because they would be cut-off on a peninsula from roads and amenities. This made for a total of twenty-nine villages and 523 people being affected. Being on the western side of the Kabompo river they were all Sailunga subjects. No villages existed on the proposed Hydro town or resettlement sites, but there were nine cassava fields on the latter which required compensation (covering approximately 4.8ha).

Some temporary farm shelters, churches and fruit trees were also to be affected. The schools and health centre would not be inundated by the flooding but might have to be relocated for access reasons. Ready access to water supplies was noted to be an issue which would need addressing. Two burial sites were affected and dealt with in the traditional manner to the satisfaction of the relatives, with compensation contributed by the company e.g. the Mwanambili ceremony was held on 2nd November 2011, when a K2m 'ritual token' compensation was paid out in the form of food and household goods.

The RAP also noted an important issue under Demographic Impacts:

Given the very small size of most of the communities, the influx of workers during the construction phase will significantly affect the demography of the communities, not just in terms of population numbers but also in terms of population structure. The latter will be a function of the selective nature of migration which is often dominated by an adult male population. Construction activity will no doubt affect the sex ratio of communities for the period the activity is taking place in particular communities.

Chief Sailunga was very supportive of the project which mainly fell into his area but Senior Chief Musele expressed displeasure at times regarding consultations, or the supposed lack thereof, and about the availability of employment opportunities. This was so even though his people were not immediately affected by the core project developments as the impact on Musele land related only to inundation of the eastern side of the river and bushland. He also complained about the lack of CSR which he said was meant to be provided from 2011-2016, noting nothing had been provided by 2012. Some of this antagonism arose at the same time there were major issues at Kalumbila as described earlier. Curiously, almost no mention was made in any Kalumbila or Kabompo Gorge reports about how they were adjacent to each other, separated by only the Bushingwe Protected Forest area (which the Kalumbila project was eating into), and this information does not appear in any maps.

Not surprisingly the project developments were very unsettling for the immediately affected Sailinga people, although the idea of compensation and new houses excited them. But the very dragged out processes created much uncertainty and interfered with farming and grazing activities. However, the local people did benefit in the interim from compensation, from the grading of the road (D273) to the T5 and the building of small bridges along the way (Fig. 21). It had previously been a very rough track which was sometimes impassable by vehicles in the wet season and was therefore much improved. This road rehabilitation phase was necessary to allow easy entry of the project vehicles and equipment and materials to the contractor's camp and construction sites. The rehabilitated road also made it much easier to get produce to markets and enabled access to the area by others, including during the wet season.

A labour data base was established and over a hundred were employed on the early works with CEC-KHPL, Sino Hydro and the other sub-contractors, including on the road work and some were also employed in security services. Communities were reported to be well supported. A suitably representative community relocation committee was also established and worked quite effectively with the liaison officer and the developers, and its work was appreciated by the broader community.

The style of new housing was informed by knowledge gained from a special visit to Solwezi and Manyama, and interestingly, the community requested a modern town layout for their new houses, like 'Matero' (a planned area in Lusaka) they said, rather than their traditional lay-out. It was agreed that the new housing (three bedroom with inside kitchen with water and electricity) would be built of hydra foam interlocking bricks, the making of which would create employment for the locals and provide skill transfer.

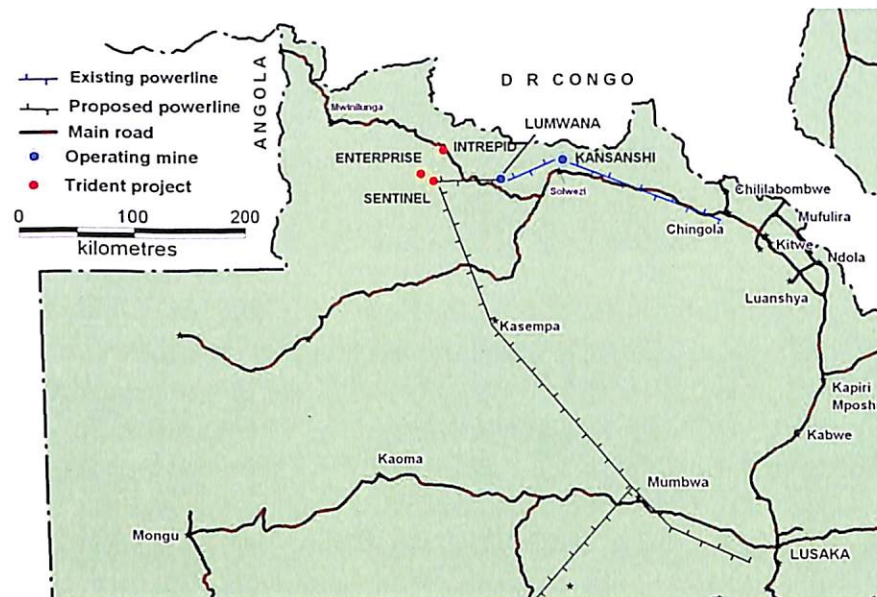
But the RAP noted that the District Resettlement Committee was shocked by what they thought were inappropriately sophisticated (and expensive to run) ideas. They diplomatically made a proposal that the communities be asked to '... verify if community appreciates the challenges of managing the settlement patterns proposed...'. But the debates turned out to be for nought as the funds for housing have not yet eventuated.

By late 2015 there was a small influx of outsiders who rented small structures from local residents then built their own in an ad hoc manner, permitted to do so by the local Headman, but they were not formally granted land. The local people felt outsmarted by the newcomers who, as at the mine sites, had higher education and skills and who were a mixture of single men and families. Most had come from nearby, including Kisasa and Manyama, but a few had come from further afield, such as Solwezi and even Lusaka.

The most challenging part of managing the local communities through the processes was reported to be keeping them motivated during the long delays which ran way behind the initially promised times. While the new housing has not (yet) eventuated they did finally receive compensation funds in February 2015, which helped to soothe concerns. According to one observer many were very surprised at the unexpectedly large amounts – which meant that they did not have an expenditure plan ready. The Zambia Development Agency was engaged to help them plan wisely but few made long-term investments. Those that did so opened bank accounts (in Solwezi or Kalumbila), established small shops and invested in solar energy for their homes. Some rushed for vehicles, varying from saloons to light trucks and some constructed better burnt brick houses while most also graduated from grass thatched roofs to iron sheets and to equipping their residences with fancy modern sofas and other household items.

By 2019 land title still had not been provided, without which no further investment borrowings could be made to fund further developments. Another important development had been stalled and much money and time wasted..

One could well ask what the explanation for this extraordinary situation might have been.



Map 22: Powerline route. Credit: Power point Introduction of Trident Project. FQML, January 2014.

Mumbwa-Kalumbila Powerline, 2012+

The documentation for the 400 kms long Mumbwa to Kalumbila 330kV transmission line (for route see Map 22) describes how its impact was of short duration and limited because it only affected a narrow strip of land (the wayleave, see Fig. 22) as it passed through largely uninhabited countryside. It was noted in the RAP (Powerline 2012a) that the lifestyle of the few communities enroute was predominantly rural with low population densities, with most people focussed on subsistence agriculture. Only a few residents were involved in livestock farming (8%) and small-scale trading (9%). Only 27% of the school aged group were enrolled in school. It was reported that a baseline study had been undertaken, not just to provide basic data but also to prevent opportunists from moving in and claiming compensation.

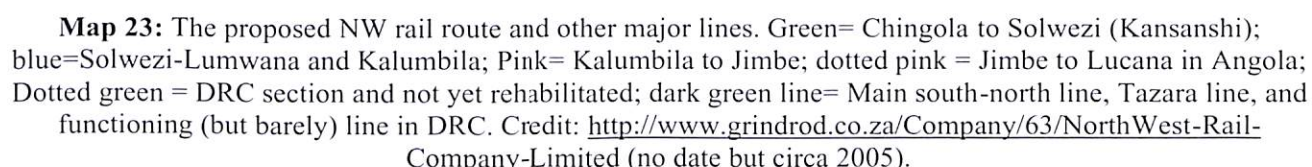
As identified during the 2012 EIA process (Powerline, 2012b), the power line development only disturbed a few rural communities on route across the three districts. Sixty households and a few communal assets were affected. The latter included two boreholes, one water-well, one small church and a privately owned but communally used grinding mill identified. Also, it was noted that, because of the narrow, linear nature of the project, most only had to be moved a short distance and the amount of land disturbed was minimal, as can be seen from Fig. 22 below. The report optimistically stated that the locals would have access to the power but that seemed to be a fanciful claim, as was the statement that the line would encourage economic development. A few Chiefs claimed compensation for passing through their land but some of that land turned out to be state owned. One Chief was able to benefit by selling sand for the construction. There was awareness that the presence of workers (with cash) working on the line might cause some issues for local people as they worked in the area, such as prostitution, but that opportunities for selling produce might also occur.



Fig. 22: Illustrating the wayleave requirement for part of the Mumbwe-Kalumbila powerline. Source: FQML, Trident Introduction power point, Jan. 2014 (wayleave widths vary depending on their location and line energy levels).

As with the other development projects local people were not only affected but created their own problems, with some valuable equipment being stolen enroute. Also, a few local people held up processes for some months in a dispute over the compensation rates. They were probably excited by the unique opportunity to obtain some cash benefits even though the impact on their lives was minimal. But they failed to appreciate that government rates were calculated to a formula which had to be followed and also that because land was customary owned it had no economic value for compensation..

Although being a crucial element to enabling Kalumbila mine to come on-line (or perhaps because of that) progress on the line was seriously delayed by issues created by the power company. Matters came to a head and in April 2013 KML took ZESCO, the state-owned Zambian power company, to arbitration because of a dispute over the selection of contractors and costs. The outcome was that from the latter half of 2013 contracting was controlled by Kalumbila and work got underway again and the job was finally completed much more efficiently and at half the original price quoted by ZESCO. However, this was two years behind schedule and resulted in diesel run generators having to be used in the interim, a very expensive option only partially resolved when the line from Lumwana arrived at Kalumbila in 2014.



As mentioned earlier a mining boom in a relatively isolated part of the country without a railway is something of an anomaly. But the situation was not without a major attempt to put one in place. Commercial interests led by a North Westerner, former Vice President, Enoch Kavindele, developed a railway proposal from 2004. In July 2006 government granted the North West Rail Company Limited of Zambia (NWR) exclusive rights to build, operate and maintain the rail. The project was to be headquartered within the proposed Lumwana Multi-Facility Economic Zone facility in order to benefit from the advantages that such zones provide to businesses. The line was to be single track, heavy duty and for freight only (for route see Map 23).

Social Aspects

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The EIA included a detailed field assessment undertaken of Ngosa, Boso, Mutenda, Kimasala and Mushitala, being samples of communities along the route in order to capture demographic data; health factors affecting the community and household socio-economic status such as land ownership, family income and general sources of livelihood. It was to also assess the potential social impacts of the project.



Fig. 23: (L) An area to be affected - Ngosa village on rail route and Fig. 24: (R) Community members accepting the project at Mutenda Basic School during community consultations. Credit: EIA report, Ng'andu Consulting Engineers & Kaizen Consulting International March 2012.

To be affected by the proposed rail corridor were family homesteads and nineteen villages between Chingola and the Kansanshi mine turn-off at Solwezi, as well as family homesteads and twenty-eight village settlements along the 81kms stretch from Solwezi to Lumwana i.e. being mostly lightly populated rural areas with one densely populated urban area (Solwezi) and including some schools and health centres and other public infrastructure.

According to the EIA the places to be affected between Chingola and Solwezi were Muchininshi, Chamakubi, Kalusa, Mutenda, Kangwena, Mupitanshi, Kingovwa, St Dorothy's, Kasapa and Chief Kalilele's palace, Mulaosho, Shafilundu, Kantete, Kibombeomene, Kanisenga, Kabisapa, Kakombe, Kifubwa and Kimale. Between Solwezi and Lumwana the following would be touched: Kimitelo, Mitukutu, Kyansunu, Kyabankakaka, Lutanda, Mwajimambwe, Kambazhi, Kayonge, Kananga, Meheba turn-off, Mukulumashiwa, Shinda, Katambia and Lumwana East (see Fig. 23 for a typical place).

The community consultations were undertaken in the sampled areas in the weeks around February 2012. The questions and concerns raised were comprehensive and related to: compensation and relocation arrangements; interference with farming; if resettlement then preference for land and structures provided so people won't waste their packages and be left bereft and the need to honour compensation promises. Other points were that distribution of compensation should be direct to the relevant individual for disturbances of graves and local employment opportunities and about issues regarding lack of land title.

Concerns were also expressed a need for the train to carry passengers as well as goods; safety benefits of a train compared to trucks; truckers losing their livelihoods; the risk of theft from trains; occupational health and safety matters; the need for heritage sites to be identified and the risk of carrying uranium. Overall, the communities who were consulted voted enthusiastically for the development (Fig. 24), presumably because they thought there would be financial benefits for them.

In total, forty-seven villages between Chingola and Lumwana were identified as being potentially affected or partially so. About 56% of the land passed through was under cultivation and would therefore require compensation. The EIA also reported, again very optimistically, that thousands of jobs would be created and many opportunities created for suppliers.

It was notable that some local people were aware of the risks associated with receiving compensation – ideas which probably came from the Mushitala people because the consultations were being held at the same time as they were experiencing compensation issues with Kansanshi.

But nothing had eventuated by 2016. In the meantime, expectations had been raised about the possibility of local people receiving compensation and it is highly likely that there was some opportunistic movement into the route areas – which would require a new EIA if the development ever did go ahead.



Fig. 25: The road accident rate on the T5 was worsened by the presence and impact of so many large trucks (although they were not the only reason). Credit: Dave Skippings' ZIMEC presentation, Lusaka, 2012.

Discussion of the Pros and Cons of Rail versus Trucking

The rail project concept was generally popular because it was expected to draw heavy traffic away from the T5 but there was disappointment that no passenger service was being considered. It was clear that mixing passenger vehicles with multiple heavy-duty freight trucks was a recipe for problems, causing significant traffic issues and safety problems and much damage to the T5 surface (see next section). Given that the highway was the only main artery in and out of the North West²⁰ there was considerable local support for a North West railway.

In regard to the safety aspects mine surveyor and rail enthusiast, Dave Skippings, spoke out very strongly for a railway at a Zambian International Mining and Energy Conference (ZIMEC) (Skippings, 2012). Alarmed at the increase in traffic on Zambian roads more generally and about the acceleration of the mining industry, he gave a presentation promoting the use of rail in the North West. Given the conditions of and on the T5 he pleaded for some sanity in the situation, especially given the greatly increased rate of accidents (Fig. 25).

²⁰ The M18, lying further south in Kasempa District runs west-east but it was mostly in very poor condition.

The project which was a national infrastructure priority, was included in the Sixth National Development Plan and fitted within the frameworks of the Zambia Development Agency Act and the Public Private Partnership Act (Mokoena, 2014). There was also support from key external organizations for the concept: According to a public presentation by the government and NWR in 2013 such a project would also be of regional importance and help to address the Southern African Development Co-operation (SADC) forum requirement for more extensive regional networks. It was also stated that oil from Angola would be the useful backload and that such projects would ‘... enhance regional trade competitiveness’ and form part of the Lobito Development Corridor Agreements (GRZ/NWR, 2013). There was other support: In its 2013 report on infrastructure provision on the continent the World Economic Forum (WEF) also stated that rail was the most efficient way to transport large, bulky primary commodities (WEF, 2013). The African Development Bank was also positive about the role of rail in moving natural resources (Beyond Brics, 2014).

In 2014 ZIMEC added its weight to the argument, including in its end of conference report:

- There is a significant need to move away from road to rail haulage. For this to happen, railways need to be competitive, bringing their operations to economical standards.
- There is a need to create linkages among railway networks in the region for a coordinated transport structure.
- Railways need to improve the security of high-value cargo movements over long distances
- Railways should pay more attention to political situations and instabilities in the region, which could potentially affect their infrastructure (ZIMEC 2014).

Further support came from a regional strategist (Marbus, 2014) who stated that the NW rail would be ‘... an important development for Zambia given its wealth of mineral resources and the need to get its minerals to ports in the most efficient way’. But Marbus added a caveat, pointing out that ‘... infrastructural challenges remain considerable across the continent in the face of limited funding capacity’ and that there was “... always a question as to who is responsible for financing that infrastructure ...’.

But others, such as Raballand and Whitworth (2011) had already argued against the promotion of rail, stating that trucks are more cost-effective: Their paper questioned:

... the case for public investment in the railways. It shows that the economics of road versus rail has been fundamentally transformed since the 1990s.’ And that ... ‘Along with rehabilitation of the trunk road network, this has enabled Zambia to enjoy some of the lowest trucking costs per tonne kilometre in Africa ... Given its poor track record in managing railways and the under-funding of essential public services, rather than investing in railways itself, the Government’s role should be to: (a) facilitate private investment in the sector; and (b) ensure that trucks cover the full cost of the damage they cause to the roads by enforcing appropriate road user charges.

Figures 26-29 give some idea of the heavy-duty traffic which was travelling by road because of the lack of rail, including much of it through the middle of Solwezi town, as well as through the major road arteries of Zambia.



Fig. 26: Heavy and other traffic having to drive through the centre of Solwezi town because of no railway or ring road, Solwezi, 2014.



Fig. 27: An example of an abnormally large 'ABNORMAL' load, the type of heavy equipment which became a common sight on the highways to the North West - which caused numerous traffic problems and damage to road surfaces - and which should have been transported by rail, if it had existed, 2013.



Fig. 28: Enroute to the mines, Kipiri Mposhi, 2014.



Fig. 29: The very heavy copper cathodes heading out of Solwezi on the T5, 2012.

In fact, the last measure mentioned by Raballand and Whitworth about the need for cost recovery from the trucks did exist. However, it is not clear where the millions raised by what were very high tolls actually went to for they did not appear (at least at times) that they were being used for road maintenance.

It didn't help that government support for the project was erratic over the years, with ministers proclaiming at various times that it was going to be good for the country, then cancelling the NWR contract in 2008 and later renewing it in January 2011. In 2013 the *Zambian Economist* even optimistically reported that the project '... appears to be on the verge of being realised ... and that government will soon sign a MOU with promoters...' (Zambian Economist 2013). But this turned out to be yet another false hope. The same article mentioned that four new mines were coming up which would add to the demand for this railway.

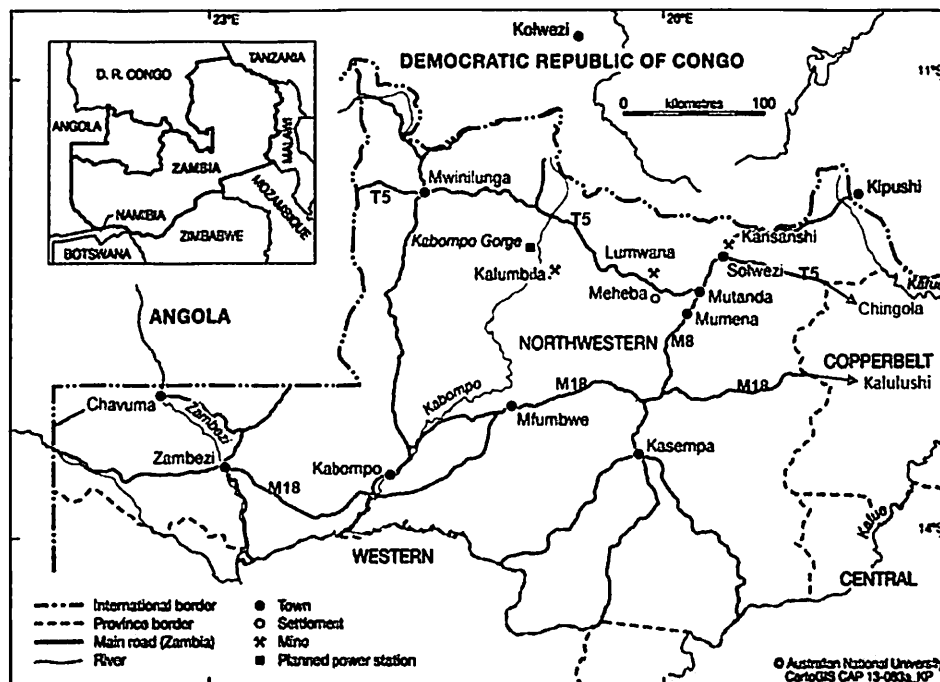
Hope was renewed yet again in February 2015 when the President attended a ceremony for completion of the Angola side of the Benguela line. He was quoted as saying, somewhat optimistically, that work would commence on the Zambian side by June (Railway Gazette, 2015). But by 2019 nothing had eventuated and the demonstration length of rail which had been laid down in 2005 near the Chingola turn-off remained just that (Fig. 30).

An underlying factor in this story was that the trucking industry (largely South African owned, but with some Zambian and Tanzanian interests) has obviously benefited enormously from the lack of rail. It has been suggested that vested interests worked hard to ensure that the status quo remained. There were arguments too, from the NW mining companies, that they already had agreements with haulage companies for the period 2008-2013 and that the proposed charges were going to be too high - so they were hesitant to sign up. The failure by the promoters to obtain off-take agreements from the major mining firms was reported to have ultimately prevented the project from going ahead. But to have been really useful the railway should have been in place before the Kansanshi revival but then it was not apparent that other large projects were going to come on-line, including those over the border in Katanga.

This long dragged-out saga clearly showed the importance of the need for forward planning, rational financial decision making, consistency in government and effective collaboration between the private and public sector if such a major infrastructure project was to have eventuated in a timely manner. But it didn't help that there were conflicting opinions between the experts, as described above, that Zambia's railway maintenance track record was poor, or that politicking between the various players played a significant role in this tortuous story. But Cecil Rhodes and Robert Williams would be shaking their heads in disbelief about the lack of a railway during a mining boom (but they obviously hadn't had shares in trucking companies).



Fig. 30: The demonstration length of rail, besides the T5 near the Chingola turn-off, the only physical sign of the proposed railway, laid for the opening in 2005, pictured in 2012.



Map 24: NWP with main roads. Source: Carto GIS, CAP, ANU with added road details

Roads (2002+)

The major road system in the North West is shown in Map 24. Very much related to the non-eventuality of the railway, a crucial item of infrastructure was the T5, a 180 km highway which runs west from Chingola on the western edge of the Copperbelt through to Solwezi town. It then continues on to the Mutanda turn-off and north west on to Mwinilunga. It is the route by which all three big mines, among other developments, are reached, and the mining products sent out of the province. It is also used by some traffic going through to Congo DR via Kipushi. As previously described both Lumwana and Kalumbila trucks had to travel through the centre of Solwezi town to reach their sites because no ring road had been built (Kansanshi trucks turned off before town). Kansanshi had proposed to the Council in 2012 (GRZ/SMC Minutes, May 2012) that it build a southern by-pass but the project never got off the ground because the Council would not agree to cost sharing.

Given its important role one could therefore call the T5 *the path to the (copper) fields* as Mutondo Kawilila evocatively said to this author. It reminds of the use of small paths through the bush to distant farming plots which were such an important part of NW livelihood creation in the pre-mining days (and still are for many). Consequently, the T5 was the vital artery through which the life blood of the mining boom ran. As a result, the road was heavily impacted by the greatly increased volume of traffic, including many hundreds of mine trucks and 'Abnormal' transporters, as well as public and commercial vehicles and buses. The dozens of villages scattered along the roadside were affected both day and night, especially by the big trucks as they thundered past with few breaks in between.

They not only had to put up with both the noise and the heavy vibrations, but also with the dangers presented by trying to cross the road. This was because of the lack of planning by those in authority which resulted in households and small shops unfortunately lining both sides of the road. However, on the positive side, the increased traffic also provided an increase in the number of customers for their farming products which they displayed at the edge of the highway, especially 'Solwezi' beans and charcoal.



Fig. 31: (L) The state of the province's main artery, the T5, 4th February 2016, (Tweet TIOZambia.com). Fig. 32: (R) 16th February 2016 (Zambian Post). Both taken during the wet season.



Fig. 33: Illustrating the challenges faced by drivers when the T5 was in such poor shape. c 2016. Credit: Zambian Observer.



Fig. 34: (L) Newly sealed M8 to Zambezi and Chavuma, which has light traffic and was in excellent shape, 2014. Fig. 35: (R) In contrast, a Solwezi town area 'road', 2012.

During the mine construction years (i.e. peaking around 2002-7 and then again between 2011-13) the traffic into the North West also included macro-sized equipment being carried as *Abnormal* loads, causing many traffic holdups but also considerable excitement as these curious looking 'monsters' passed by. Negi (2010) described how the arrival of a giant ball mill enroute to Lumwana in 2007 attracted much publicity, with its itinerary being '.... broadcast beforehand on radio stations and fascinated residents lined the streets of Solwezi to catch a glimpse of the procession'.

Curiously enough, it appeared that pedestrians eventually became immune to the sight of these monsters and to dodging loads which sometimes took up three quarters of the two lanes. Once Lumwana and Kalumbila commenced production the number of major construction loads reduced but their copper trucks added to the traffic flow in the opposite direction. However, the extent of big traffic going through town was reduced when the Kansanshi smelter came online in 2015 because Kalumbila's trucks were then able to use the upgraded side road through to the mine site.

With the greatly increased flow of traffic over the decade, including the hundreds of heavy trucks and the even heavier *Abnormals*, the tarmac of the T5 quickly broke-up, despite efforts by FQML over the years to mend sections. The company was eventually instructed by government that it would take over the responsibility but with constant unfilled promises and stop-start efforts the tarmac became a dangerous mess. Again, one can only guess the reasons, perhaps including some or all of lack of political will, ineptness, corruption and unpaid contractors. By the 2016 wet season the T5 was barely passable and the journey took a maximum of an agonizing eleven hours to complete instead of two. This situation caused untold maintenance problems to vehicles and much loss of valuable personal and commercial time and income. Travelling the T5 from Chingola to Solwezi, or the reverse in these years was 'like running the gauntlet', as this author knows from personal experience. Figures 31-33 illustrate the state the situation.

The neglect of this crucial road was extraordinary, especially given that it was stated in the Kansanshi Development Agreement that government would be responsible for the highway and also the very large amount of taxes paid for heavy vehicles (e.g. \$30,000 for one 'abnormal' load). This is not to forget the amount of taxes accruing to national revenue from the province. Finance Minister Musokotwane's '... locomotive of economic development...' was hardly being enabled to steam along. Despite much public outcry the issue dragged on and on over a period of about three years. *The path to the (copper) fields* was a national disgrace and a nightmare for those who had to travel it. In the meantime, politicians, senior civil servants and senior business people were probably happily using the nicely (mine) rehabilitated airport instead to reach Ndola or Lusaka.

The strange thing was that during the same period millions were spent on the 612 km M8 road to Chavuma in the far west, which carries comparatively minimal traffic (Map 24 and Fig. 34). While its sealing significantly reduced travel time and was obviously of great benefit for the people living in that neglected area, it could hardly have been a national or even provincial priority given the relatively small number of people and economic developments in the area. But even this beautiful tarmac soon began to show signs of deterioration which the annual rains aggravated. This also happened in 2014 to the T5 beyond the Mutanda turn-off which was receiving heavy traffic to and from both Lumwana and Kalumbila. Although the amount of traffic was less, the section of the M8 road from Solwezi to Kasempa also suffered, with many potholes present around 2013/14.

The 274km long Kalulushi road (M18), which could have been an alternative route into the southern areas of the province was another horror stretch. It passes west from Kitwe on the Copperbelt to just north of Kasempa town and should have provided an alternative avenue for the Kasempa/Mufumbwe mines but it was only sealed for 40kms on the Kitwe end and passable only at about 15kms per hour the rest of the way in the period around 2016. Consequently, the southern mines, including Jifumpa, Kalengwe and Katokamema were forced to take the (very) long way round, north via Mutanda and east to Solwezi and the Copperbelt on the T5.

Limited allocation of resources for fixing urban roads in burgeoning Solwezi town was another on-going problem and much complained about by residents throughout the initial years of the mining boom. The few that were done were much appreciated but most others were like goat tracks in the wet season, and not much better in the dry, causing great inconvenience and costs in vehicle maintenance (Fig. 34).

The poor state of the Congo road running north and then east from Solwezi town to Kipushi on the Congo DR border was yet another example of failing to enable what became an increasingly busy route (Map 10). Traders even came from as far away as Tanzania to reach the also land-locked Congo DR because it was seen as having many customers for its cheap products. Government was hardly demonstrating its willingness to promote business development for either Zambians or those from other countries.

An additional point was that the increase in the number of contracts for what roads were being built also increased demands for supplies of aggregate and sand, and some communities, including those as far out as the Zambezi area, benefited financially from these deals. Just what impact this demand has had on the local environment does not appear to have been documented.

On a historical note, the T5 was the subject of attention in earlier years being well graded in the 1960s (Fig. 36a). Even earlier, colonial District Officer Bradley (1966) reported that in 1938 he had organized the planting of:

... a long, quick growing euphorbia hedge down either side of the road to stop the children being run over. In the old days of the rattling Model T Fords and roads so bad that thirty miles an hour was a suicidal speed, there was no need for these precaution – particularly on a by-road like this where two cars a day are one above the normal. But now, when the road is graded and smooth, and both the cars are likely to be Master Chevrolets cruising silently at fifty, the danger to those naked children has increased a hundredfold.



Fig. 36a. The T5 in the early 1960's, when it was possible to drive from Chingola to Solwezi in an hour in a powerful car because the graded surface was so good (at least in the dry season). Credit: Alastair Nisbet.



Fig. 36b. Pleased to be recognized for their role: BHL Drivers: Morgan Lybemba, David Jacob Siame, Kahyata Kahyata, Rodgers Mizi, Oyi Lumamba Nkaba and Peter Paka (not in order). Solwezi, June 2019.

The Trucking Industry

Another aspect of the subject of mining impact was that of those who use them commercially. Most involved was the trucking industry which, because of the absence of a railway, expanded enormously during the first decade. It has played a significant and often unappreciated role.

In many ways, the truck drivers are the unrecognized, almost invisible ‘highway cowboy’ heroes of the mining story (Fig. 36b). Despite the industry relying on them to get mining equipment and supplies, including fuel, to, and the copper and other minerals from the mines, they receive little or no public recognition. And yet without them the minerals which are such high earners would never reach a port – because of the lack of a railway. Each year they travel thousands of kilometres, handling very heavy loads, having to constantly concentrate to keep them stable on sometimes very rough roads and to avoid wayward pedestrians and animals such as goats and cattle. Other faster vehicles, especially cars, test the drivers’ patience as they try to pass them, not always in a safe manner.

The industry in the North West is an important contributor to employment with about twenty companies involved, three of them being large ones. They provided thousands of jobs, not just in driving, but also including those doing the cleaning and mechanical work on the trucks at their bases (Fig. 36c) and at ports or along the wayside. BHL, for example, in later years, established a team of fifty staff permanently doing maintenance out on unsealed rural roads. As well, there are employment opportunities for logistics and administration staff, including those for human resources and training.

Truck driving is a very disciplined type of job, with often tight schedules to keep and no alcohol allowed when rostered on, even during their rest periods. As within a mine site, high standard OHS practices are crucial, both for the drivers and those they encounter on the roads – it is not an industry which can tolerate casual and irresponsible behaviour. This must be particularly so in regard to fuel or acid truck driving.



Fig. 36c. Much work for mechanics maintaining the trucks, BHL mechanics on their lunch break, Solwezi, 2019.

Driving jobs are also stressful because of the constant fear of hitting pedestrians, who, in southern Africa, are notorious for walking or else cycling casually along roadsides, including while drunk, seemingly unaware of the danger that big trucks present. For this reason drivers much prefer driving at night when people are in lesser numbers. At times the job is very pressurized because of the need to get loads to a destination by a certain time due to a receiving ship's loading schedule, but at other times it is less stressful.

In addition, drivers are away from their families for many days or weeks at a time which makes life difficult for them. Many of their families can't move to Solwezi because the wives have jobs elsewhere and/or children are already settled in schools and anyway, the husbands/fathers wouldn't be there much of the time. Consequently, the mateship of their fellow drivers during a roster is very important and they relish their leave days when they get to re-join their families in their home provinces or districts.

The majority of drivers are males in their late twenties, thirties or forties and many recruited have had a background in driving commercially. They come from all over Zambia (and a few from other countries) attracted by the pay which is better than for other forms of driving. There is potential to increase the involvement of women beyond those providing office support, especially in the mechanical area.

The industry also creates a large demand for equipment and supplies, including mechanical tools and parts, tyres and fuel and oil, the majority of which provides yet another close supply link with South Africa.

Being seen as a type of *MMM's* truck drivers are also easy prey to the temptation of women selling sex along the truck routes, especially at the border crossings which sometimes hold them up for days. Despite this long-known risk for the spread of STIs, including HIV, most border crossings are still highly inefficient, including at Chirundu and Kasumbalesa (but not going into Namibia where services are more efficient).²¹

On all counts, a truckie's job is both physically and mentally demanding – and yet an essential and often unappreciated aspect of a mining boom.

²¹ An extreme example occurred in April 2019 where trucks were lined up for 72kms coming going from Congo DR. <http://www.ftwonline.co.za/article/190600/Kasumbalesa-queue-now-72km-long>



Fig. 37. Trucks held up at the Chirundu border. Credit: Mietsie Visser, nd.

Trucking is also an industry which spreads the impact of mining way beyond the edge of mine sites, affecting traffic safety, causing traffic to build-up at times and also encouraging some of the other drivers to take risks when passing the slower moving large vehicles. Just how much mining related trucks are factors in accidents (not necessarily causes) would be worth examining – and relates to the cost-benefit of rail versus trucking, as previously discussed.

People living along the routes are also affected, as discussed above, and by the dangers they present to pedestrians crossing the road and to cyclists riding along. These risks are spread out in a linear fashion for thousands of miles through the Zambian highways and beyond into surrounding countries, affecting innumerable groups of people and individuals, albeit in an intermittent fashion.

Another issue is that the weight of mine related trucks is a major factor in causing damage to tarmac, especially when they have to slow down at police posts, toll booths and border crossings, unless the stopping points are reinforced with concrete (which most are not). Figure 38 illustrates the sort of ridges which occur in the tarmac.

However, the industry does compensate for this damage for, as discussed above, it pays large amounts of taxes per load/weight which is meant to be used for road maintenance.



Fig. 38. An example of the ridges in the tarmac created by heavy trucks. 2019.

In relation to the proposal for a North West railway and given the high level of investment and profit making involved in trucking the industry is a powerful lobbying force for maintaining the status quo.

Given its key role and the wide-ranging nature of the industry the subject deserves a book of its own, including describing how much of it is locally owned (or not) and to where the benefits accrue. Such documentation would make a useful addition to our knowledge of the impact of vehicles on socio-economic life, as described in Gewald et al's 2009 volume, *The Speed of Change. Motor Vehicles and People in Africa, 1890-2000*.

2019 Post-Script: One company has since established a new, shorter route out of the North West, running south via Kasempa to Kaoma and west to Namibia. This route takes four days instead of five compared to the other route via the Copperbelt. It also has the great advantage of being processed through the Walvis Bay port which is run more efficiently than are those at Durban or Dar es Salaam. The trucks also return filled, not empty. The disadvantage is that the heavy traffic is now affecting other districts (including those in other countries), although the route through to Walvis Bay is not heavily populated. The roads are dirt but being maintained by the company as mentioned earlier.

Reflections On Infrastructure

It is apparent that GRZ had failed to plan for and prepare in a timely manner, the infrastructure pre-requisites required to enable a large-scale mining industry to occur in the North West. This was despite the fact that for years it had been promoting itself at the various Mining Indaba's as being a business-friendly investment destination. Because of the various delays there was also a significant flow-on affect to investor confidence. When it did take on a responsibility, as with the Mumbwa powerline project, its implementing agency failed to deliver (for unpublicised reasons), despite the delay that caused which seriously affected the bringing on-line of a major producer of national revenue – and which meant the agency ended up in court.

It was also obvious that government procrastination over providing land rights seriously hindered the progressing of some projects (as well as mine community resettlement and the situations at Manyama and Kisasa). Similarly, there were many episodes in regard to the maintenance of the T5 which, at times, Kansanshi had to take over, even though it was in the Development Agreement that the highway was government's responsibility (and the company was already paying huge amounts of road transport taxes). In this case there was also a real cost to thousands of travellers, including individuals and various types of business people in terms of time, money and stress because of the appalling state of the T5. One could also mention the similar waste of time, energy and hundreds of thousands of dollars expended by various investors in the planning and preparatory stages of the various projects, especially with the railway and hydro, neither of which eventuated.

Consequently, companies often ended up having to scramble to undertake their own arrangements. Government neglect including not having undertaken an analysis of the pros and cons of road versus rail transport to determine the most effective way of delivering equipment, supplies and people to the mining sites and minerals from them to their markets – and to resolve these issues well before developments commenced. Another point was that the impact of these projects appeared to have slipped under the watchdog NGO radar despite them sometimes having significant social impact, as with the Hydro development.



Fig. 36: (L) A small entrepreneurial business well placed on the Kansanshi mine road, Mushitala, 2014. Fig. 37: (R) The thriving new market, on western edge of Solwezi town, 2013.



Fig. 38: Many small businesses arose in Solwezi town area, with increasing Chinese influence showing, on the side of the T5, Solwezi town area, 2013.



Fig. 39: (L) Lodge accommodation was in high demand, Floriana, one of the original lodges, Solwezi town, 2013. Fig. 40: (R) Many very small businesses (one with an even smaller 'manageress'), also tried to get their share of the cash which was flowing, Solwezi town, 2013.

BUSINESS DEVELOPMENTS, EMPLOYMENT OPPORTUNITIES AND SKILLS DEVELOPMENT

The period saw the making of magnates and migrants, of millionaires and bankrupts, shopkeepers and entrepreneurs. It also saw the emergence of a new working class ...

(Giliomee, H. and Mubenga, B., 2007).

The above quote refers to Johannesburg in the 1880's but it could apply equally to the North West and Solwezi town in particular, albeit on a smaller scale. Other mining booms around the world have similar impact.

Business Development

As with all mining booms there was a rapid increase in commercial developments and employment opportunities, both within and outside the mines. Solwezi town, and to a lesser extent, Manyama, Kisasa and Kalumbila town became thriving centres in response to the opportunities provided by proximity of the mines. The large increase in cash flowing into Solwezi town caused it to become known as *Kyalo Kyamali* – 'the place of money' - whereas previously it had been known as 'the place of honey'. Even Kasempa, Mufumbwe, Zambezi and Mwinilunga benefited, to a lesser extent from the smaller scale mining and exploration activities in their regions. The Central Statistics Office reported in its Economic Survey of 2008 a fifty-percent increase in small-medium sized businesses from 204 in 2003 to 418 by June 2008. Figures 36-40 give an idea of the range of businesses.

But the economic benefits were a mixed story. As a Solwezi businessman said to this author (2012) 'The demand is there and you can sell anything you have...' and that '... anybody can make money in Solwezi, BUT few can keep it.' This remark illustrated the lack of financial management skills which the companies later tried to help address.

As described under the section on Solwezi town area, there was an increase in the range of employment opportunities. Many locals benefited from buying up land when it was cheap and building rental accommodation, while the elite did even better out of larger scale land deals and related building activities such as malls and lodges. The opportunities available attracted business minded people who detected *kyamali* from outside the province. Marketeers proliferated with their numerous small stalls and cheap goods providing the greatly increased number of customers with considerable choice. However, most were unlikely to make enough money to upgrade their standard of living and to graduate to running medium size businesses, especially given the ever-increasing cost of living. A significant proportion of the business people were reported to be outsiders, not local people, although to what extent that was true is not known. As mentioned earlier, entrepreneurial skills and business-like attitudes were rarely present amongst the local people and many even failed to benefit from small-business training run by Kansanshi. Banks reported needing to obtain staff from outside the province because of the lack of sufficiently educated local people applying for positions (Bank official, 2013). Some lodges and hotels also recruited their staff from outside the province, supposedly for the same reason.

'Middle-men' (rarely women) with access to transport often made reasonable profits, as did the owners of the fleets of cheap second-hand taxis which suddenly emerged (although a glut did develop which would have blunted their profits).

Suppliers of second-hand clothing and those carting building supplies and vegetables from rural areas also benefited. Cell phone and computer time outlets proliferated, as did hardware shops, hairdressers, restaurants and various other medium sized businesses. The town buzzed with multiple commercial activities.

The number of larger scale commercial activities also increased, although strangely a number of them only eventuated around 2014/15, which was surprisingly late in the boom. The late comers included a brewery, five shopping malls and more supermarkets (Shoprite having been the only one for over a decade). An old set of buildings opposite the Council were also renovated and opened up as the 'North West Business Centre' in 2014. In order to help develop a cadre of successful business women a Women's Entrepreneurs' Group was established and which met off and on to learn from and support each other.

The Chamber of Commerce had existed for some years but it needed support to help increase its effectiveness. It was somewhat hampered in meeting the increased demands by a degree of exclusiveness and self-interest. Kansanshi's educational efforts to improve its capacity were reported to be hindered by some entrenched attitudes. As well, three large hotels, lodges, petrol stations, multiple banks, private hospitals and various social venues were built which were great assets (for those with money) to the previously poorly serviced town. In addition, the establishment of a fuel depot in 2014 and two large maize milling factories were notable 'firsts' for the North West. The latter development meant that maize no longer needed to be sent out of the province and returned after processing. Figures 41 and 42 illustrate examples of the modernization which was going on.



Fig. 41: (L) Modernizing: The middle of Solwezi Town, from the only two-story commercial building in town in 2014 and Fig. 42: (R) One of the new modern hotels (Kansanshi), 2014.

But who owned all of these new developments was the question. As North Westerners rightly observed, while much money was being earned there, large amounts were flowing out of the province and also out of the country, especially to South Africa. One such flow was to the Copperbelt to the families of mine workers who couldn't afford to move to the North West because of the high cost of living, despite their higher salaries. Business people from Lusaka and the Copperbelt were also key players. It was apparent too, that South Africans in particular, had benefited enormously from the NW mining boom through the supply of manufactured and supermarket goods, the transport industry and from the recruitment of experienced senior level mining personnel – at a time when that country was economically troubled and desperately in need of such opportunities. It is doubtful if the extent of the outflow of these benefits has ever been quantified.

As a result of these many large and small developments, the Solwezi Council should have done very well from the rates and taxes which was meant to be paid to it by business people, but as discussed later under 'Government', that did not happen to the extent it should have done.

All three major mining companies made special efforts to try and stimulate local businesses by obtaining goods from companies within the province (i.e. largely from within Solwezi), including encouraging them to start up in areas they had not previously been involved in, including production of core trays, hard hats, bags and safety vests.

But while there was in theory a stated preference by the mines for using local suppliers and services local people rarely had the necessary financial capital, business know-how and linkages. There were many constraints for them to doing so, including a lack of collateral which prevented novices from getting started and high bank loan rates (e.g. 27%+). Tender requirements were reported to be complex, costly and time-consuming, despite the Patents and Companies Registration Agency's (PACRA) efforts to improve the system. Also, the time from advertising to closure was said to be too short. This was because such a deadline presented difficulties if a small company was busy on another job and short-staffed. Last but not least, the need to pay worker's compensation and insurance and to meet other labour requirements even if no jobs were occurring, added to the burden of trying to run a business (interviews in 2012, 213 and 2014).

Another issue related to mining procurement systems which were known to be infiltrated by corruption which was said to be 'a difficult tide to swim against' for newcomers. The latter included 'cartels' within mines with close links to experienced, well established companies. In some respects the situation was not surprising given that Zambia only has a minimal manufacturing industry and many items are very high tech, and therefore needing to be obtained from South Africa or otherwise from overseas. Invariably it was those companies which have capital and an extensive track record based on their involvement in their own mining industry which obtained the big contracts. The ones with known capacity for efficient provision of goods are far more likely to be successful than a novice company.

Some goods may be described as having been locally procured because of being obtained through firms headed by Zambians. In reality most are actually supplied from without because Zambia doesn't make such products. While it is a requirement that local companies be Zambian owned, the Zambian named may well be a 'front name' for a more experienced non-Zambian businessperson. Given these realities, the reporting by companies (and to ICMM, 2014) on the extent of local content would appear to be exaggerated. Other key items, such as cement, had to be obtained from monopolies on the Copperbelt which made it expensive. Given the industry's need to work fast and with reliable experienced suppliers, the reality was that the outsiders had an enormous advantage over inexperienced and weakly capacitated local companies.

Genuine Zambian inputs would be those largely related to construction and services (such as security and catering) and some minor supplies, and not to industrial equipment and other materials which makes up the major part of mine demand. On a much smaller scale there was scope too, in supplying local materials for construction, as demonstrated by Lumwana's school and clinic building programme. But local provision of food items to the mines was reported to be minimal because of inability to meet quality and quantity requirements - which has obviously been a significant lost opportunity.

The situation was somewhat more positive outside the mining site where it was reported to be a more even playing field. The Solwezi housing boom in particular provided multiple opportunities for the less well/un-financed and skilled. Although there was much competition from non-North Western companies (mostly from Kitwe and Ndola on the Copperbelt), most tended to be genuine Zambian companies. The government advertising and evaluation processes were said to be fairer than the company ones, although it was reported that there was still a need for more transparency. However, there was often a problem of receiving timely payment from government, which were sometimes very delayed, a situation which a small business could ill-afford.

On a more positive note there were many contracts available for small or medium sized government and mine CSR funded construction jobs such as of schools, courts and Chief's palaces. Local labour was adequate and available and locally available supplies like sand and aggregate could be used. However, the VAT refund system was reported to have been problematic, just as it has been for the mines, and business licences (set by the Council) cost 300% more than they did in Lusaka.

It was noted that it was difficult for small businesses to upscale and that the multiple rules and regulations were challenging for many, including the twenty steps needing to be taken to register a business at PACRA. Being able to ensure that products were good quality and competitively priced, to make payments on time and to market themselves were other challenges faced by the smaller companies.

Many of these issues were raised at the 2014 ZIMEC conference in recognition of their importance during a mining boom (ZIMEC, 2014). Unfortunately, the Solwezi Chamber of Commerce was slow at developing into a strong body effectively supporting local involvement, although, thanks to Kansanshi's assistance it did improve somewhat. The company gave favourable consideration to Council members, however tenders circulated through the Chamber were reported to take too long to be processed which was disadvantageous. A capacity to mentor/coach budding entrepreneurs did not appear to exist but may have potential if adequately supported, as has worked in other countries. Lumwana and Kalumbila also provided strong support to business developments in a variety of ways. Lumwana for example, provided training for would-be contractors (see Fig. 43) while Kalumbila sponsored a website where tenders could be advertised so that the process was transparent and also provided training.



Fig. 43: (L) Participants from a local company participating in the Lumwana Local Contractor Development programme. Credit: Barrick Beyond Borders, April 2014. Fig. 44: (R) Kapjijimpanga area business development workshop, 2019. Credit: Fortune World Investments Ltd.

Despite the various constraints there were some positive examples of local initiatives such as those undertaken by Chief Mumena who established a joint local community-public investor business initiative, the Mumena Royal Investment Ltd. This business model included 20% of shares owned by the local people through the Mumena Investment Trust, 40% of shares available for local investors and the other 40% available to others which might include foreign investors. The establishment of the Musele Chamber of Commerce was another development, both setting an example for other Chiefdoms to follow, if inclusiveness was practiced. Chief Kapijimpanga also promoted local initiatives, including training in managing small businesses. A report by the contractor Fortune World Investments (2019) provided some encouraging success stories from participants who were able to put the lessons into practice. (Fig. 44). However, an early training exercise with marketeers wasn't so successful (Kansanshi correspondence). A review of the Chamber's achievements and challenges would be informative, including seeing how well they were able to support all members.

As the introduction to this section noted, while there were many business opportunities presented by the mining boom it wasn't always easy or possible to access them. This resulted in the benefits of the mining boom being unevenly shared – making for the creation of 'millionaires and bankrupts', and many in between. However, some were able to access and benefit from the training provided by the companies and the Chambers of Commerce received support to strengthen their capacity to help their members be more involved and advantaged.

Employment

Despite the widespread view that the numbers of local people recruited by the mines was very few, in fact thousands did obtain employment in the three major mines, especially in the early construction days (Figs. 45-46) However, the numbers did reduce when the mines moved into the production phase when much more skilled labour was required. Some were able to find employment in related activities such as construction, road work and security. Others were able to take up cleaning, gardening and housekeeping, including on the mine housing estates, and especially if some training was provided.

A few were able to act as 'middle men' to prospecting and mining companies all over the province and this was an area where those with local knowledge and contacts were advantaged – although some from the Copperbelt and Lusaka also took on this role, including by acting as drivers.

As discussed earlier the major mines did have a policy of preference for local recruitment using lists provided by the traditional authorities but that did not always work well and the often very low levels of education and relevant skills were major constraints to fully putting this policy into practice. The reality was that despite the provision of various forms of training, not all were able to fit well into the corporate work lifestyle.

In some cases recruitment practices were hampered by entrenched tribalism from mine staff who originated from the Copperbelt. When discovered some managers made efforts to turn that practice around. Another aspect of this issue was that a company may have tried hard to look after its local population, as part of earning its *Social Licence* but a contractor (of whom there are many and most of whom were 'outsiders') may have had no such concerns.



Fig. 45: (L) The lucky ones with mine jobs: working the smelter, Kansanshi, Credit. KML, 2014. Fig. 46: (R) Metalurgists unknown, Sydney Kabwe, and Siwila Cephas (from the Copperbelt) off to work at Kansanshi, 2014.

Companies understandably wanted to employ those who were literate and mine experienced, most of whom were not local people. Zambian mid-level managers, who frequently came from the Copperbelt, tended to employ those 'of their own kind' at least partly because they had mine work experience, if not because of 'tribalism'. However, it was true that very few local people were sufficiently qualified to obtain higher level positions and there was a failure to appreciate that mining is an increasingly mechanized and sophisticated business and no-where near as labour intensive as it was in the old days.

But as ICMM noted in its 2014 report, for every dollar generated by mining, at least \$3 more is generated elsewhere in the local economy. In addition, for every direct mining employee, as many as fifteen more jobs are created elsewhere in that economy. There were examples of this (to varying extents) in the mine areas, and especially around the Solwezi town where there were indications that the majority were working for contractors, or as waitresses, cleaners, service station, shop attendants, housekeepers, cleaners, guards, transporters, landlords and marketeers and so on.

Another example was where every expatriate such as on the mine housing estates employed from one to three local staff. By the same token, the demand for any sort of job far outweighed the number available as could be seen by the numbers turning up when any jobs were advertised. Although the mines promoted gender equality it was noticeable that the crowds were usually all young males (see Fig. 47).

Being blinded by the dream of a mine job, many did not appreciate the extent of the multitude of non-mine employment opportunities that were available. But as Senior Chief Mukumbi said to this author in 2014 (paraphrased), people would do well to shift their focus on how they too can benefit from a mining boom.

Other opportunities to benefit from the mining boom did open up, i.e. for farmers in the region who could produce an adequate quantity and quality of foodstuffs. That was the case if they could overcome production, transport and regularity of supply issues. Some did manage to do so for Shoprite and the hotels and lodges but many struggled, for various reasons. However, most farmers were instead able to provide at least some supplies for the local markets where most people shopped, although prices were cheaper and profits less. But it was very disappointing that large businesses like the mine caterers, still preferred to bring in more easily controlled supplies from the Copperbelt and South Africa.



Fig. 47: Unemployed young men (few or no women) waiting expectantly for jobs outside Kabitaka housing estate, 2014.



Fig. 48: In contrast - the unlucky ones - these two Year 12 graduates spent their days desperately wandering the town looking unsuccessfully for work, Solwezi town, 2014.

As described earlier, the transport sector also became a boom area, including large and small trucks and busses. Because of the availability of cheap, imported second-hand cars, there was also a large increase in private car ownership and taxis. Consequently, venues providing mechanical services and supplies sprang up in response to this demand.

However, there were still many more, especially young males, who were not lucky enough to obtain employment and hung around with desperation in their eyes, including some who migrated from one mine area to another in the hope that their luck would change (Fig. 48). Some came from within the province while others were from the Copperbelt and elsewhere. It was these unemployed who became the source of many of the social problems in Solwezi town and at Manyama and Kisasa – being like moths fluttering against a lighted window, in sight of the goodies within but frustratingly unable to access them. Such is the reality of a country in the stage of development that Zambia is at.



Fig. 49: Lumwana staff receiving on-site training. Credit: C. Williams' power point, 2011.

Skills Development

In response to the increase in business opportunities major efforts were made by all three large mining companies to help promote Zambian business capacity, and to try and overcome some of the hurdles. These efforts were especially directed at the local people who have been most affected by the presence of the mines. As with other CSR contributions the extent of these opportunities provided do not appear to have been fully recognized by the public, nor well appreciated. But they too did help to some extent, to develop local knowledge and skills and potential involvement in business (Figs. 43 and 44).

By the same token, as mentioned previously in regard to employment, issues have arisen related to some recipients not being receptive to the education provided and holding attitudes which are not conducive to being effective in business. Interestingly, in the Kansanshi area women were found to be much more responsible and effective than men in responding to business development education and a similar situation was observed in the Lumwana area.

How much training the smaller mines such as Jifumpa, Kalengwa, Kamatete, Jimbe and Katokomena provided to their local workers has probably not been documented. It is likely to be limited to on-the-job, task specific instruction for very basic tasks. This situation would be partly due to their much smaller company capacities, including lack of professional training and social staff and relatively small budgets. It is also unlikely that they conducted community capacity building and their local procurement was probably limited to casual labour, a few basic building materials and perhaps some food items. A different type of opportunity occurred when a small mine in a rural area was closed down for economic reasons. Local people took advantage of the situation and undertook hand mining in the deserted pits there, bagging the minerals and having them trucked off to Kitwe (including passing through an army post on the way). There were likely to be other such examples.

Another important but often un-appreciated aspect of mine work was that an enormous amount of both basic and advanced training was provided to employees, including on-the-job and/or in the form of scholarships for training at various institutions, including at the post-graduate level. (Fig. 49). Thousands of workers at all large North West mines consequently learnt new skills, for example, to run and maintain machines, drive giant trucks, manage accounts, supervise other staff, deliver OHS services or to be involved in lower level activities such as a cleaning, gardening, catering or security work. Those working in the mine plants also learnt that mining was hard physical work (Fig. 47), and which required discipline and much concentration and attention to meeting deadlines.

While North Western farmers were used to hard physical work it was not as constant or as dangerous as was mine work. Hence some mine jobs would have been quite stressful for those un-used to such a lifestyle. Mining work wasn't as glamorous as many had first thought it would be.

Some local people were able to take particular advantage of the opportunities provided by the Kansanshi CSR programme (Box 5 gives one example) and went on to significantly improve their own lives and those of others.

Box 5: A Local Good News Story from Kansanshi Mine Area:



Fig. 50.

A Transformation in Five years

Selesty Kayumba was born in a rural area of Solwezi District, where, because his parents were poor, he was only able to complete Form Five at the local school. However, some years later, he was able to obtain training at the Christian Mission in Many Lands school and then worked for the church for ten years.

Selesty then became involved with the mine neighbouring Mbonge and Ngombe communities' struggle to be compensated and relocated as a result of the Kansanshi mine revival and expansion, especially during the period 2012-14. Due to his leadership he became a Community Liaison officer, to help resolve the issues.

This community work led to him becoming known to company staff who recognized that he was reliable and conscientious. He was able to increase his knowledge about sub-contracting by participating in training opportunities provided by the company, including learning how to register as a small company, manage labour and finances and how to bid. He was consequently increasingly able to obtain sub-contracts for various jobs around the mine site and at Kabitaka housing estate, including gardening, cleaning, electrical work, maintenance and fencing.

Gradually he built up a team of about sixty, using local people and a few others who had the technical skills needed which local people did not possess. He also trained up his previously unskilled local staff and became recognized as a reliable emerging local contractor.

The end result was that members of the local communities benefitted from the employment opportunities and ceased to complain about not being able to participate in the mining developments on what had been their former land. He has also continued his own education by attending a training course on construction run by the National Construction and Engineering Institute in Lusaka.

Mr Kayumba's story is one of hard work, dedication and initiative which combined to enable him to make the best use of the training opportunities which were provided. Ably supported by his wife Winfridah who supplies vegetables to mining companies, he has in turn helped to enable more of his own people to become income earners and to develop their skills.

This change didn't happen over-night. It took about five years to really come to fruition but his planning, patience and persistence paid off.

Based on interview, discussions and observations since 2013.

Reflections

The advent of the large mines transformed employment opportunities in Solwezi District, both in and outside the mine sites.

However, a major issue arose during the first decade as local people presumed that they would all obtain employment on 'their' mines. But the reality was that few were sufficiently qualified. As Kansanshi found, many who applied didn't even meet basic entry requirements, with very high failure levels occurring in the basic Year Seven level tests given. The prevailing poor education levels did not equip them well to working in an industrial complex, except when unskilled work was required which is often of short duration. What the actual percentage of locals employed ended up being by the end of the decade (if indeed 'local' can be defined) would require a detailed analysis of all mine and contractor's employment data, National Registration Cards and the Chiefs' lists of registered local people, and the type and duration of employment.

The fixation of mine work being seen to be modern and prestigious was unfortunate because there were in fact many new opportunities outside the mine sites, although again competition there was also fierce and required a certain level of know-how to be profitable.

Such an attitude didn't help the atmosphere prevailing during the decade when it became apparent that the outsiders who were better educated were obtaining many of the jobs. It was also obvious that the high levels of national unemployment contributed to the influx of job seekers which occurred. Also, in their efforts to attract workers to the North West, the companies offered higher wages than were being offered by the Copperbelt mines - hence the flood of job-seekers which arrived. The perceived, and long standing, biases against North Westerners by the better educated people from other provinces inflamed the tensions about job availability. Such a background made the subject highly political and sensitive. In turn, Governments' inconsistencies about the policy of preferential treatment did not help the companies to steer a straight course on the subject. It was a complex subject and not easy to address.

However, thousands of Zambians were employed and the multitude of staff training opportunities provided by the companies did represent a significant contribution to improving local and national capacities. Training for those outside the mine sites also contributed to improving skills and knowledge in business matters. It was also notable that concerted efforts were made to ensure that these opportunities had also been available to women, with companies well aware of the need to encourage gender equity and the importance of being seen to be doing so. However, it is not easy for women to move into such a male dominated world. Some professionally qualified female workers have had to face various, often subtle forms of discrimination from those who resent their intrusion into their masculine sphere. Such practices occur despite company gender equity policies - and unfortunately, are common world-wide. They take strong management leadership and time to change.

PART FOUR

OTHER IMPACT

- Government
- Culture



Fig. 51: (L) The District Commissioner's office Solwezi town, 2014. Fig. 52: (R) Newly renovated Solwezi Municipal Council chambers, Solwezi town, a contrast to the poor state of the Council offices, 2014 before the building of a new block in 2015/16.

Bukomo Bvila Mwukwingila Na Ngovu²³

Overview

A mining boom inevitably impacts on the host government. Heavily affected at the provincial level were the provincial branches of national ministries and at the district level, the Solwezi District office (Fig. 51) and the Solwezi Municipal Council (SMC). All three large mines were situated in the latter's jurisdiction (during the first decade), hence Solwezi town, the provincial capital, became the centre of administrative and business action for mining matters

When the Kansanshi revival commenced in the early 2000s it seemed to the local people that at last the much sought-after dream of modern 'development' had finally come to North Western province. Earlier Kansanshi developments had been beneficial to the town, albeit only erratically and for short periods. But with the excitement of its major upscaling and later the development of Lumwana and Kalumbila, came many challenges for the various levels of government. The disorderly situation which developed was described earlier in the section on Solwezi town. But Solwezi wasn't the only mining town to be so disreputable. In the late nineteenth century Kimberly in South Africa was once in a similar state of disarray, being described as '... not being a glittering city of diamonds' but ... 'a small stagnant town servicing a big hole' (Millin, quoted in Giliomee and Mubenga, 2007, p. 161). But while Solwezi was disorderly, it was far from being 'stagnant'.

Given the extent of disarray that arose, and the many problems experienced around the town area, and at Manyama and Kisasa, it was difficult not to judge both provincial and district governments for having been irresponsible for not managing the developments more effectively. However, in order to find some explanations for the situation there is a need to take into account the capacity of the provincial government and Council, the adequacy of their resources (human, financial and equipment), prevailing attitudes to governance and the extent and speed of the developments.

²² Terms used locally about the SMC

²³ SMC motto: Development comes from working hard

Being able to cope effectively with such dramatic changes in the district required considerable capacity (and budget) including planning, financial management and monitoring, with capable, well-equipped and experienced staff or contractors available for implementation. However, the mining boom occurred in an era in which nation-wide the civil service was in an *archaic state* and politically driven, making it difficult to manage effectively, even if led by a competent Deputy Minister, Permanent Secretary, District Commissioner and Town Clerk.

Historically, the civil service got off to a good start in Zambia with the first President of the Republic putting in place a plan to help manage the transition to Independence. The education system was boosted and the National Institute of Public Administration (NIPA) was established in order to produce well trained civil servants. But NIPA's capacity and that of other government agencies eroded over time due to the effects of the 1980s national economic downturn and structural adjustment programmes. At about the same time the effect of untreated HIV infections started adding to the depressed situation. At its peak and before the arrival of anti-retrovirals in about 2000, the impact of HIV/AIDS decimated government staff, including, crucially, strongly affecting the quality of all levels of the education system. Thousands of teachers were sick and dying each year in the period pre ARVs. There was also a loss of graduates to other countries in search of better paying job opportunities. NIPA went on to develop a more commercial focus. The lack of strong national leadership to address the resulting weaknesses in the civil service in recent years was clearly apparent throughout the country.

An increasing politicization (and all that entails) of senior positions did not help, and it also meant that those in positions of authority were probably not qualified for, or experienced in handling such demanding positions.²⁴ Political appointments also had the potential to create fear and affect decision logical making. Prevailing conditions of service were also an issue, including the often delayed payment of salaries and allowances. In addition, there was some degree of 'brain drain' to the mines, including the unfortunate case of a health worker becoming a mine security guard because it was better paid. The not unrelated economic developments which occurred from around 2010 in Lusaka and on the Copperbelt also provided potential civil servants with much more profitable employment alternatives in the private sector.

The end result was that the capacity of the civil service to provide a cadre of competent and experienced staff had been significantly weakened. This is not to say that there were not some capable civil servants but they were in the minority, trying to do their best in what had become very challenging circumstances.

Another issue was that the incumbents of the Deputy Minister, Permanent Secretary (seven in the decade) and Town Clerk positions were frequently changed. Such a turn-over made for a lack of constancy in governing, which had its pluses and minuses, depending on the capacity of the incumbent.

The administrative structure in Solwezi in itself was problematic, including as it did a Provincial Minister, a District Commissioner, a Town Clerk and a Town Council Mayor. This array made for a potentially confusing and over-lapping leadership in one small town.

²⁴ An example was where one of this author's former staff, an accountant, was fired for stealing but not long after was appointed DC, only to be later charged with the same offence while in that role in another location.

Solwezi Municipal Council

The make-up of the Council, consisting of largely rural based elected ward representatives, meant it was ill-equipped to deal with complex administrative matters because of their often inadequate education, administrative experience and limited world-views. The GRZ Solwezi Status Quo report of 2009 report noted that the Council ‘...to a large degree does not have the capacity to articulate issues of governance...’ (GRZ/SMC 2012). At the December 2012 meeting the Mayor himself admitted that the Council did not have a good reputation (SMC meeting minutes, March 2013). In 2014, the then Mayor, himself a counsellor for some years, admitted as such when he said that ‘... the current group of counsellors has not worked to people’s expectations in terms of development.’ (quoted in the *Zambian Post*, 2014b). Counsellors too weren’t always ‘clean’ in their involvement, with a respected citizen being reported as saying at the Council of Elders meeting in 2010 that ‘A number of officers in the Councils are always in court over land issues.’ (Council of Elders report, 2010). Chiefs had seats on the Council but were said not to be playing as an active role as they could have been, except on the Committees such as Land and Planning.

Efforts were made by donors to help them improve their capacity but progress was reported to be slow, at least partly because of the inherent socio-cultural and political constraints, and also the turn-over of members. SMC Minutes and Kesselring’s study (2018) also indicate the inherent capacity weaknesses and politicization of decision making.

A different issue related to the speed at which mining companies need to work to set up and re-coup their investments. This contrasted with the very different pace at which a government administration can work, even in the best of circumstances. Such differences in working styles were bound to cause significant tensions between these key players and did so.

Planning

The situation which arose wasn’t for lack of planning for there were numerous planning exercises and reports over the years, such as in 2006, 2009, 2010 and 2016 – but their recommendations were rarely actioned and often delivered somewhat ‘after-the-event’. Unfortunately, the early political pressure to implement these plans faded after President Mwanawasa passed away in August 2008. Another issue was that mine developments moved fast, as did the rate of new arrivals coming to town. The slower moving bureaucracy consequently lagged behind, with ‘the facilitator sleeping’, as one bureaucrat said.

The GRZ Spatial Development Framework of the Integrated Development Plan, (GRZ 2009), noted another issue under the section on Social Environment: that of the lack of recreational facilities in the town, reporting that ‘Most of the planned open spaces have been taken up by built structures, mostly residential, after having been erroneously given out by SMC without legally changing the use of land.’ An education official also reported that the Council was taking land away from around their facilities in the town to use for businesses and housing, thereby preventing them from expanding to meet the ever-growing needs.

There were many such complaints from individuals, including one of the mines discovering a block they had sold on to someone else. Some chiefs were reported to being less generous about giving land out to GRZ because they now detected opportunities for cashing in on the number willing to pay for it, including the mining companies.

Staffing

Another reason why both levels of government were not able to function effectively was that they were inadequately staffed to perform their many administrative and technical roles and to meet the greatly increased demands. The 2009 Solwezi Status Quo report mentions the issue (5.2.1.4) and it is also reported on in the 2012 and 2013 SMC minutes (GRZ/SMC, 2012/13). This was especially so in regard to technical staff such as engineers, planners, health workers, electricians, surveyors, health inspectors and accountants. For example, it was reported in 2012 that the SMC had no electrician on staff and in 2013 only one public health inspector. The latter especially made for an impossible situation given the need to deal with the greatly increased numbers of both formal and informal food and drink outlets not to forget the hotels, lodges and schools. All of these facilities required monitoring, especially because of the ever-possible appearance of cholera. The health inspector was also reported to having faced serious challenges in trying to carry out his work, including having to cope with verbal and physical threats.

It wasn't any better in the provincial government: e.g. the Police had 67/130 positions filled (2005 data); Solwezi General Hospital had an establishment of 358 positions but only 201 were filled (2009 data, in the Status Quo report). Only seven out of twenty-seven medical officer positions were filled and some positions were filled by expatriate doctors on contract, including those from the Congo DR, Europe and Asia. District clinics were also desperately short of staff, with the poor conditions of service being reported as part of the reason for the shortages. The latter situation was why the Ministry agreed with this author's proposal to bond UNFPA funded nurse graduates to work in the districts for at least a couple of years after graduating to help fill the void. In the education sector the national standard for the teacher: student ratio was exceeded in the majority of classrooms while Agriculture reported many positions not filled.²⁵ These figures worsened in later years as the population influx increased in all three mine sites, as described earlier.

As ICCM (2014) reported: 'Local administrations have been unable to ramp up the quantum of public service provision ... to deal with fast-growing populations ...' (p. 92). Requests for more positions were made to the Ministry of Local Government Commission but they had not been responded to, at least by mid-2013 (informant, 2013).

Where there were staff they were often handicapped by the lack of resources to carry out their work, including functioning vehicles, fuel, stationary, supplies and allowances. It was also notable that many provincial and district staff were having to work in very dilapidated conditions, with only the Council meeting room being upgraded (Fig. 52) until the building of the new offices next door was finally commenced in 2015 (Fig. 53).

The above is not to say that many civil servants did not try hard to perform their duties against the odds, for some did, but others were known to make use of their positions in order to improve their own personal situations. In terms of workload senior staff had a constant battle to deal with the streams of supplicants, both single and in groups, from all sorts of backgrounds. These people were all demanding attention for their particular issues, many relating to mining licences and land and business applications.

²⁵ Various sources, including the Solwezi District Situation Analysis 2005, the Solwezi draft Integrated Development Plan Status Quo Report 2008, the Community Development Report 2007 and the MACO annual Report 2012.



Fig. 53. The new Solwezi District Council building under construction, 2016. Credit: Lusaka Times.

Financial Situation:

National level

A key issue was that national government had failed to increase funding and staffing establishments, commensurate with the greatly increased population (see below) and consequent demands on the town.

It was beyond the scope of this study to examine to what extent the national financial allocation to the province was increased to cater for the greatly increased population but there were many signs that it was way below that required to meet the needs. ICMC in its 2014 report also noted that the problems were partly due to irregular, unpredictable and inadequate distribution of payments from the national level. This situation was quite unlike that pertaining on the Copperbelt in colonial days when the company was competently in control of all civil works and services, with an adequate budget.

Provincial sectoral ministry staff were consequently hampered by budget short-falls, not just for in-town work but also for fuel and transport necessary to deal with the distances and the low density of the rural population. The distances factor, as one Education officer said during an interview in 2013, '*... plague the department*', and which was also relevant to other ministries. They were also poorly equipped and staffed. The Department of Community Development and Social Services 2007 Annual Report (GRZ, 2008a) provides a glimpse into how poorly resourced they were at that time, and it is likely other departments were in similar situations:

The Administration of the Province was eccentric ...- due to the numerous gaps experienced in the course of the year. Staff morale and consequently performance were adversely affected in view of the non-ending restructuring of the Ministry which seems to have no specific time frame; the dilapidated or lack of staff accommodation; inadequate funding and lack of other resources and logistics to facilitate monitoring of programmes. The establishment for the Province is 103.

However, the Province conducted its function with a workforce of 70 officers... (p. 3). Transport situation in the Province worsened during the year. The department operated on a "Management by Crisis" situation. There is literally no form of transport at the Provincial office since the old Nissan broke down in February. Efforts to repair it proved more costly than buying a new one... Motorbikes in all districts need spare parts..., even fuel.... Even the few officers who had bicycles have failed to maintain them due to high cost of spare parts (p. 13).

From another angle Provincial leadership was reported to be ham-strung by the lack of decentralized power to the provinces e.g. the power to make decisions regarding land and mines rested in Lusaka and added to the time it took to progress tasks. This meant that the Provincial Minister, as an informed source said, ‘... just acts as a post office box even though he is the face of GRZ in the province.’

The situation for many departments was made even worse once Lumwana and Kalumbila commenced because of the distances and many more demands. Another problem was that there simply weren’t enough provincial and district staff with time to participate in all of the various mining related meetings, even if they had the transport and fuel to attend. Consequently, their absence was often missed by communities who felt disadvantaged by the lack of their support and involvement, as commented on in EISs and other reports. The overlap of Kansanshi’s long-dragged out resettlement issues with the other two mines coming on-line also contributed to straining government capacity, both local and provincial. It was a very challenging situation for government agencies.

District level

The district council financial situation was also reported to be problematic, as indicated in both the 2008 Status Quo report and more recent Council minutes. Its capacity to fund raise was dependent on its ability to collect local taxes and fees should have been obtained from the thousands of new houses and businesses which were established because of the boom. For example, the number of small-medium sized businesses registered in 2003 was 204 but by June 2008 it had doubled to 418. Guest houses, hotels and lodges also increased, with 25 registered in 2007 and 148 in 2012, and numbers increased further after that date (SMC reports). Cheelo (2008) looked at some aspects of these developments. A newly installed Mayor commented (paraphrased) that the Council was not collecting enough revenue and that it had not done enough to transform the infrastructure (Zambian Post, 2014b). Kesselring (2018) described how the collection of local taxes by the SMC was less than optimal and that consequently it relied heavily on the mine’s contributions.

There were other issues: personal emoluments took up a major part of the budget and limited options for funding other items. The Council was also hampered by the diversion of some previous sources of income, such as water and sewerage rates and road taxes to other offices. Low fees too were an issue which, perhaps, given the boom economy, ought to have been more in line with (some) people being much better off. This target should have included those who were capitalizing on the increased population and renting out houses and flats at high rates, a practice which became a popular past-time. Musonda (2011) provided figures for rents during this period, some of which were said to be as high as those in Lusaka.

The Council’s ineffectiveness at collecting taxes and fees was also partly the result of having to do so from the poorer sections of the population who lived in unregistered, unmarked houses along informal tracks. Others were quite skilled in avoiding such charges and there were insufficient numbers of staff to chase them up. But it would not have been politic to do so at times, given that some of them were in positions of power. The 2008 Solwezi Status Quo report (5.3.3) seems to be referring to such an issue when it stated that ‘Political interference has also hindered the capacity of the Council to raise adequate resources...’

The SMC’s ability to collect its dues from the greatly increased population was consequently sorely inhibited.

The district (or at least Solwezi town) however, was fortunate to benefit from the many contributions made by the mining companies, especially to infrastructure which provided a significant and insufficiently acknowledged addition to local government's assets. The contributions included renovations to the general hospital, the procurement of road mending equipment, and the upgrading of some roads and the airport, not to forget the building of many schools and clinics. But overall the state of the town barely improved because the extent of the need was so great, and the population was increasing so fast.

Governance

Standards of governance were often weak and numerous illegalities occurred, many of which ended up in court – causing yet another *boom* there and diverting attention and resources from the usual type of cases. Opportunists took advantage of the prevailing confusion and weak situation, especially about land and business developments. Even Provincial Minister Mubukwanu complained in public about 'Solwezi's perennial illegal land allocation scams' (Zambian Post, 2013a). Community members and mining companies had good reason to complain about issues such as the blatant double selling of blocks and other discrepancies in governance.

Council audit reports also identified many weaknesses which were never or not able to be followed up. Failure to follow proper procedures was reported in SMC minutes as being a problem, as was not having sufficient numbers of staff to ensure compliance through separation of duties. Trying to encourage staff to maintain proper standards and to have problems addressed was reported to be a nightmare for auditors.

Other audit reports also revealed high levels of corruption in the use and management of the Community Development Funds which were meant to be distributed for poverty reduction micro projects at constituency level. The issues were said to be the result of the lack of poor oversight and inadequate reporting. Despite these reports, culprits had not been punished according to the author (Mondoloko, 2013).

The quality of workmanship undertaken by council workers and contractors was also problematic e.g. water pipes laid too shallow and close to a road, the renovation of the Council premises delayed and over-budget, the Council Rest House improvements were inadequate and many newly erected streetlights were not working soon after their installation. There were also cost over-runs and late completion of contract work and inappropriate approvals for contracts (SMC reports 2012/2013).

It was apparent that the SMC had very limited capacity to complement Kansanshi's efforts to effectively provide basic services for the immediately affected local population, let alone for the influx of newcomers. In theory it should have been doing so, for example by providing bore holes and roads. However, its own capacity and that of the contractors available to it was weak, especially in terms of quality of work and timeliness. Provincial ministries also had problems trying to complement mine contributions, such as with staff and equipment for schools and clinics. Hence, by default, these responsibilities often fell to the much more efficient (and better resourced) company, including the provision of road making equipment for the SMC. The capacity of the Council to assist its constituents at Manyama and Kisasa, not surprisingly, was even weaker.

Many issues resulted from the way matters were handled, especially in regard to land ownership boundaries, titles, finances and planning. Corruption was reported to be endemic. Inadequate technical capacity was also part of the problem, including a lack of surveying capacity which was much needed at the time. There were numerous other examples of management problems which disadvantaged local communities, including failure to help effectively with relocations and finding new farming land. The efforts of all three of the big mines to get things done on many occasions were often thwarted throughout the decade, as described earlier.

While there was a provincial government resettlement office with experience in undertaking such exercises (which were quite common in Zambia) it was too poorly resourced to be able to deal effectively with the greatly increased responsibilities at both Kansanshi and Kalumbila. The lack of an approved Resettlement Policy and clarity about compensation rates, especially during the early Kansanshi years, was particularly problematic.

It is apparent that there were deeply imbedded weaknesses throughout the system which under-mined both local government and SMC efforts to bring development to Solwezi town and district.

Population

A key issue for local government was that the national allocation to the province was based on a formula related to the size of the population. However, the data used in the first decade of the mining boom was from the 2000 national Census. Consequently, it was very out of date and inadequate given the changed situation in parts of the province. This was an issue which needed to be resolved at the national level, justified by the special circumstances prevailing. In the mean-time government officials were bound by regulations to use the out-of-date figures which put them in a quandary. Even the 2010 census data was not much use as it was not available for a long time after the actual Census took place. It wasn't until 2016 that more reliable data was available from the Solwezi Urban Baseline Study, but that was just for the Solwezi town area (GRZ/GIS/SMC, 2016). This data, which provides the most likely scenario, indicated that the population had increased perhaps five-fold to about a quarter of a million.

From the locals point of view an apt description of the public reaction to the inadequate national allocation might have been, to re-apply a quote used by Pesa (2012) from John Sawanda of UNIP Mwinilunga branch in 1970: 'We have killed this animal together, may I also have a share?'

The inability to control the population influx into Solwezi District, mainly from outside the province, was a major issue, especially those who became or stayed unemployed. If there had been some sort of control system at the 'border' (Chingola turn-off) the stresses on Solwezi town and Manyama and Kisasa would have been much less. The colonial Copperbelt mines prevented such problems by using the *chitupa* system which required anyone entering a mine area to have an employment card. But such control would be an unwarranted suppression of freedom of movement in this modern day.

Diversion of Attention

Another factor in this story must be that the need to deal with so many and often complicated mining related issues in three different areas must have affected the ability of both the Provincial government and the SMC to evenly devote their attention to their other constituents. That doesn't even take into account the needs of and demands of the smaller mines, let alone issues raised by exploration and un-licenced mining which was going on.

It was not clear what role provincial Members of Parliament were playing, as they did not seem to be actively representing the interests of their mine-affected constituents with concerns expressed that they only turned up at election time. One exception was when local member Lucky Mulesa walked the T5 in 2013 to protest about its poor state which created considerable publicity (Zambian Nation, 2013). But he was subsequently ineffective in ensuring the improvements actually happened once he took up a ministerial position based in Lusaka. Such inaction by MPs in representing their constituents at the national level may have been related to the political situation which is described below.

The Role of National Government

There were also many issues at the national level, including practical and organizational ones, as well as political interference and multiple changes in the Mining Minister position (seven from 2010), and similarly with Lands and Environment. Also, the system was complicated, involving many agencies which had to cooperate with each other i.e. ZEMA, the Ministries of Mines, Lands, Environment, Forestry, Agriculture and the social ministries. Some decisions were only made at State House level.

Achieving cooperation between them all was challenging at the best of times, and consequently, processes were cumbersome and too slow to deal effectively with a mining boom which by its very nature, in a time of heated prices, needs to move fast. This may explain why companies sometimes took short-cuts in their impatience to move from construction into production.

Adding to the complications, three different presidential changes took place during the decade i.e. Mwanawasa (2002-2008), Banda (2008-2011) and Sata (2011-2014). These developments resulted in changing priorities and types of political interference. One provincial level official complained about delays at the mine development stage, saying that 'they are trying to milk the cow before it fattens' and giving little back to its owners.

Not surprisingly there was some degree of public discontent about this situation, with various 'Ghandi' versus 'Che Guevara' approaches to dealing with this issue being mooted behind the scenes. Even the memory of former Deputy Minister Bert Mushala's famous rebel father was publicly invoked at one stage. A sign board with the words 'Mushala Was One But We Are Many' was reportedly carried during the 2011 Solwezi town disturbances. Interestingly, Larmer and Giocoma note in their 2007 paper on the Mushala rebellion that Mushala himself '... explained that he was fighting to address the marginalization of the North-Western Province and its peoples.' So whoever came up with the sign board title must have had a very good sense of the province's history, which both the elder Mushala and John Sawanda would surely have appreciated.

In regard to the less than generous contributions from the national to provincial level, one is reminded of the old term for Salisbury (now Harare). Pritchett noted that at the time of Federation (1953-1963) 'All taxes raised within the three territories (Nyasaland, and Northern and Southern Rhodesia) were first forwarded to Salisbury for accounting before re-allocation to Northern Rhodesia.' As a result Africans took to calling Harare *Bamba Zonke* (take all) (Pritchett, 2007). History seemed to be repeating itself, yet again

Certainly, there was much evidence of inadequate resources to meet the greatly increased demand for services such as health, education and roads but how this compares to other provinces needs to be considered. A related issue relates to Section 136 of the Minerals and Mining Act, which is meant to ensure a specific financial contribution to the mining area but which apparently depended on the will of the Finance and Mining Ministers. However, this item does not appear in the updated legislation.

Examples of the sort of issues which national agencies faced were described in GRZ's Environmental Council of Zambia's (later ZEMA) 2010 annual report which noted that there were many constraints to undertaking its crucial role, including inadequate funding for operational costs, for following up of non-compliance, including non-payment of licence fees, submission of statutory returns and pollution from facilities. Issues also included poor cooperation from lead agencies regarding submission of comments on EISs. Their provincial based staff also experienced problems, with the ZEMA staff based in the very demanding Copperbelt area also having to cover the North West (GRZ/ECZ, 2010). The Ministry of Mines had only one officer in Solwezi for the whole of the North West until late in the first decade and the Ministry in Lusaka itself was reported to be poorly resourced, including at the Cadastre Office. Also, as described in the earlier section, staff in both offices were inundated by the nation-wide boom in licence applications during the 2000s, at least until the system was rationalised after 2012, and later tightened up even more. It was unfortunate that the nation-wide mining boom was happening at the same time as the civil service was in urgent need of rejuvenation and professionalizing, and especially being de-linked from politics. Even the most dedicated and professional of officers found it difficult to function effectively in such an environment, let alone one which was riddled with opportunism.

National government also contributed by failing to pre-empt the challenges which would arise by providing adequate financial and staffing support to local government to enable it to implement the district plans that had been prepared. There was clearly a lack of political will for taking responsibility and providing strong leadership to guide and resource the developments after President Mwanawasa died in 2008.

Not surprisingly politics also played a part in this story - and might explain the national attitude to the province during that period (although it later changed somewhat). NWP has a long history of going against the national grain and did so back in the days of the First Republic (Pesa, 2012b), and also during the 2011 elections when many did not vote for the current ruling party, the Patriotic Front. Anecdotal information suggested that Lusaka did not want the North Western Province to succeed, that President Sata hated the Province and that the Bemba always felt that they could lord it over the weak Kaonde. Whether true or not these were commonly prevailing perceptions. When there was a protest in Solwezi in late 2011 the President threatened to call in the troops - presumably because there was risk to the flow of copper out of the province which would in turn affect national revenues. Interestingly, the President (then new) was reacting in an authoritarian manner similar to that used by President Kaunda when UNIP tried to curb the North West dissent in the 1970s.

Reflections

Looking back it was obvious that the state of Solwezi town was inadequate even before the mining boom began. The extent and speed of arrival of the population influx therefore presented major challenges for all levels of government. The arms of local governments in particular were not appropriately structured, staffed, skilled or resourced i.e. empowered, by the national government to effectively manage the demands of a mining boom. Because all three major mines were situated in the Solwezi District the town inevitably became the centre of most of the action, with Manyama and Kisasa later emerging as minor 'hotspots'.²⁶ Consequently, the District administration was over-whelmed by the demands for its services and other areas largely neglected.

A particular problem was that the Council lacked the capacity, and political will, to benefit from the increased population which could have provided much more local revenue. It also appeared that it was abdicating many of its own responsibilities to the far more efficient and better resourced companies, despite the large amount of funds they were already contributing at both the provincial and national level. But it was easier to plead to them than to the distant capital.

National government itself was over-whelmed by all of the demands being made on it, including from other provinces, as interest in mining increased dramatically from the mid-2000s. But despite the wealth arising from the North West mines the province was not treated as a priority but essentially left to struggle on its own.

Corruption was rife at all levels and seriously undermined the already weak systems. Some elite individuals in particular took advantage of the confusion and opportunities. While some cases did end up in court, there did not seem to be a concerted effort by leadership to overcome the problem. Solwezi had become a magnet for those who saw it as a honey pot to be exploited as quickly as possible, by many.

Neither the companies nor the mine communities were able to receive the full support they needed from government agencies and the needs of citizens were not adequately provided for nor their rights protected.

It was also apparent that the capacity to cope with the unfamiliar and often urgent demands of a mining boom required time to mature. The first decade was definitely a steep learning curve for all involved in it.

Consequently, it was hardly realistic to expect a more positive scenario in these circumstances. In fact, it is surprising that the system coped as well as it did although Civil Servants were ill-equipped to do so and it was a constant struggle to get things done, let alone efficiently. Solwezi was not a 'new' Copperbelt.

²⁶ After 2015 Lumwana and Kalumbila were included in the new Kalumbila District.



IMPACT ON CULTURE AND LIFESTYLE – the heart of the people



North Western Province is well known for having maintained strong traditional cultures. This has been made possible at least partly because of its relative isolation from modern developments and because most of its population was widely dispersed in rural areas. However, the advent of the recent mining boom has inevitably begun to exert an influence on various aspects of traditional life. The impact has been much greater than that which happened in the past when outside influences constituted a few small mines, men going off to work on the Copperbelt and elsewhere, some commercialization of agriculture and the presence of missionaries and a few aid projects. However, the new impact has been largely limited, but not entirely confined, to the major mine areas.

This section examines some evidence of that impact, including on traditional leaders, ceremonies, language, popular music, clothing and relationships.

The Role of Traditional Authorities

Historically Chiefs have usually played an important role in Zambian society. The Hon. Mukande, MP described their key aspects of their roles in Parliament:

Furthermore, there is evidence to suggest that in many countries, Zambia included, chiefs play a vital role in the governance system in areas such as land administration, natural resources, local justice, and the enforcement of customary law. In addition, conflict resolution continues to be an important sphere of their responsibility. In fact, Mr Chairperson, the longest existing local government system in most African countries is the chieftdom. (Hansard. 20th November 2014.)

But views on the importance of the role of traditional leaders in Zambia have varied over the decades with some arguing that the institution is an anachronism and an unnecessary additional level of governance. However, they still maintain a significant position, performing a variety of duties for the people in their jurisdiction. This development included the language associated with the Chieftly system being ‘upgraded’. The terms ‘royal’ and ‘palaces’, for example, started to come into common usage, thereby being seen to increase the importance of their role in the public eye.

Cultural expert Mulenga Kapepwe (communications 2014) suggested that the rationale behind this development was to do with Chiefs being anxious to move from the ‘native rulers’ or ‘authorities’ titles used in the colonial times to something more to their liking. Consequently, it was politically astute to oblige them due to their perceived potential to influence political matters in their areas. But the terms by which they should be addressed is an on-going issue even today. Certainly, Chiefs have been wooed heavily by recent governments, including allocations being made in national budgets for various forms of support and by having their salaries increased. As seen in many news items, recent Presidents have made a point of being seen to pay their respects to Chiefs when visiting their territories, obviously as a way of hoping to change North Western voting patterns. With the advent of the mining boom, Chiefs with mines assumed an additional strengthening of their power, as described below.

The Role of Chiefs in Approvals and Negotiation

Chiefs became important players in the mining boom because they needed to be consulted and their blessing obtained by anyone interested in undertaking economic development activities in their territories. This included exploration and mining projects because a Chief's signature is a requirement for an application to proceed. However, that authority is limited to an area under 250 ha and the ultimate approval lies in Lusaka. Some visitors to the province are not aware that such transactions are not a sale of land but an allocation for use because a Chief is merely a custodian for the people and the land is not his/her personal property. As one government official said '... no investor should pay into a Chief's personal account for that would be a form of corruption...' (Interview 2014). However, some types of investors were known to offer such payments as a matter of course, it being their usual way of doing business. Others began to adopt the practice - which was obviously a temptation in a cash-strapped society. Such payments would not be recorded, contributing to the lack of transparency about such deals.

The requirement for a Chief to sign off on agreements may be a tool of power. From the early 2000s, many have been inundated with those requiring their approval to explore or mine. These have included large, medium and small-scale enterprises, both Zambian and international. This was especially so in Solwezi and Kasempa districts, to where most licences were allocated. Consequently, a few Chiefs suddenly had a greatly increased workload because of the need to meet with these applicants, respond to ZEMA, participate in EIA meetings and read the resulting reports. They also needed to communicate with District and local Council officials and sectoral ministries. Those not proficient in English and therefore unable to read the proposals and reports had to depend on educated clansmen or friends to advise and act as intermediaries. Some of these advisors visited or moved from Lusaka or the Copperbelt to help. Chiefs also had to attend to local farmers anxious about possible loss of their land, as well as to new arrivals who wished to settle in their area. While the Chiefs associated with the big mines had the heaviest workload others were affected to a lesser extent. Either way, the intensity of the demands must have been overwhelming during this decade as the number of people requesting licences increased rapidly. Such demands undoubtedly increased not only their workload but also their importance and authority.

Most Chiefs had little or no background in business and legal affairs, and some were not literate in English. Consequently, they were not equipped to understand the regulations and legalities, nor to manage the stream of deputations. Also, few Chiefs or applicants, if any, understood that the majority of exploration licences would never eventuate in a productive mine or that any real prospect would take years to come to production. Chiefs received minimal support from government and particularly so for handling the responsibility of assessing proposals and agreements when actual mining (rather than just exploration) did result.

To be able to cope, especially in regard to the larger mines and heavily licenced areas, Chiefs needed administrative resources e.g. an office/meeting room with furniture and office equipment and supplies. As well they required funds for transport/fuel for assessing and monitoring sites, as well as maps and technical and administrative advice. Such contributions would have helped them to be able to deal more effectively with the requests, including by keeping a register of legal activities and mapping them. It would also have helped to be able to identify any un-registered mining.

They also needed training in reading regulations and agreements and in how to negotiate agreements better. Government, through its provincial Traditional Authorities office, did provide minimal training and a computer, but not until late in the first decade. Meetings of Chiefs affected by mining helped a little but they were reportedly too few. In 2014 the North West office did not have a budgetary allocation for such support. Some Chiefs and Sub-Chiefs did gain considerable experience as the years passed but they learnt the hard way.

It also appeared that there was little room to negotiate with the major mining companies because the Development Agreements for the large three mines were almost entirely focussed on government-company matters, not community ones, and they were not made public. The discussions which did occur were about the provision of CSR in general terms. But this subject was outside the legal framework, with the amount of funds available solely dependent on the companies' discretion. Numerous other issues arose for Chiefs, creating many headaches and somewhat dampening their enthusiasm for supporting mining. As Chief Mumena said in interview in 2012 'It was not a fair deal'.

Inadequate communication with their own people also caused problems, as happened when a Chief dealt alone with investors and failed to inform his people about what was going to happen. This resulted in surprises and created much anxiety and suspicion, as occurred during Kansanshi's early days, and later at Kalumbila and Kasempa. There were also communication and related issues between Chiefs, Sub-Chiefs and Headmen, the latter also having to deal with investors who were checking out the land for which they were responsible. They had even less resources than the Chiefs to deal with these matters.

It has been said that Chiefs ought to have done more to educate their people about the reality that most exploration would not result in a mine, and that few would be qualified for long term mining jobs because of their low level of education and relevant skills. An NGO representative in 2013 noted that Chiefs needed to play a role in 'cooling down' their members who may be '... overly excited about sugared investments coming into their areas.' A Solwezi community advocate pointed out that it was only around 2014 that the Kansanshi area people began to understand this reality, some twelve years after the commencement of the upgrade.

A provincial official complained about another problem - that some 'Chiefs were coming up with their own plans, giving away land in an ad hoc manner, and yet they are not mandated to provide services for these areas.' An example of this occurred at Kisasa on what was customary land, where permission to settle was granted to many without any arrangements being made with the authorities for basic services to be provided to cater for the increased population.

The advent of the mining boom also meant that Chieftdom boundaries suddenly became a very sensitive issue, causing much acrimony between those involved, with some cases ending up in court, as reported in Hansard. Few people appeared to have seen the very detailed official colonial map of 1958 which was meant to be the basis for the borders but even with that evidence there were questions about its accuracy. There were also legal disputes about some encroachments.

There was an obvious need for increased surveying resources to help resolve the issues, as discussed in the National Assembly in 2014 but costs were a problem and also the shortage of surveyors:

On being asked by Solwezi West MP what was hindering the resolution of Chiefdom boundaries Deputy CTA responded that they were still consulting with the Surveyor General's office and that progress was delayed because of the high costs associated with such an exercise. Chembe MP pointed out that out of 15 Chiefdoms 10 were under boundary disputes. (GRZ/National Assembly Hansard, 2014).

Resolution of such issues would have helped to clarify the situation for the whole province and (hopefully) prevent future disputes from occurring (and for other provinces). But perhaps too, there were also questions about the relevance of supposedly traditional boundaries in a modern age. There have also been disputes about Chieftainship successions, as happened about the Kapijimpanga authority. Most appear to have been motivated by the hope of accessing of mining benefits, rather than traditional interests. All such disputes take up much time and energy, as well as cost. They also divert attention from other important community matters and, worse still, create tensions within and between communities.

Being 'Favoured'

Another aspect of the influence of the mining boom has been that companies have made efforts to 'curry' favour with the Chiefs in their areas of interest, including by providing them with various, often personalised benefits. It is understandable that companies would wish to, indeed need to, establish good relationships with the relevant Chief (s). But perhaps the transparency and appropriateness of any personalized 'considerations' needs to be assessed and some parameters set by government on this subject.

The most obvious example of this type of company largesse has been the building or refurbishing of 'palaces' or, as more appropriately described as 'royal institutional houses'. These buildings are meant to be for the incumbent of the title, not personally owned. One Chief who was said to have been 'close to the company', even had his medical treatment in South Africa paid for, along with other personal favours (but this was in early days when the company hadn't worked out how to treat Chiefs. Cheelo in his 2008 study quoted a then Acting Chief as complaining that '... the mining company has done a lot for the Chief in his personal capacity by refurbishing his palace and subsidising his living expenses ...' but that 'The general populace has not benefitted from this mine.'

Another example occurred in May 2009 when a Chinese company, Sinomine Resource Exploration Co. Ltd., sponsored nine Mwinilunga chiefs on a trip to China, supposedly to observe '... how the company is performing in China and what it hopes to achieve once fully established in the Mwinilunga District.' However, this expensive exercise may not have paid off for many of their teams were reported to have pulled out of the province by 2014. Trips were also organized for other reasons, such as when Kansanshi sent six Chiefs to Zimbabwe to observe conservation farming techniques in 2014 (Fig. 54).

This practice of *currying favour* was not new. Pritchett (2007, p.133) reported that in Mwinilunga in the 1950s 'Chiefs were wined and dined in the Boma [ie by colonial officials] and given fancy new robes, promised raises and perhaps new vehicles as a means of persuading them to acquiesce about plans ...'. In this case, the purpose had been to win their support for proposed Protected Forest Areas.



Fig. 54: From left to right, Kansanshi's Guy Hammond and Gehane Ntamo of KML with Senior Chiefs Kalilele, Chizera, Sikufele and Chiefs Musaka, Chibwika and Ntambo and Kansanshi's John Mubambe at Solwezi airport prior to traditional leaders' departure for Zimbabwe on a study tour of Conservation Farming. 18 March 2014. Credit: Solwezi Today, <http://solwezitoday.com/?p=376>

Chiefs also receive, as is the custom, gifts of groceries or other items whenever they are visited, which can now amount to hundreds of kwacha's worth, even though many of these consultations are business meetings, rather than customary affairs. One government official pointed out there was also an issue in that the companies were not being transparent about what they were paying the Chiefs or doing for them. This he bluntly said, was at the heart of corruption and could be construed as illegal if any cash was paid into a personal account, rather than a community Trust Fund. But even he as a government official, felt powerless to do anything about such issues. Sub-Chiefs who were also being involved with mining staff were reported to have felt that they were missing out on such benefits.

It is apparent from these and other examples that the advent of the mining boom has significantly increased competition, jealousy and inequities between traditional authorities and between them and their people. This was especially so between those with big mines and those without.

It is interesting to note that this benefits issue is but another version of the argument used about mining resources needing to be shared with the whole country, not just with the source, in this case with the rest of the community.

Leadership Acting Inappropriately

Traditional authorities at their installation are instructed how to behave appropriately in their roles. Jaeger (2015, p. 58) provided an example from the installation of a Headman in Kasempa in 2006. The appointee was firmly advised to keep the people in the village and area well, and how to behave properly and give visitors hospitality. All levels of authority are guided by such a set of principles which aim to ensure respectful behaviour, mutual care and good manners, and above all, service to one's subjects. Short (1973, p. 98) also admiringly described how courtly such village practices were, as in a '... medieval kingdom ...', with lifestyles firmly proscribed by tradition. Such traditional beliefs and practices remain strong in North Western society but some risk being lost or otherwise affected by the advent of mining, as described in the following. Also, the fast-moving corporate lifestyle obviously faces a major challenge when faced with having to work with a society which has such a gentle and measured pace of life.

While anti-company feeling during the first decade was publicly aired behind the scenes there were widespread complaints of a different type, about the behaviour of some traditional leaders. Numerous examples were reported of Chiefs or their subordinates furthering their own interests and failing to protect those of their people and to work on their behalf:

A community member complained at the 2013 Zambian Alternative Mining Indaba (ZAMI) that a donated ambulance was grabbed by a Chief for personal use. She also felt that the investors should come directly to them rather than going through the Chief because that leader had failed to consult them about the plans. Reportedly the Chief had never told them that he had 'sold' [note the terminology] community land to a company. An informant from a different area noted that the bad Chiefs had 'messed up the mining companies' good intentions.'

Yet another spoke out bitterly during a community group discussion, saying that 'The people representing them were not for the people, but just looking after themselves'. But it may not be the Chief but one of his underlings who was behaving badly. In this case one of them had run off with a compensation pay-out he had been given by the company to distribute to the community. There were also instances when Chiefs and Sub-Chiefs failed to provide accurate information, including inflaming people's expectations with stories of unrealistically high amounts of compensation which was about to be available. This resulted in much disappointment and anger when they discovered the reality.

In another case, a Chief, for a *consideration*, permitted over one hundred small buildings to be quickly built just before the mine moratorium was established so that more of his people would qualify for compensation. In some cases, a Chief approved a request but a Sub-Chief later obstructed the development, demanding a further payment. Such a situation was reported to have occurred in one District in 2013 where a drilling team were given a very difficult time, despite already having the Chief's approval and the required government approval. The cases where use of Local Employment Registers had been interfered with by traditional authorities has already been described in the section on the major mines. This practice included cases of bribes being accepted to have non-local people's names inserted.

Some traditional authorities were also known to turn a blind eye to illegal mining activities in their area in return for a personal benefit. Such practices were possible because it was impossible for ZEMA or any other agency to adequately monitor the situation given their small staff numbers, lack of budget and the number of unregistered mining activities and the vastness of the province.

It was not just this researcher who found such reports. The Alstine et al study (2013) also recorded this apparently widespread dis-satisfaction with Chiefs: 'During this study the team encountered numerous complaints about traditional authorities/leaders' i.e. to what extent they represented local interests. The researchers noted that 'Some respondents were dissatisfied with the Chiefs and suggested they were more concerned with personal gain ... than with community benefits.' Therefore they [i.e. the respondents] recommended '... that the Chiefs' power should be reduced.' Such feelings were shared across all big mine areas.

These observations were also reported by other observers. One astute community member, recorded by Cheelo (2008, p. 168), said that the problems they were experiencing

did not emanate from the company but from '... their own people [local and national leaders] who are not straight in their dealings'.

This attitude was somewhat surprising, given the strong anti-company feeling existing at the time.

A similar view was expressed at the 2014 ZAMI by a Tanzanian priest, Father Jude, who worked regionally on mining issues. He pointed out that the enemy was not necessarily a mining company but may be 'from within' i.e. from amongst their own ranks. Related points came from the Bishop of Solwezi, Charles Kasonde, who noted in his opening speech at the same Indaba that 'When the investors are approached they tell you to go to the Chief or that they do not answer to the communities because they have paid a lot of money to the Chief'. This has created some anxieties between the Chief and his/her subjects.' He pointed out that 'Chiefs needed to be more open about their transactions with investors' (author's ZAMI notes).

An interesting consequence, in one mine area, was that such issues had actually drawn the community closer to the company because they recognized that it was trying to make positive contributions for their welfare which the Chief was obstructing.

In one particularly difficult case, national ministries became involved. One of the outcomes was, in recognition of the prevailing style of leadership, that a certain payment should NOT be paid to the Chief but directly to the community. Docility in the face of bad behaviour is enforced by fear of their leader, and each other, because of threats or actions of witchcraft and other forms of social control practiced within communities. Such mechanisms are powerful weapons in traditional societies.

There was also some evidence that such fears may be reinforced by subtle pressures from external parties who had interests in the status quo remaining as it was. One example of this occurred when investigations into the affairs of a Chief were blocked. In another, an expatriate working on an aid project was drawn into (informally) helping a Chief to negotiate with a mining company. When this became known locally, he was threatened by ruling party cadres who said that government was supporting this mining development and not to interfere or there would be serious repercussions for the individual concerned and the organization for which he worked.

As one community member plaintively asked at the 2014 Indaba: 'How does the law protect communities if a Chief is not speaking for them?' (let alone one actively working against their needs). But there did not seem to be an answer to that question.

It appeared that the possibility of being able to enrich themselves was perverting the nature of leadership in some cases. Given the cash-fuelled environment it was not all that surprising to hear that local leadership had not always acted appropriately and that some had succumbed to opportunism. It was also possible that so many people were expressing such negative feelings at least partly because they too had high expectations of the mining boom and, understandably, were jealous and angry that they were missing out on benefits.

It was obvious, as one informant said in 2014, that because of mining, there was much more tension and jealousy within communities than in the past because of the possibility of obtaining money. Such an atmosphere clearly reflected desperate situations, competition for scarce resources and raised but disappointed expectations amongst many.

By the same token, it is not all bad news by any means.

Some Chiefs, perhaps while looking after their own interest, also had been dedicated to learning how to cope with the mining boom and working out how their communities could best benefit from it. One in particular was noted to be proactive, attracting investors and providing opportunities for them, including the establishment of some agricultural and industrial developments which had the potential to help provide employment outside the mines. Significantly four Chiefs (Kaijimpanga, Mukumbi, Mumena and Ntambu) established Trust Funds to help direct any mining related benefits to addressing the needs of their people. However, it not known known what mechanisms were in place to demonstrate acquittals and transparency. If the poor use of Community Development Funds was any guide (Mondoloka, 2013) strict measures needed to be put into place.

But there were other examples: Chief Kapijimpanga developed a 'Chiefdom's Strategic Plan, 2015-2019' with the help of a donor, to guide development while Chief Mumena hired a business advisor. Some Chiefs too, were quite active in promoting health, education and income generation. They regularly toured their areas checking on the state of their communities and helped to address at least some of their needs and to offer guidance about their approaches to existing challenges. Others were less active, because of the lack of transport and other resources, and/or a lack of initiative and know-how.

Yet another issue reported by informants was that because Chiefs were on the government payroll, and their allowances had been increased, they were reluctant to speak out about government weaknesses in addressing the province's needs. It was also noted with concern by one observer that there had been some interference by government in the selection of Chiefs. In other words, the positions had been politicised and some Chiefs were becoming compromised.

Chiefs Without Mines - Inequity

For those Chiefs without large or medium sized mines on their land it was a different story. There were reports that their lifestyles were very different from that of the others, being impoverished and disadvantaged. They were said to be bitter and jealous at the inequities which mining has created. A participant from the Sailunga Chiefdom, which has no mine but which fell within a prospecting licence area, commented at the September 2010 Kalumbila EIA community consultation meeting: 'It seems as if nobody cares about us as there are no minerals in our area.' At the same meeting it was reported that there was an undercurrent of frustration from those who came from near-by mine-less Chiefdoms (Kalumbila EISs, 2012). It was noted that this issue might lead to social division between leaders. The company tried to calm these fears by noting that there might be benefits from secondary economic activities, although they also reiterated that the Musele people had to be given priority for jobs, for which they were qualified.

Given the extent of road building and other types of construction work going on some Chiefs with the right sort of sand and aggregate on their land were able to access such business opportunities. Other activities included logging and small-scale mining. Such activities may have been quite lucrative and because relatively small scale, may not have followed official mining or forestry standards – let alone be declared for taxes. Apart from a brief mention in Caritas' 2008/9 draft report no studies appear to have been undertaken about these types of activities. In 2014 Caritas reported that such cases 'slip under the radar' and

that they were aware of cases where local people were working in appalling and dangerous conditions.



Fig. 55: Gently undulating, lightly and sparsely settled spaces as far as the eye can see but used in many ways. Near Mutanda, Solwezi District, 2012.

The Role of Chiefs and the Legal Status Regarding Land

Much of the Chiefs' power comes through their responsibilities regarding the use of land. Without land a Chief has no power. In Zambia land is either State, Private Title or Customary owned and it is the latter for which Chiefs act as custodian for the communities. They are entitled to allocate or alienate up to 250 ha, primarily in order to ensure that all subjects have access to enough land for farming and foraging upon which their livelihoods depend. Their survival is dependent on being able access these resources.

But this apparent authority over local land was not quite what it seemed for ultimately all land is vested in the President. This means that a Chief's consent is actually a formality and can be over-ruled by the higher authority. Consequently, a Chiefly approval is more show than substance, which is frustrating for them, and disempowering. For example, a community ought to be able to decide to say 'no' to a mining development proposal. This should be possible if one was according power and rights to the people. But the Office of the President could, and would, be likely to over-rule such a decision on the grounds that it would deny the state the opportunity to garner revenue for the nation's coffers. No refusal has ever occurred in the North West. As one Chief stated, he would never dare to deny such an application because the people would think he was preventing them from participating in economic development.

The GRZ Land Act also provides for the State having the authority to take land when it is '... for the general benefit of the people of Zambia', such as for roads and powerlines. In addition, the Mines and Minerals Act (1995) provided for the Ministry through its licencing body, to allow below-surface rights without Chiefly approval if that particular piece of land had no inhabitants - which may easily be possible in the sparsely settled North West. As one can imagine, this provision could have resulted in activities which were a surprise for a Chief, with strangers appearing waving legitimate licences in his/her face. However, later revisions to the Act were to alter this arrangement. Despite these restrictions, the power of the Chiefs

undoubtedly increased during the mining boom, largely related to their role approving applications, including signing off on surface rights.

In the pre-mining boom days land allocations were usually issue-free because of the large size of the North West and the low population densities, but now that situation was changing fast, at least in certain areas.

It is ironic that for Chiefs to participate in the mining boom they have to give away their most precious asset – the land, which as one community member said during an EIA community consultation ‘... is my life saver.’ Pritchett (2001) also reported about the Lunda in Mwinilunga area that ‘Villagers and townsfolk alike were united in their view that access to land was ... their only trusted source of security in old age’. Such an underlying fear about the loss of this asset may at least partly account for the high levels of ambivalence and anxiety amongst local people in mining areas today. This is so even though they can readily obtain land elsewhere, although it may not be close to facilities. Apart from the Ikelenge area no Chieftdom was densely populated but that situation is changing now the immediate mining areas.

However, the possibility of mining jobs being able to provide an alternative means of survival has been seen to be highly attractive, apparently overcoming any possible fear of loss of land. This was largely because jobs enabled participation in a cash-driven, modern society, access to which many North Westerners had previously been largely denied. Hence, perhaps, the fixation about obtaining mine jobs, and the anger and resentment which arose in all mining communities when those jobs did not always result or failed to continue once the construction phase was over.

Relationship to Land, its Resources, and its Valuing

Deep spiritual attachment to land is a significant factor in making decisions about mining in countries where indigenous people have resided from time immemorial. But this does not seem to be the case in the North West where the population consists of relatively recent arrivals. With them the land is equally important but holds more earthly values, with the relationship being more to do with practical matters and social relationships. In regard to the latter, pioneer environmentalist William Allan (1965) described it like this:

Since land is the only security and its use the only means of livelihood for most, the holders of the land are expected to share with those of their kin who are in need, and refusal to do so would generally be regarded as conduct immoral in the highest extreme. To maintain himself as a farmer, with an acreage much in excess of subsistence needs, a man must cut himself off from his kind and repudiate the values and ethical standards of his people. Usually the strands of the web are too strong to be broken and the individualist finds himself unable to resist the social pressures that support and maintain traditional values. For this reason neither individual tenure of land nor traditional rights over fallow is any certain safeguard against subdivision and fragmentation.

From the air the North West landscape appears largely uninhabited and unused. Newcomers are unlikely to be aware that the sparsely populated, un-exciting looking flora is actually what Malaisse (2010) and others, including UN agencies and some of the mine EISs, describe as being a ‘biologically rich environment’ (Figs. 56-61). Much of its resources can be used in many subtle ways and the largely gently undulating (Fig. 55) or flat nature of the land makes it far easier to farm than in many other countries.

Different types of produce are available on a seasonal basis so the land is actually a complex myriad of opportunities which vary according to the time of year and the location.

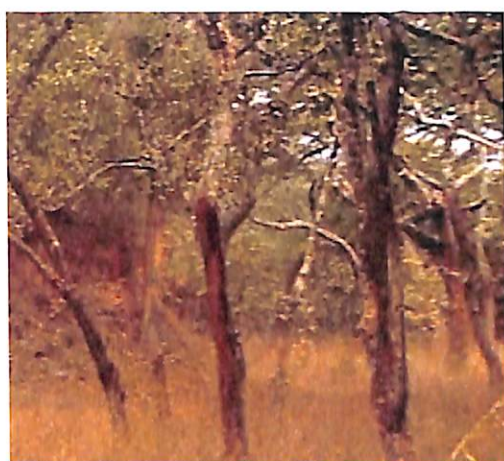


Fig. 56: The Mopane woodland, Kasempa area and Fig. 57 a termite mound, Kabompo Gorge area, rich biological areas and not as ordinary as they appear to an uninformed outsider. 2012.

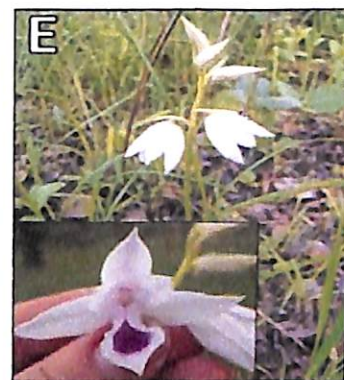


Fig. 58, 59, 60: Examples of the rich local flora, Kalumbila area. Credit: Sentinel EIS, CES, Nov. 2012, cover and p. 98 and p.101.



Fig. 61: Local landscape with Chitemene style farming preparation which fails to reveal to the uneducated eye the complex farming system which is in place, Mumena area, 2012.



Fig. 62: Chitemene field after burning, Kasempa, 2013, Credit: D. Jaeger.



Fig. 63: A dambo, a damp area, with good soil useful for farming vegetables, 2013.

There are areas with different characteristics, such as dambos (Fig. 63) which are ‘seasonally waterlogged, predominantly grass covered, shallow, linear depressions ...’ (Acres et al, 1985). They provide a different and more naturally fertile environment and are particularly suited to growing vegetables and early maize (Fig. 64). Grassy areas provide thatch, and different types of trees provide firewood, wood for housing construction or charcoal for cooking. Other plants and trees provide flowers for bees and different parts of rivers are home to a variety of fish and crustacea). ‘Kitchen gardens’ (close to the house) often include fruit trees and cassava while other areas are suitable for growing staples like sorghum, millet and cassava, and in some places, pineapples (Jaeger, 1981). Maize growing has been introduced and supported by government but in most places it requires expensive fertilizer to do well.

The forests provides a great variety of fruits and nuts, beverages, medicinal and edible plants and roots including mushrooms (sometime of gigantic size) and orchid roots (*Chikanda*) and witchcraft potions, as well as caterpillars and insects, snails, molluscs and crabs. The many thousands of termite mounds (Fig. 57) provide specific micro-environments for both plants and animals found nowhere else. There are also small animals and birds for hunting but the many large animals were mostly shot out by the 1980s. The forests are also a source of honey and wax, salt, gourds for containers, wood and metal for musical instruments, ornaments, house-hold items, farming tools, traditional costumes, artefacts and weapons. Also available are dyes for cloth, bark for clothing, mats, blankets and beehives, cane for fish traps, baskets and animal cages, grasses for twine and thatching, wood for fences, house poles, bridges, charcoal and poisons for fishing (Malaisse, 2010, and other sources including the EIAs). As such, the countryside is a *Bush Shoprite*, with a wealth of resources for daily life – and any disturbances from developments such as urbanization, large scale mono-cropping and mining needs to be valued and recognized.



Fig. 64: At the end of the rainy season the women arrive with loads of various nutritious vegetables and fruits from the gardens in the low-lying areas., Kasempa area. Credit: D. Jaeger, (2015).



Fig. 65a and b: (L) Mutanda Falls, Mumena area (R) West Lunga river at Mwinilunga.

Another feature of the province are the many beautiful rivers, both large and small, flowing even during the dry season and rich in fish of different types (Figs. 65a and b).

Local knowledge of such resources was extensive and included the time of year they were available and whether they were to be found along waterway, in dambos, in the different types of forests and savannahs or in swamps or rocky areas. This knowledge also includes knowing whether they are poisonous and the method of removing toxicity, as with cassava. From a nutritional point of view, being able to forage freely was important for it provided an opportunity to obtain essential supplements for the daily diet, whether eaten on the spot or brought home and eaten there.

A large variety of different types of plants and fauna such as insects were important for adequate nutrition, because their individual amounts may be small and availability variable. Knowledge of, and access to, such a 'larder' during the 'hunger season' (December/January) or times of drought served as a lifesaver, when even items not normally consumed are used.

However, despite these resources the local soils are variable in their capacity to produce foodstuffs. Those to the west are acidic Kalahari sands while to the east are pockets of red or orange loam or clay-loam. Some have poor drainage because of the underlying geology. The richest soils are in those in the low-lying dambo areas, being made up of black peaty sandy or clay soils. The extensive wet season (1400 mm per annum, mostly between November and March) causes heavy leaching of topsoils and consequently farming

production was never extensive and farming methods had to compensate for these conditions. Traditionally farmers tended to focus either on growing (introduced) cassava (Lunda and Luvale areas to the west, or (traditional) sorghum (Kaonde territory (Jaeger, 1981 and Chabatama, 2009) to the east and south.

The locally practiced *chitemene* (see Footnote 15) or the *bujimi* system, was, as Crehan (1997) said, and others have indicated, '... an efficient adaption to local ecological conditions.' *Chitemene* farmers were very aware of soil fertility characteristics and were well able to recognize when to change fields and that not all land was suitable for farming. Oyama and Kondo's (2007) study clarifies this was achieved.

They provided an enlightening description of what was a sophisticated traditional system by which farmers were generally able to maintain sustainable food production through multi-fold soil fertility preservation and mixed cropping. They reported that four years of continuous cultivation enabled a maximum of twelve types of fields, resulting in a mosaic effect, and that the techniques created different types of crop environments and provided accumulated soil nutrients. They also described how less nutritionally demanding supplementary crops were grown after the more demanding ones when it was detected that fertility was declining. The mixed cropping technique meant that various plant species and crop varieties were planted, that crop yields were stabilized, that labour hours were dispersed through the wet and dry seasons, rainfall variability was coped with and pests and diseases were controlled.

The burning of the bush at a particular time of the year which ensured a 'cooler' burn was an important component of the system, with the ashes adding nutrition to the soils, destroying pests, discouraging snakes and helping with the clearance of new fields. Small, often mobile populations enabled this system to work well enough to provide a minimal level of sustenance – but not affluence and abundance for sale, even if they could reach a market.

Knowledge of natural resources and the farming system was passed down through the family and through local 'experts'. One of the often un-recognized disadvantages of sending children to school was that they were likely to miss out on both the extra nutrients gained by browsing in the bush and also from learning gained from tagging along with their parents and observing the flora and fauna. Urbanization, with static settlements, also contributes to the loss of this traditional knowledge and farming practices.

The bush is also a place where social roles are played out, because the harvesting of the various types of products is socially proscribed as to whether men or women or children are involved. For example, climbing trees to set and raid beehives was traditionally men's work whereas it was the task for women and girls to collect vegetables and fruits (Fig. 64).

Another factor in the North Western land story is that of climate for historically there has always been a risk of drought and floods, and also infestations of locusts, which threaten survival. While being plentiful in its natural bounty it was, and is, a fragile, subsistence environment in which survival was enabled by the availability of a plentiful supply of land and a small population. Local society was built around the flexibility to move freely around a land without borders, not just from villages to fields but between families and also to new village areas which were frequently established.

The extent of that movement over the decades and even centuries, is well documented, including by Jaeger (1981) and by Hansen (1979) who described it as follows ‘

Throughout the life cycle they are a mobile people - visiting relatives, shifting their fields and village sites; travelling on long fishing trips or trading missions and migrating to work in the European mines and farms. This constant mobility and resettlement has been institutionalized socially and politically.

While he was referring particularly to the Luvale the description also applies to the Kaonde and Lunda. The practice was a frustration to the colonial authorities who were trying to exert order into local societies so that they were more easily governed. In more recent decades, at least one NGO tried to restrict their assistance to those who settled in one place, as World Vision described in its performance report of 2011.

This detail has been provided as a reminder that there had been a well-functioning eco-system and the need to give due respect to what had existed and to the hard-working inhabitants of the land who understood their environment so well. This was so even if it was a fragile existence which did not enable them to move beyond a subsistence level lifestyle. It also helps remind what the Chiefs, on behalf of their people, and with the encouragement of the national government, are giving up for mining and other modern land use activities.

There is no doubt that both mining activities and the increased population's heavy demand for charcoal and poles and their pollution of water resources are, in particular, contributing to the loss of valuable natural resources and posing serious threats to local biodiversity. The latter includes the trees whose flowers provide honey for which the North West is rightly proud. It is notable that these factors constitute losses which are not taken into account in any compensation formula.

The loss of local knowledge about the art of surviving in the Miombo²⁷ woodlands will also be an inevitable part of the modernizing process which is occurring. This would especially be so as the younger generation dismiss traditional lifestyles, in preference to the values of modern cash-based society. An increasingly settled population will also accelerate the extent and rate of human impact on this rich but fragile environment.

This was especially so in the major mining areas and especially in Solwezi district where most of the action was taking place. An increase in population, larger scale farming and of course mining itself, will also risk affecting the purity of the many large and small rivers which flow through the countryside. By the same token, such changes are of course, an inevitable part of modernization and urbanization. However, at the moment the changes are still quite localized and affect only a small portion of the province. The question is whether this change will continue to accelerate or whether the fickleness of mining booms will mean that the impact on land and the people will continue to be narrowly focussed.

²⁷ Miombo woodlands are the most extensive warm dry forest type in southern Africa consisting largely of the *Brachystegia* genus. Characteristically the trees shed their leaves for a short period in the dry season to reduce water loss and produce a flush of new leaves just before the onset of the rainy season with rich gold and red colours masking the underlying chlorophyll, reminiscent of temperate autumn colours.

Other Cultural Changes



Fig. 66: Ceremonies are very popular events, Kasempa ceremony 2013. Credit: D. Jaeger.

Traditional Ceremonies

The North West is re-known for its traditional ceremonies. Twenty-one officially recognized ceremonies are held between May and October each year. A few un-recognized events are also held. This is the largest number for any province in the country. Scenes from a few examples are shown in Figures 66-69. Interestingly, they weren't always so numerous. Kaswende (2013) reported that there were only four gazetted at Independence and that there were now seventy-seven nation-wide. The North Western ceremonies include one gathering which involves four Kaonde Chiefs who meet at the salt pans north of Kasempa (the *Nsakwa ya ba Kaonde*), as has been done for over a hundred years. Another gathering, the *Lukumbi Iya Mize* of the Luvale people at Zambezi, is even registered as an UNESCO Intangible Heritage Asset.

Traditional ceremonies are '... an embodiment of the country's intangible cultural heritage as the then President was quoted as having said (Zambian Post, 2014a). They are primarily celebrations of significant events such as a new harvest, the hard work of the hunters coming home with big game, or of initiations or Chief's funerals or successions. Whatever the reason, they are an important means of communicating local history and taking

pride in that particular heritage. They are also an opportunity for the Induna's and common people to pay homage to their Chief's good leadership and also for a Chief to demonstrate appreciation of his or her people.

The ceremonies provide an opportunity for scattered communities to come together in large numbers. Participants include relatives who live in the big cities and politicians and senior government officials. As such they provide an important bonding opportunity and also an exciting form of entertainment, especially for those who rarely experience such opportunities. Ceremonies also provide a valuable occasion to proudly display or demonstrate traditional music, songs, dances, crafts and costumes. These exhibitions are a form of education for young people who, because of modern influences, may otherwise be losing touch with their heritage.



Fig. 67: The parade of the Makishi starting out from the cemetery for the Likumbi Lya Mize, causing much excitement amongst the onlookers, Zambezi, 2014.

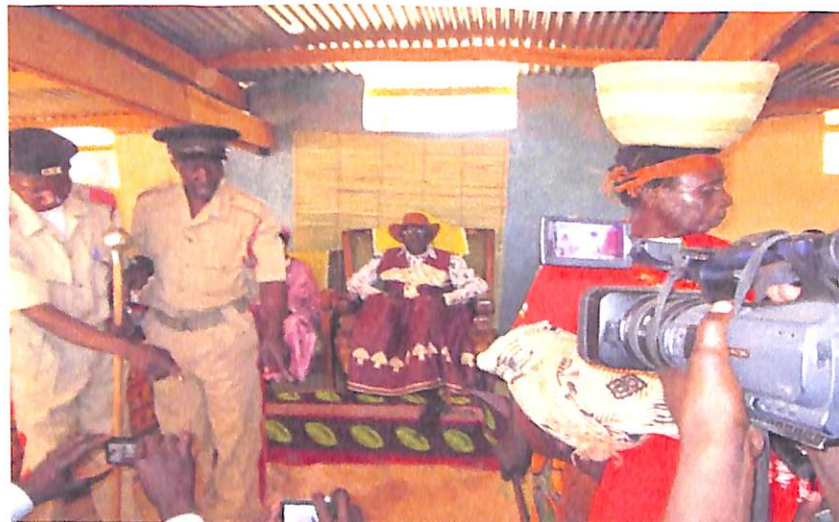


Fig.68: Senior Chief Kasempa presiding over the festivities of Juba Nsoma, 2013. Credit: D. Jaeger



Fig. 69: Musele ceremony, with extra excitement evident because of the presence of Paramount Chief Mwata Kazembe XIX visiting from the Congo, 2016. Credit: N. Namushi.

Consequently, these ceremonies are a very important part of North Western cultural life, but which are showing increasing signs of being modernized, partly as a result of the mining boom, as Figures 70-75 indicate.

Support for Ceremonies

The major companies have increasingly become involved in providing support to the events of Chiefs in their immediate areas, and sometimes beyond. They have contributed from their CSR budgets for upgrading arenas, seating and stages, and as well as to various type of running costs, including providing gifts, food and transport. Mobile phone companies, small mining companies and mine suppliers are also increasingly contributing to events.

Commercial companies, and especially the mines, have even taken it upon themselves to 'adopt' ceremonies. *Solwezi Today* (2011) referred to this practice, in regard to Lumwana, as the company having '... taken responsibility for traditional ceremonies'. Hopefully that may have been a journalist's misinterpretation for ceremonies are surely not their responsibility. There was some overlap too, with more than one company contributing to the same ceremony at times.

As is the local custom the companies, and others, contribute gifts as a form of homage but in a way that is a significant break from tradition which previously involved the presentation of locally grown and handcrafted items. Gifts now include modern items such as washing machines, household furnishings and building materials (Fig. 72) and large quantities of shop foods.

One can't but think that there is a strong element of trying to buy favours and one-upmanship going on, way beyond a culturally appropriate token of according respect to a Chief. It would be insightful to know who benefits from the increasing amounts of largesse being provided i.e. whether it is distributed equitably amongst community members or kept with-in an elite.

It is possible too, to question whether the commercial gifts are simply a sign of paying due respect to the Chief and his people. Pritchett (2007) noted that 'Material transactions are the most public and powerful symbol of personal relations among the Lunda-Ndembu', and similarly it is with the Kaonde. As such, gift giving should represent a significant action

which one would not expect to be used for nefarious purposes. So could these commercial presentations, in fact, be interpreted as a form of persuasion, a *buttering-up* or even of bribery? Or could they be more charitably described as simply good public relations? If the latter, then they should not be funded from CSR budgets as they primarily meet the needs of the company not the community.

One obvious sign of commercial support is where participants playing traditional roles in the ceremonies are sometimes seen wearing advertising material, such as company promoting T-shirts, which is somewhat out of synchrony with the heritage atmosphere (Fig. 74).

Ceremonies have also shown signs of being politicised – with party cadres sometimes wearing campaign gear (Fig. 70 and 71) and competing amongst each other about the amount and type of gifts being presented to the Chief, as seen at two different ceremonies in 2014 (Figs. 69 and 70). The clothing was worn despite one ceremony organizer calling for no political paraphernalia to be seen (this was during a pre-bi-election period).



Figs. 70 and 71: (L) and (C). Political paraphrenalia at two ceremonies in the 2014 during a bi-election period. Fig. 72: (R) Mining gear (orange top) appears at an annual ceremony, 2014.



Fig. 73: (L) These gifts were from a political party, 2014. Fig. 74: (R) Commercialization of traditional aspects of a ceremony, clothing, 2014.



Fig.75: (L) A mining company supported stage facility, 2014. Fig. 76: Another made of traditional, local materials, 2014. Both serving the purpose of housing the traditional leader.

Nevertheless, party cadres make the most of such large gatherings to try and win voters to their cause. However, this development is not specifically related to the advent of big mining, and not restricted to political matters. Health related projects have more appropriately capitalized on the presence of large numbers by providing health education and related services. Such activities originated with UNFPA in pre-mining days and have been expanded on by the mining companies.

A few of the ceremonies have upscaled to become major events and this implies considerable organizational capacity and funds for invitations, advertising, parking, toilets, food, water, micro-phones, security, seating, transport, accommodation etc. It is highly unlikely that local communities could afford to fund and organize such aspects all on their own, beyond clearing of the site and erecting shelters with locally available materials and the provision of traditional inputs. Very large, public events such as the Lukumbi Lya Mize at Zambezi especially could not function without outside help, including from the Lusaka based committees that support such events, and now, increasingly, from mining and other companies.

Another observation was that it looks like some of the ceremonies are now becoming 'big- business'. Small stalls flourish, making the most of the increase in customers needing drinks and food. Artefacts and clothing are also available, and of course, the now inexorable 'talk time'. The availability of accommodation has increasingly become an issue, especially in isolated places like Zambezi. If not booked well ahead of times, a bed cannot be found in the whole town around the time of the ceremony, and room prices are inflated for the duration. The great increase in the number of second-hand cars and the improved road system over the past few years has enabled easier access to the more distant places.

Evolution in Costumes



Fig. 77: The locally constructed shelter for the crowds at Mumena and the Mumena printed T-shirt and a gown, style 2014

Another aspect of the changes concerns costumes which are becoming increasingly modernised, including by T-shirts (Fig. 76 and 77) which have largely replaced local bark cloth, except as worn by Chiefs Mumena, and Mulonga's attendants, as well as by Chief Kanongesha (Figures 78, 79, 80). Senior Chief Kasempa has also publicly encouraged use of this readily available local traditional material.²⁸

In regard to the long and colourful cloth gowns (Figs. 77, 78 and 81), cultural expert Mulenga Kapepwe (communications, 2014) suggests that the use of the dress by the Kaonde and the Lunda is an adaptation of the *Mukonso*. This was a style of dress described in detail by the early Portuguese explorers who came through the Congo in the late 1600s-1700s, from where the North Western groups emigrated. Originally the attire was made from raffia and was heavily embroidered and stitched with shiny stones and according to the Portuguese, so rich in texture they thought at first it was velvet. Some of the currently available raffia based Kuba cloth still uses similar techniques. Today the gowns are far less ornate, being made of brightly coloured commercial material and plainer in style but nevertheless appropriately representing local totems and other embellishments (Figures 78-81). Costumes have become a creative mix of ancient and modern, illustrating a fascinating evolution in styles (and no apparent sign of the influence of mining).



²⁸ Bark cloth known as Nkolwa in Kaonde, can be treated and made up into shirts and hats and other items. It is known as Jibaya, as proudly worn by Senior Chief Kasempa, *Zambian Post* article, 5th September 2010. http://www.postzambia.com/post-read_article.php?articleId=13401

Fig. 78: (L) Chief Mumena wearing a modern creation with traditional symbols flanked by his traditionally attired attendants, 2014. Fig. 79: (C) One of Chief Mulenga's officials, also wearing a bark hat and fur jacket, 2014. Fig. 80: (CR) Chief Kanongesha, in bark and skins over more modern dress, 2013. Credit: D. Jaeger. Fig. 81. (R). Headman Kiboko, of the Lubofu region with clan mushroom symbol design at hem, Kasempa, 2013. Credit: D. Jaeger.

Government Involvement

Another issue is that it is *de rigour* for government to be represented (and contribute) at these events and because there are so many ceremonies they have become a considerable, and some say, unjustifiable, burden during the mid-year 'season'. Such participation involves both much time and cost. As the large number of NWP ceremonies are held within a few months of each other they have become something of a burden for both national and especially provincial government officials, and a drain on scarce government resources. One official called it 'a serious cost to government' including as it does, travel funds and allowances, in addition to the gifts and budgetary allocations – and much administrative time.

Complaints about what is perceived to be too low a level of government representation at some ceremonies are reported to be common, the complainants seemingly ignoring the other multiple demands made on officials' time. However, it is interesting to see that local government is aware of the staff time and resources issue, with a recommendation being made in the 2014 Solwezi SMC Strategic Plan that 'Only ceremonies within the district must be attended'.

The support provided by companies to only a few ceremonies is yet another element of the inequality which has arisen between Chiefs in the North West, with the major mine areas attracting most of the attention (and resources) and those further away being relatively neglected (except for the Likumbi Lya Mize). But the chieftdom in the heart of the mining boom in the Kansanshi area did not hold a ceremony for more than nine years after the former Chief passed away in 2008 because his succession was challenged in the courts. Consequently, the community in the immediate Kansanshi area has missed out in this regard during the first decade.

Such events do require financial support (but presumably the organizers cannot charge admittance) and some modernization of the ceremonies would have undoubtedly occurred without mining inputs. But the presence of companies has obviously exaggerated certain aspects and introduced a strong element of reliance on outside support, especially for those in the major mining areas. The appropriateness of some of the changes may be questionable and suggest the need for a protocol or code of conduct. This could include guiding contributors about the type and level of support to provide so that tradition is protected - even if it means that events are less well funded.

But how one promotes equality between the many ceremonies is not so clear, unless provincial government arranges for a financial contribution of equal amounts. There is also a question as to where a company's social boundaries lie - and what percentage of a CSR budget should be allocated to ceremonies. If a rationalization is thought appropriate it might be helpful to reduce the number of individual ceremonies being held each year, or perhaps by holding an annual regional event like the Goroka Show in Papua New Guinea, at which all local groups come together to celebrate. Alternatively, the three major NW groups gathering together annually would help simplify matters and they could rotate hosting of the event.

Evolution of Tradition

The preface in Kapepwe and Guhrs' (2007) book on Zambian ceremonies reminds that tradition always evolves, it is never static: 'If it is true that the intrusions of modernity are eroding culture then it is equally true that people are embracing progress, change and growth' This is inevitable and historically what has always happened. After-all, who questions or remembers where so-called traditional foods like cassava or sweet potato come from²⁹ or that the traditional method of *widow cleansing* has been replaced with a non-sexual element. And no one today would argue with the dropping of the practices of ritual murders and slavery. While some aspects will inevitably be modernized (like the presence of loud-speakers and modernized facilities) the heart of the matter is probably whether the core values and historical stories are being maintained, for they are the roots of a society.

This informative and colourful book wisely reminds us of the saying '*that we cannot know where we are going if we do not know where we have come from*' (paraphrased from David McCullough, 'Brave Companions; in History', 1991). The ceremonies surely play a very important role in achieving this end.

An unanticipated consequence of the strengthening of the position of (some) Chiefs because of the support of the mining companies has been used to political advantage by ruling parties, pre-empting a possible change in voting patterns in the North West.

But such a development goes against recent moves in Zambia to downgrade the position of Chiefs and possibly even remove them from any formal governance role.

The addressing of the various issues raised above rest with the Provincial Council of Chiefs, in conjunction with the Ministry of Chiefs and Traditional Affairs, under whose mantle the responsibility for the maintenance of tradition rests.

Languages

Changes in society are often reflected in language usage and it is possible to see this happening in the North West during the mining boom.

Marten and Kula (2008) provide some relevant background:

Questions of language and identity have played an important role throughout modern Zambian history, particularly after independence, when the question of the national identity of the new state took centre stage. Language in Zambia is important for national, political and ethnic identities, for communication, education and popular culture.

They also noted that:

As a legacy of this [colonial] period, English plays an important role in the current language situation, a role which was affirmed after independence in 1964, when English became the official language. After the change from a one-party system to multiparty democracy in 1991, emphasis has shifted towards the promotion of Zambia's seven national languages, Bemba, Nyanja, Tonga, Lozi, Lunda, Luvale and Kaonde, and contemporary Zambia is an explicit example of a multilingual country.

²⁹ The America's, brought in by the Portuguese in the C16th.

The North West Province is home to three of these national languages. In the only located recent research undertaken on the province's languages, *Zambian Linguist* Kelvin Mambwe (2012) said in his draft paper that even within the first six years of the mining boom:

There has been a notable increase in the use of the Bemba language because many of the newcomers to the province come from the Copperbelt. The use of that language had already become common in the country as a whole, rather than just being a tribal one per se. But in the North West the use of Bemba has been perceived as having negative political under-tones, be it in the school play-grounds, the market or in the work place. Kaonde with its far less dominant connotations, arising as it does from a less powerful group, does not appear to have been adopted by newcomers.

This development was not unusual. Mususa (2010) provides a historical perspective on language use in other mine areas, remarking about the Bemba language becoming '... the main lingua franca spoken on the Copperbelt by most non-Bemba residents', and that it was gradually replaced by the use of Fanagola.³⁰ Pritchett (2001) also describes hearing of Lunda speaking people working on the Copperbelt (in the early days) who pretended to be Bemba, and Luba when over the border in Katanga. So such adaption in the North West is nothing unique, being merely a case of trying to fit into one's new environment. However, in the case of the use of Bemba in the North West there were strong political undertones given that the Bemba have long been associated with Zambia's ruling parties and that the North Westerners having long voted contrarily, as well as being looked down on.

A clear indicator of the level of local sensitivities about the perceived Bemba language 'invasion' was the outcry which occurred in 2013 when Barclay's bank tactlessly erected a sign in Solwezi town in the Bemba language. It was quickly taken down and replaced with an English version - which is not politically associated, being regarded as a tribally-neutral language.

But, as Mambwe (2012) stated '... local people might want to be associated with the new language for economic and social reasons ...' and that '... Kaonde speakers may find it difficult to speak their language in the face of migrants as they perceive them to be superior...'. Cultural expert and artist William Bwalya Miko also pointed out that 'Bemba was like English in the world, it no longer belonged to tribal speakers, it has become like internet use'. In fact, most of those who are speaking it in Solwezi are not real Bemba's but 'man-made Bemba's' (personal communications, 2012). Mambwe agreed with him, noting that with time, it appears that most tribal languages will no longer belong to particular groups due to urbanization and the influence of other languages. He added that the process seemed to be gradual in places still lagging behind in urbanization but faster in others, such as Solwezi town. Kaswende (2013) also discusses this urban phenomenon in his article on 'Town Nyanja' in the *Bulletin&Record*, describing how in Lusaka, Chewa had evolved into an urban version of the language, absorbing words from other Zambian languages, including English because of the interaction of people from various parts of the country.

In fact, the Bemba language was not a newcomer to the North West. Data from the census shows that Bemba speakers have been around for many years, albeit in small but increasing numbers. The 2000 Census reported 2.1% were primarily Bemba speakers in the province and that figure more than doubled to 4.9% in the 2010 Census, with the majority recorded being from Solwezi district, as could be expected. The percentage speaking Bemba

³⁰ Fanagalo, or kitchen-kaffir, a blend of Zulu, English and Afrikaans that had originated in nineteenth century South Africa... (Pritchett, 2001).

as a primary form of communication in urban areas (mainly Solwezi town) was 10.6% in 2000 and 16.3% in 2010. The data for Bemba as the second language of communication in 2000 was even higher, at 23.3% in urban areas and 15.9% in rural areas, making 17.5% total for the province, but there was no comparable data for 2010.

The Lumwana Social Sustainability Performance Monitoring Plan (5.4.2, Lumwana 2007) included an item on languages spoken in their area. It reported a mixture about two years after mine commencement i.e. 36% Kaonde, 32% Lunda, 7% Luanda, 6% Rwandazi, 5% Luvale, 5% Bemba, 4% Luchazi and 4% Kitemba. This data appears to include many outsiders being present in the area, probably including refugees from nearby Meheba.

It also represented a big change from their January 2002 community meeting report which stated (in general terms) that most people spoke Kaonde and that Lunda was also used, to a lesser extent. (Lumwana EIA, 2005).

A historical point is that some (many?) older North Western men (and possibly their wives), now retired to their towns or villages, would have worked on the Copperbelt mines and were likely to have learnt Bemba, and possibly English, there. Consequently, a residual knowledge might well exist in some communities, although it is not likely to be the major language of communication. Certainly, rural communities were multi-lingual, with far fewer Bemba speakers before the mining boom.

Data from the Summer Institute of Linguistics (2002) from the Kankozhi (Musele area, predominantly Lunda) provides some information.

It showed that 73% were Lunda speaking, 21% Kaonde, 2% Lunda/Kaonde, 2% Luvale and 2% 'Other' (undefined). This was about eight years before the coming of the Kalumbila mine and brings up a different but related point made by Van Binsbergen in his 1987 paper that 'Even in rural areas, chief's territories are seldom ethnically homogenous...'. Consequently, one needs to be careful about making assumptions about such occurrences being new. The mine EISs also reported that the percentage speaking Bemba in the early days of the mining boom was minimal, with Lunda prevalent in the Kalumbila area and Kaonde being so around Lumwana and Kansanshi, followed by Luvale and a tiny percentage of other languages.

Another angle on the subject is mentioned by Cheelo (2008) who quoted the Deputy Head Teacher at the Solwezi urban Mushitala School which has many pupils from outside the province. He said that 'Children learn Kikaonde in class but speak Bemba in the community'. This was reported as having a negative effect on their learning process and their rate of assimilating concepts was reduced. This policy which aims to promote local language use has had an unintended consequence.

No researcher seems to have reported on an increase in the use of English which could also be seen to be a 'lingua franca' and which would presumably be the main language used by senior levels of mine management and is widely used in commerce, government and the media. The 2000 Census gives a figure of 10.7% for English as a second language of communication for the North West being 16.9% in urban areas and 9% in rural areas.

Undoubtedly language use is changing in the North West, especially in urban areas 'with the mining industry acting as the catalyst', as Mambwe (2012) said in correspondence to this author. It is likely that there will be increasing use of both English as more local

children stay on in school longer in the hope of being eligible for mine jobs, and an increase in Bemba in some workplaces. It also seems unlikely that these developments will cause the death of local languages, as some have feared. After all, the majority of the population is still rural and local languages are used in primary schools, villages, in traditional practices and are available on radio.

One must not forget too, the pride of being a local language speaker within one's community. This is so even when Bemba is seen as *superior* and a means to an economic end - but the same could be said of English. Zambians have been brought up in a multi-lingual society and many become adept at speaking multiple languages from an early age. This appears to be the direction language use will increasingly take in the North West, especially as more children stay on longer in school and add English to their vocabulary.

Box 6: Kyalo Kya Mali in English (Translated by Melvis Musukwa).

Solwezi kyalo kya mali' i.e. land of money, by 'Best Man - Vilaso Munemba (printed with permission).

*'I am annoyed to hear that Solwezi is a land of money
When people are suffering
Dust all over the roads
Solwezi has gone lame due to the mining activities
Prices have gone higher, especially meali-meal
Making it difficult for the poor people to buy the commodity
As most people of Northwestern Province don't have
Access to work in mines
As a result young women have become prostitutes
Young men have become thieves
People of Northwestern have been neglected for a long time
The Government promised that everyone would find employment in the
mines and good roads, which is not the case
We are therefore appealing to the Government to intervene
So that the prices of goods are reduced and good roads are made.'*

Box 7: Kyalo Kya Mali in Kaonde

In Kaonde:

*Nazhingila pakumva amba Solwezi kyalo kya mali bena kyalo bena kyalo
benakuyanda, Mikwakwa mujitu lukuungu, mikwakwa yataama.*

Namambo a mine, Solwezi yaayankuwa, mitengo kubuunga yakaanjila.

*Bena NorthWestern bavula kechi basebenza ne, Tuna kunkalwa
nekubeya, ketumweka ne nebuleya.*

Bakashana batweela mubukeende, balumendo batweela mubwivi.

Kafulumende witulaayile amba bonse tukatwela nkito mu mine.

*Tunakulomba kafulumende etuwamishishe mikwakwa, abwezhe nemitengo
kubungu.*

Language of a Different Type: Popular Music

Popular music is another medium for revealing changes in society – in this case also because of the mining boom. ZARD's *Woman Know Your Place* (1990), a gender analysis of Zambian popular songs, provides a valuable insight into how such a medium can succinctly highlight social change and prevailing issues. In the North West singers and musicians Yona Mwanza and Stanley Kabwita, who constituted the *Robin Stars* group, and *Best Man* (Vilaso Munemba) all sang in Kaonde and provided some interesting examples of how the mining boom impacted on social life in the province.

As such, these songs remind of the legendary Alick Nkhata whose music in the 1950s, were, as Pritchett (2007) says, '... simultaneously poignant and humorous, about contemporary town life.' However, and sadly, while the words are certainly poignant, the modern mining related lyrics are not as humorous as they tend to focus on the stresses which mining causes.

Mwanza told this author that before the mining boom popular songs previously focussed on rural and family relationship themes but now the issues were different. Their 2009 song *Shimani Daimani* described about how the male workers in Solwezi were regarded to be a 'diamond' and very attractive to single ladies who wanted to marry them because of the good income they earned from the mines. In other words money was now driving relationships, not love or family connections. Another of their songs, *Kikola Kyaosela*, warned about the dangers of HIV/AIDS while *Kya Bwinga* responded to the sharp increase in weddings during weekends in Solwezi, enabled by the ready flow of mining money. *Selina* conveyed the story of a young lady who had just finished school and moved to Solwezi town in search of employment. However, things don't go as planned and she ended up becoming a prostitute in one of the guest houses – a theme said to be based on a true story.

Also meaningful in terms of clearly conveying the impact of the mining boom were the following series of expressions which evolved over the first decade, some of which have also been conveyed in song in the Kaonde language:

- In the early 2000's when the boom first started, Solwezi quickly became known as *Solwezi mabanga*, indicating that the town was now a place to party in the evening, a place of excitement and a desirable place to be - unlike in the past.
- By 2006/7 this theme had evolved into *Solwezi kyalo kya mali* - Solwezi land of money. The words perhaps indicate that the reality of a mining boom was now hitting home, with greatly increased inequalities. Also, it pointed out that money being available wasn't necessarily positive for people and that local government was struggling to keep up with the needs of the burgeoning population. *Best Man*, aka Vilaso Munemba's song *Solwezi kyalo kya mali* i.e. land of money, conveys what was behind that theme (Boxes 6 and 7), with translation by Melvis Musukwa.
- Later in the decade that saying was said to have had evolved into *Solwezi manzala yonka* ('Solwezi is just hungry'), reminding of how many have not benefited.

Former Lumwana staff member Brenda Tambatamba reported to this author that another popular Kaonde song in the Mukumbi area of Lumwana around 2007-2008 was *Sa mpoya, sa mpoya mu mani ne kujima naleka* Translated this reads as 'better I dig and dig in the mine, cultivation is worthless. Cultivation I have abandoned.' This song illustrated the excitement that people were feeling in the initial phase of Lumwana mine's development. Such feelings and song words surely changed as the realities set in.

Interestingly a different and more positive take on the situation appeared in later years (2019) as Kalumbila became the topic of a very catchy song, 'Kalumbila Mine', sung by 'Adrian_K&Given_', the theme being about things having changed for the better because of the mine.

While this description wasn't based on a comprehensive review of all the local pop songs at the time the themes expressed were illustrative of the mixed views of the situation for many, as described by others in less musical terms.

Not only was the Kaonde language being used in modern ways, as in the songs above, but new terms were entering the lexicon to describe modern influences, such as cell phones (*kamulupi*) – a good example of culture, and in particular, language, evolving with the times and sometimes taking on new meanings.



Figs. 82 and 83: (L and C) Legitimately wearing the gear, Metallurgists Sydney Kabwe and Cephas Katwishi and Machine Operator Carol Mbolongwe (all Kansanshi employees) and Fig. 84: (R) unknown, in Solwezi illustrating the trendy new 'look' which even the unemployed managed to appear in when they can, 2014.

Clothing Styles

Clothing styles too evolved, including the fluoro striped mining clothing which has become a desirable, 'fashion accessory' and worn on the streets or in the bars, imbuing the wearer with prestige. This was so even if the wearer was not employed. Such gear even appears at traditional ceremonies (see Fig. 72). Wearing mining gear in bars was also said to be socially attractive to young women who assumed, not always correctly, that it indicated a guy with money. These outfits have come to represent a new and desirable form of masculinity, one which exudes confidence, of someone in control of their lives, proud of their new status, and with ready cash. They represent the classic image of the *MMMs* (mining men with money), and a very different picture to that presented by their cash-poor farmer brothers who eke out a fragile existence in farming.

There is a story of young unemployed men who, in desperation beg, buy or borrow such gear and hang around bars with beer bottles filled with water, so as to look attractive to women. It would be interesting to know if young women in the same gear (far fewer of them) exert the same attraction – maybe they appeal to the men with the watery drinks. Mining gear can also be seen way out in the bush and many miles from any industrial works and can even be bought at roadside stalls. The latter is so even though all such clothing is provided to employees as part of their work entitlements and is not meant to be given away or sold on.

The regard in which mining apparel was being held reminds of the dress code of the *Kalela* dancers on the Copperbelt in the 1940s, *Kalela* meaning 'dance of pride'. Mitchell (1956) in his paper on the subject, quoted Wilson (1942) who saw the root of this preoccupation with clothing in the fact '... that the clothes were the one readily available item of European wealth which gives an immediate appearance of civilized status – as an aspiration to positions of status and respect.' Mitchell also referenced a 1954 newspaper for the African staff of the Nkana Corporation about clothing competitions being held and noted that this practice was also common in South Africa. Interestingly such competitions are still being held today in South Africa, as shown in a Rhys Jones's film (2015).

Seemingly an innocuous subject, it clearly points to a significant need for people affected by the upheaval caused by mining to maintain or re-develop their self-respect and pride when all about them is causing them to lose it.

However, *fluoro* mining gear does not go anywhere close to what was achieved on the Copperbelt in its 'hey day' where local residents in 1950s and 1960s wore the height of western style fashion with bell bottom pants, pointy shoes and fancy hair styles and prided themselves on being modern and affluent. Perhaps it is a little harder to be posh in a town with few sealed roads, broken footpaths and gutters, or none, dust or mud and crowded, tatty shops, and only one modern supermarket.

But the state of the surroundings did not stop wedding apparel from changing dramatically – becoming westernized just as in a capital city and clearly demonstrating money flowing. (Fig. 85).



Fig. 85: (L) Fancy modern style, and expensive, weddings suddenly became common in Solwezi town, 2012.
Fig. 86: (R) An entrepreneur has bought in a truck load of second-hand clothing to Solwezi town and is rushed by customers, 2013.

In response to the increased population with cash there was also a great increase in *salaula*, the sale of second-hand clothing (Fig. 86) which comes into the country in bulk from western countries. Consequently, there were plenty of opportunities to buy a much wider range of clothing, with some of it being re-sold out in rural areas.

Mixing with other Cultures and the Role of Intermediaries

Another aspect of culture change during the mining boom has come about by the increased presence of large numbers of people from other countries, especially China, South Africa, Zimbabwe, Canada, Congo DR and Australia in both work and social situations. These interactions have at times resulted in misunderstandings and confusion about meanings of actions and statements, and also about expectations, especially as they usually involved some sort of negotiation over access to some sort of resource. Consequently, these relationships have required some sensitivity to negotiate successfully and often required an educated intermediary with local understanding to act as a mediator and translator between the foreigners and local people.

The arrival of so many foreigners also exposed local people to different ways and standards of behaving and thinking, just as the European missionaries, colonial officers and the early miners had done when they arrived in earlier decades.

Some such relationships may have been initiated by local women in the hope of gaining an economic advantage while others eventuated through the need for companionship and perhaps in anticipation of being able to develop a relationship with a local Chief and even access through marriage to what had now become valuable land. Some resulted in marriages

and/or children, adding yet another dimension to local lives, just as ‘mixed’ marriages had done in the colonial era, as Milner-Thornton (2012) has well described.

Reflections

There is always some debate, in any country, about whether changes in culture are good or bad for a society, but there is general agreement that most are inevitable. The experience of the North West over the past decade indicates that in some cases the impact on culture has been mild or even positive, and an inevitable part of the modern world reaching out to rural areas. In other cases, especially for those living around mine sites, the impact has been quite negative at times – issues to which most of the popular songs allude. The question is to what extent can such negative impact be reduced or even prevented – and who is responsible for making that possible. Dealing effectively with the challenges can help ensure that the richness of traditional customs can be maintained, at the same time as the inevitable modernization creeps in

Such dramatic and anxiety raising changes in their environment has likely fanned widely held and long-standing beliefs in witchcraft, which, as one researcher reminds us, ‘... is [very] real for those who believe in it’ (Schnoebelen, 2009). Mining impact is ripe territory for increasing strong negative emotions about events, the cause of which can then be blamed on magical forces, and also inspire actions against those purported to have caused the problems. This is yet another area which needs to be recognized and understood by observers.

As one government official ruefully said to this author in 2013, ‘Mining has opened a Pandora’s Box’, especially in the way it has impacted on some key aspects of culture.

PART FIVE

OVERALL REFLECTIONS REGARDING THE IMPACT OF THE FIRST DECADE OF THE MINING RELATED BOOM

In less than a decade parts of the previously quiet backwater province changed dramatically, mainly due to the presence of the three big mines and the growth of their related communities. But changes also occurred, to a lesser extent, in a more widespread manner because of the flurry of exploration and small and medium scale mining, including many unlicensed activities. During this period almost the whole province became licensed, the majority being held by optimistic amateurs – the *land-bankers*. This situation was a concern for the Chiefs for it turned the focus away from other forms of economic development, the holders seemingly unaware that the majority of sites would never become a functioning mine. All of these developments were enabled by the significant increase in global mineral prices during the 2000s, which were in turn a result of accelerated global demands for minerals, especially from China. Without such a price rise the North West's minerals would not have been economic to mine because of the nature of their geology, a problem which had plagued the province for many decades, as did the lack of infrastructure.

The many mining associated infrastructure and business developments were also part of the changes, as was the large influx of often better educated and qualified job-seeking outsiders and business people who flooded into Solwezi District. However, the rest of the province was only minimally affected, apart from Kasempa, and remained largely quiet and undeveloped, although many were excited about the possibility of mining also occurring in their areas.

There was also an increase in various types of studies being undertaken, partly because of the North West having taken over from the Copperbelt as a focus of interest to researchers and partly due to the number of environmental assessments which had to be completed and approved before the various economic developments could start. Consequently, the data base of information on parts of the province greatly increased, although the information was of varying quality. NGOs also became interested in the developing situation too, but only six years after the start of the boom.

Looking back over the first decade it is apparent that many local people felt that they were 'between a rock and a hard place'. While they were very happy for modern developments to have finally arrived, and for the province to have suddenly achieved national importance, they were also very conscious of the multiple problems which had arisen locally. The national GDP might have risen and the regional one too during this era, due to North Western resources, but the benefits were not evenly shared at the local level.

Consequently, it was felt that the mining developments were 'Good, BUT ...' and there were many reasons for the mixed feelings prevailing during this period of major social and economic change.

The Benefits - the Shiny Side of the 'Copper Coin'

Considerable economic benefits arose from the mining boom, especially for the national government. The North West became 'the locomotive of economic development for Zambia' as Honourable Musokotwane had said. FQML alone was reported in the 2015 ZEITI report to have become Zambia's largest taxpayer, responsible for more than a third of government income from the mining sector in 2015.

In addition, the national treasury benefitted from the taxes and fees paid by the various associated industries, including transport and imports. In recognition of the importance of these contributions close attention was now being paid, for the first time, to the province by Presidents and Ministers. Hence the North Western *Copperfields* had taken over from the once thriving *Copperbelt* as the national focus for economic development.

The District Council also benefited significantly from the presence of three mines in its area, including from fees and taxes and from various forms of assistance. However, it was difficult to know how these funds were spent and there was little evidence that much was being returned to the province, commensurate with S136 of the (then) Mining Act and with its greatly increased population and need for services.

Thousands of employment opportunities, both long and short-term, were created within the mine sites in diverse areas. However, many of those employed were from other parts of Zambia because they were more appropriately skilled and educated. The mine workforce was largely Zambian although some higher level and specialist skills had to be imported. Mining work also included many short and long term training opportunities which enhanced Zambian skill levels. Some well-placed local elite and others, including from outside of the province and country (and especially South Africa), were able to capitalize well on the new developments, supplying goods for the mines, most of which could not be obtained in Solwezi or even other parts of Zambia because it is not a manufacturing country. It was mainly services, such as security and cleaning, which could be provided locally.

Beyond the mine sites many large, medium and small businesses, including in the service, transport and hospitality industries, multiplied rapidly, employing both local people and new arrivals. There was also a dramatic increase in land sales (not always legitimate ones) and construction, businesses of all sizes flourished and much cash flowed (although it was said that few could keep it). Even more would have done so if they could have overcome the inherent constraints, including very high interest rates. These activities made for a booming local economy, the likes of which Solwezi town, the heart of the mining boom, had never before experienced.

The previously quiet areas out at Manyama opposite Lumwana and Kisasa near Kalumbila also blossomed on a smaller, more down-market scale, with many small businesses and basic houses multiplying, populated by desperate job seekers in areas which were largely unplanned with limited services. Out in the bush at Kalumbila, a large, well-planned town, with more upmarket housing and commercial developments was established by the company, creating Zambia's only modern, fully serviced town – although affordable only to those in good jobs.

The population in Solwezi town area increased rapidly from about 71,000 in 2000 to over quarter of a million in just over a decade. It created a large demand for housing, food and services, enabling markets and more substantial shops, as well as social venues to flourish. A golf club and senior staff housing estate was built by Kansanshi and two large hotels by South Africans and one by government. Solwezi town suddenly had some modern facilities and a relatively affluent middle class for the first time. Traffic on the roads, especially the T5, more than quadrupled, as did the number of planes arriving, including large ones once the runway was extended (by Kansanshi). Solwezi town hummed with activity, including at night, and suddenly it became an exciting, desirable place to be. It earned its new title *Solwezi Mabanga* ('in the evening') and was as aptly described by the *Welcome to Solwezi. Where it was all happening* sign on the T5.

By the mid-2000s the term describing the North West as the land of honey had evolved into *Solwezi kyala kya mali* ' (the land of money).

As well, the mining companies were (eventually) able to start to re-coup their investments, which were considerable because the North West had lacked almost all the necessary basic infrastructure. Government had been singularly unable, or unwilling, to put at least some of the enabling elements into place, perhaps knowing that the companies would then be pushed into providing them.

In short, in order of magnitude, the major beneficiaries were the companies (once they had paid back their considerable start-up costs); national government; international and some national level businesses; many workers, including some local people, but especially those from the Copperbelt and some medium sized local business owners including landlords, lodge and bar owners, hardware merchants, and transporters. On a much lesser scale, beneficiaries included small business owners, including marketeers, landowners, the producers of food stuff and charcoal, sand and aggregate and service providers such as shop assistants, domestics, hospitality workers, cleaners, builders and security workers.

The Disadvantages – the dark side of the ‘Copper Coin’

As in all mining booms, there were significant downsides. The rapid increase in population resulted in competition for services and the rapid growth of low standard housing largely un-controlled and un-serviced risked contaminating communal water supplies. These issues occurred both in Solwezi town and out at Manyama and Kisasa. In town the problem was exacerbated by the absence of junior mine staff housing, which was a Kansanshi company policy decision and partly due to the extent of sub-contracting. The influx of would-be mine workers put enormous pressure on the already existing inadequate housing situation - but local entrepreneurs benefitted by rushing to build and/or rent out houses and rooms. Many people built their own low standard houses in an ad hoc fashion, connected by rutted tracks and even impinging at times on Council wayleaves. Only a couple of town roads were sealed and the rest badly needed regular grading, especially after the rainy season. This situation created challenges which the inadequately resourced and poorly capacitated Council was unable to cope with – despite its greatly increased income from land sales and rates and business fees, including those from the mines which made it a comparatively wealthy Council. But it was overly reliant on the mine income, because for a combination of reasons it failed to collect far more from town residents.

Chaos resulted, with the town area referred to in the press as ‘haphazard’, ‘an eyesore’ and a ‘shanty’. It was nothing like the well planned and controlled Copperbelt cities looked like in their heyday. While town plans existed they did not anticipate the extent of the population increase, nor was their implementation adequately funded. Solwezi town might have become an exciting place but it certainly wasn’t easy to live in. The lack of a town bypass meant that there were constant traffic jams in the centre of town, especially when the over-sized mine trucks came through, the T5 being the only path to both the *copperfields*.

A major problem for the many local people who weren’t able to obtain well paid jobs was the rise in the cost of living, especially rents and basic food items. They tended to be disadvantaged and disempowered by their low levels of education and lack of relevant skills and entrepreneurial nature.

The influx of mostly better capacitated newcomers mostly outshone them in these areas, many of whom came from the Copperbelt which had been experiencing a severe economic down-turn at the time. The latter were likely to be better connected to recruiters and also sufficiently cashed up to be able to provide bribes which often helped to obtain employment, despite the local employment preferential policies practiced by the companies. The combination of these factors meant that local people were less likely to be able to obtain mine jobs or otherwise able to cash in on many the new opportunities which had become available.

The local people were consequently shocked at being made to feel like strangers in their own homeland and having to 'watch others eat well', as educationalist Richard Kasoma said sadly to this author. This was especially so after having had high expectations of being significant beneficiaries of the new developments on their own land.

It was dismaying and difficult for them to understand why this state of unfairness existed. This is not to say that some weren't able to cash in on the new opportunities by selling their labour or produce, or provide accommodation for many did so, but the competition was stiff.

Also negatively affected by the high cost of living were new arrivals who flocked into the supposed 'El Dorado' from outside the province who failed to obtain work and had no land to farm, and also the many local school leavers, especially the young men who haunted the town desperately looking for work. Problems were also experienced by the local would-be entrepreneurs who tried to cash in on the many new opportunities but failed to invest their earnings wisely and to compete successfully with experienced and larger businesses from outside the province. While all three large mining companies provided support for getting involved, there were many constraints to achieving success, including cultural ones.

Social problems included overcrowding in schools and clinics which were unable to cope with the large population now requiring services – an obvious need to which government clearly failed to respond adequately or in a timely manner. Not only were the children of the newcomers demanding school places, and being given official priority, but many had the money to pay school fees. In addition, local people now recognized that school qualifications were the secret to obtaining mine jobs, so suddenly there was a strong motivation to send and keep their children in school for longer – even if it was a struggle to find the money for fees.

Unfortunately, government failed to anticipate this demand and student : teacher ratios were impossibly high in all major mine areas, being anywhere from 60-120:1, making it a nightmare for teachers and an environment difficult for students in which to learn. To make matters worse, because of the lack of enough official housing teachers in town also had to compete on the open market, which was now very expensive. Schools were also having their land encroached on by often illegal housing and commercial developments, thereby preventing ease of expansion if indeed such funds were available. Government health services were similarly over-whelmed and under- resourced to cope with the increased demands. However, four private mini-hospitals and the mine clinics were established which helped to absorb some of the demand. Kansanshi also helped with improvements to the Solwezi General Hospital.

The Community Development office reported a large increase in social issues, including desertion of families by cash-rich miners and wives leaving their husbands for better-off men.

While some did prosper, many others didn't. As 'Best Man's' song said: 'Solwezi has gone lame, young women have become prostitutes and young men thieves...' The Pop songs clearly reminded that inequalities are exaggerated, not lessened by the advent of large-scale mining.

By the end of the first decade the theme of Solwezi being the land of money had evolved again, with the town becoming known by many as *Solwezi manzala yonka* (Solwezi is just hungry) and a term which Mutondo Kawilila explained also implies an element of begging

Communities

Use of the term 'communities' was not strictly accurate for groups of local people were rarely homogenous or even cohesive. While the majority in a particular area were from the local ethnic groups there were always, even in rural areas, as many as a quarter from other groups, including a few from outside the province. Also, the farming communities were not static, many members changing their locations in an ad hoc manner according to family relationships, cultural events, the seasons and farming requirements. Other local residents included those running small businesses, civil servants and church leaders, all of whom had been in the area for varying lengths of time. Yet others were retirees who had returned to their home province after working on the Copperbelt or in Lusaka for many years. Local people then are best regarded as those inhabitants who lived in the various mining areas before the mining boom occurred and who were consequently affected, directly or indirectly, by the changes which occurred. Many were rural farmers living traditional lives scattered in small hamlets, often with poor access to basic services, few familiar with urban lifestyles.

Because of this background and the lack of familiarity with the industrial world, local people often misunderstood the nature of the situation and had unrealistic expectations about the extent of benefits that were likely to accrue. Many naively expected to become personally 'rich' from the local mine and to automatically obtain employment. They failed to understand the nature of modern mine work and the need for literacy and relevant skills.

Such attitudes were bound to result in severe disappointment, confusion and anger when work opportunities and other 'riches' turned out not to be readily available to them. A former Mayor of Solwezi, Jameson Kapumba was one of the few who understood the issues and spoke out about them during a community consultation at Kalumbila in 2010, trying to help the people understand the reality of what was about to happen. He made the point about being able to send their children to school so they could become 'people that are recognized' – and get jobs. The remark related to the prevailing low levels of education in the North West which were perceived by the Council of Elders and others as being the region's major impediment to development (including being able to obtain formal mine jobs). Incidentally, this belief was shared by the companies, hence their focus on supporting education).

Some Traditional Authorities contributed to the issues which arose. As a World Vision representative wisely said in 2013, 'The Chiefs needed to play a role in cooling down their members who maybe 'over-excited about sugared investments...'. But the Chiefs also lacked experience in dealing with such issues and they themselves needed training and help to play a supportive role, which they barely received. They ended up learning how to cope mostly by trial and error, from using their own initiative and also from obtaining support from the companies. But at times their personal interests over-shadowed their duties to their people.

A major issue was the extent of competition from the usually better educated and more qualified outsiders, which sometimes involved corrupt practices. The companies bent over backwards to try to be supportive to local communities in regard to preferential employment, but were somewhat constrained, not only by the poor education levels prevailing, but by the fact that ethnic bias was unconstitutional. This was a quandary which government failed to help to resolve. The issue of not being able to obtain many jobs, let alone high levels ones, at 'their' mine, was probably the most serious one which arose, causing much resentment over the years at all sites. Few wanted to think about other possible opportunities outside mine sites.

The other issue for communities were the delays in arranging compensation and/or resettlement. At Kansanshi the original processes were a lengthy bungle, at Lumwana compensation for loss of farmlands also dragged out and at Kalumbila the very long delays caused by the national government/company management level legal and construction issues greatly exacerbated the tensions inherent in any re-settlement.

The failure by government to enable smooth and timely processes when dealing with projects had implications which flowed onto the communities more generally. In the case of the Kabompo Hydro communities they were kept on tenterhooks for over four years, with their move constantly being delayed. Compensation was paid out in order to settle their concerns, even though moving never eventuated. The aborted rail project also raised expectations and created let-downs.

Also, the new resettlement housing at Kalumbila, while desirably 'modern' and solid posed challenges in terms of the recipients having to adapt to a new, more static lifestyle which was a major break with their traditional one. The suitability of their design, and also of the staff housing at Lumwana and Kabitaka, could usefully be reviewed and the lessons passed on for future exercises.

Communities themselves didn't always act in helpful ways. For example, some misled their peers, mining staff housing wasn't always used responsibly, one local representative stole some compensation belonging to others, opportunism complicated compensation at times and sometimes privilege were abused. Also, the mines frequently reported theft of equipment and supplies. These examples illustrate that communities themselves weren't always *angels*. On the other-hand, it was undoubtedly very difficult for poor, un-educated people from rural areas to understand the bigger picture and not try to take advantage of whatever opportunities presented, whenever they could. Following on from these points, one should also ask how people from traditional rural backgrounds can be helped to better benefit from such developments and what really would have been a 'fair deal' for local residents.

Those in affected areas had their lives psychologically, socially and economically disturbed, both in traditional rural and in semi/urban areas. Their place in local society was altered, often for the worse, their relationships to others changed and their values were affected, especially where obtaining cash suddenly became more important than maintaining family or local ethnic relationships. Such disturbances can have significant effects on psycho-social well-being, causing confusion and anxiety, at least initially.

There is a real and often unrecognized psychological and social cost to modern developments.

Part of the problem was that before the changes the reputation of North Westerners nationally had been quite negative, which was at least partly related to their low education levels and their historically contrary voting patterns. One Musele resident even said bitterly during an EIA consultation that their people were regarded as '*mud*' by other Zambians, vividly expressing a wide-spread and long-standing belief about the inferiority of the North Westerners. Hence the advent of the big mining developments was a matter of much pride for the local people, enabling them to hold their heads high at long last. This attitude was demonstrated by the importance attached to the wearing of mining gear, of *being somebody* at long last. But this pride was often dashed by their limited ability to access mine jobs and resulted in much disappointment. That so many outsiders accessed many of the new opportunities was particularly hurtful. One can only guess at the extent these stresses were felt, for only a few of the existing studies, and the popular songs, hint at such impact. Notably subjective factors like these are not costed into compensation rates.

The changes also created political disturbances, upsetting existing and creating new local power structures, and aggravating existing tensions and jealousies. Land suddenly assumed a major importance, and cause of disputes and court cases were reported to have become more common. There was an exaggeration of inequalities between those with and those without, both between the elite and between those with jobs and those without, and those communities with and without mines. In addition, traditional authorities with mines, and not just the large ones, suddenly assumed increased power and at times became personal beneficiaries, although any such benefits were meant to accrue to the position and the community, not to the individual. However, some were able to take advantage of the new situation for the benefit of their communities, demonstrating supportive leadership regarding economic and other opportunities.

However, compensation wasn't always used sustainably. As in any group some were sensible and others spendthrift, carried away with the excitement of having relatively significant amounts of cash for the first time. There were also a number of occasions when Government, and at times some Chiefs, failed to support and protect their people's interests and it wasn't until they were provided with support from NGOs that some communities were capacitated to stand up for their rights, although sometimes with limited success.

Definite downsides related specifically to the communities adjacent to the big three mines. Approximately five thousand people were displaced and/or otherwise directly affected and approximately 400,000 hectares were taken up by mining licences, including other smaller mines not included in the table (not all this land would actually be mined). This was equal to about 4000 km² in a province of 125,826 km² i.e. about 3.2%. In addition, some of that land was damaged severely, not just by the massive mine pits (and numerous smaller ones elsewhere) but also by the equally extensive tailings dams, as can be clearly seen from Google Earth. In addition, there was the loss of access to many hectares of forests and interruptions to rivers, streams and dambos. There was also the risk of pollution and damage to the local environment both from the mines and from developments associated with the large increase in urbanized populations, including from unsafe sewerage disposal and contamination of underground water. Other environmental problems related to the greatly increased demand for charcoal, wood and building materials such as sand, aggregate and termite mound soil. Health issues associated with the influx are discussed in the separate sectoral paper.

In regard to the mine area relocations, North Westerners have always been a very mobile population, the style of farming traditionally requiring being able to regularly find new plots and leaving the old one's fallow for a number of years. Given the size of the province and the very low population density, there had been ample land available (although not all was suitable for farming) - so having to move was not necessarily a problem. Also, many had already voluntarily moved to towns within and without of the province over the decades. Relocation of populations (not mining specific) was also a long-standing government policy and practice in the country so such movements were not unusual.

The difference was that people were being pushed to move, with the sweetener being that there was some compensation, providing a probably unique chance to obtain a large amount of cash. The situation was somewhat different for each of the major mine areas but a common issue was that, for unclear reasons, traditional authorities and local government did not always quickly find acceptable new locations for housing and/or farm land for those having to move. If planners had made new locations attractive by the provision of roads, water supplies and other services it might have been a different story. But wanting to be close to where the new 'action' and services were, meant that people weren't satisfied to be moved away to un-supplied areas.

Aggravating the stress about relocation were concerns about possible future food shortages. However, the companies were aware of this risk and they all made it a priority to prevent the problem from occurring, including by supporting accelerated maize production and providing jobs. Considerable stress occurred because the compensation provided was considered to be inadequate, it never being as high as the people ambitiously expected. This caused much resentment. However, the Kalumbila rates were reported by the company (with evidence comparing it with other Zambian mine areas), as well as by a World Vision representative, as being high. The rates were logically justified in detail by the Ministry of Agriculture in the later years, although one could argue about what they did and didn't include. In particular, the rates failed to account for the more subjective losses being experienced, which are of course, extremely difficult to quantify. A big question remains about what is the true value of the land from which people have been displaced and what is truly commensurate for their broader non-economic losses, and life-style disturbances.

Another more subtle aspect of moving to new places involves its effects on social relationships. Nienhaus' 1968 study and Crehan 1997 book shed some light on this subject in pre-mining days but the subject does not seem to have been explored during and after the recent relocations. Nor is there any non-anecdotal information about how people who took their compensation in cash or sold their compensation house fared.

As with all compulsory relocations it was a difficult period, made doubly so by company weaknesses in one case, hold-ups caused by legal and administrative issues at national and management level in another and by traditional and government authorities' inadequacies. The latter included a lack of an approved policy (although a draft existed) and insufficient staff and resources to support the processes and enabling political leadership.

An outstanding question about how much land is really needed by a mining company (including for tailings dams), if indeed it is possible to be specific about this. Does it matter if a mine, with well justified technical evidence, takes up a large proportion of a Chiefdom, given that these areas vary enormously in size and that mineral deposits do not respect such boundaries - and also that people are free to move between Chiefdoms?

This may be a sensitive question but the reality is that mineral deposits pay no heed to colonially established Chiefdom borders, and also that they may not be easily identifiable until well into the mining cycle.

By the same token, many were able to benefit from the increased demands for farm produce and from their compensation, which enabled them to open small businesses, improve their houses, buy modern household goods and pay school fees. Some received solid, modern new houses and obtained employment, at least for short periods of time. Various types of training were also a benefit for some, especially women who responded more positively than men tended to do. The empowerment received from NGOs was also positive for some and a positive development was initiation of regular Provincial Mining Indaba's. There were also many community benefits such as classrooms and clinics although they were never enough to meet the burgeoning needs. However, some people failed to appreciate that improved community resources were part of the benefits in which they could share. In addition, thousands of local people did personally benefit from some jobs at all major mine sites, at least for a short, while and local businesses were given opportunities to participate, even if all were not able to successfully do so.

Unfortunately, many of the genuine issues raised, especially about sharing in mine ownership arrangements and increasing benefits returned from Lusaka to the province were national ones, beyond the scope of local authorities, and Lusaka wasn't listening. However, such matters continued to be raised at the annual ZAMI meetings.

'The Big Three'

The experiences of each of the three major mines were somewhat different because of their locations, the type of communities present and the way their developments were managed. Consequently, they cannot be directly

Kansanshi in 2002 in particular, was initially poorly resourced to handle social matters and management underestimated the extent of the need. There was no professional social capacity or policies in the early days. The challenges were aggravated by the mine being situated on the edge of town and by local government inadequacies. As a result, problems dragged out for over a decade at significant cost to the well-being of those affected. Such issues would never have occurred if the social aspects of mining had been recognized as being core mining business needing 'investment' right from the beginning. Having learnt the hard way, its social performance improved in later years.

Lumwana invested heavily in social matters right from the beginning in 2005 and experienced far fewer problems, but their situation in a relatively lightly populated area with no housing resettlement, was far less challenging. However, the inclusion of three Chiefdoms posed some issues, as did the mine related influx at Manyama which was neglected by government which had, in theory but not practice, taken responsibility for them.

Kalumbila from 2010 was socially better resourced than Kansanshi had been and implemented its activities according to international standards but its efforts were challenged by having so many families scattered around the mine site. Dealing with large scale resettlement of people is inevitably complex and time consuming but the pressures were severely hampered by national government and company management level related construction and legal problems.

These matters had a very negative flow-on effect for the smooth relocation of the communities. They were also made worse by the high level of public interest in the controversies which arose around 2012-2014 and the well-intentioned but sometimes misguided NGO interventions which complicated matters. These pressures placed unnecessarily heavy demands on the social team which persisted over a number of years.

This situation well illustrated how management level issues and government and traditional authority weaknesses can impinge on the welfare of the affected communities, and on the ability of social teams to effectively perform their duties in supporting them.

But the overall situation was not static in any case, and clearly a settling-in process occurred. Almost all players, including government agencies, were new to the challenge of coping with a mining boom and all had to learn the hard way how to cope with the developments, and each other. Regrettably it was mostly the local communities which had to bear the brunt of the problems which arose. The situation would have been far less chaotic if government had demonstrated adequate political will and professionalism and adequately resourced its departments; if the companies had been more experienced and in less of a hurry (an unrealistic expectation); and if their social teams had been more adequately resourced. An understanding of local (and national) socio-political factors would have also helped ease relationships. The lack of cohesiveness of the communities and their often un-realistic expectations did not make the situation easier. It would also have helped if traditional leadership had been capacitated to better manage their responsibilities and if some had been less self-interested, and more supportive of their communities.

However, the situation did mature over the decade as all players settled better into their new circumstances and as the various processes were undertaken and completed.

But it was clear that the companies were constrained time and time again in trying to get the mines established and also in trying to help local government and the communities around them. Many examples are mentioned in the text and Matt Pascall (2018) spells out in his Brenthurst article what the issues looked like from the company point of view. It was clearly not a business supportive environment and corruption underlaid a lot of the problems which were occurring. Even those who are antagonistic to the role of the private sector must recognize that the levels of obstruction and the games playing which went on were extraordinary and do not match the rhetoric dished out at mining conferences and other public fora. It would be useful to compare Pascall's points with those described in the World Bank (2011) paper on 'What would it take for Zambia's Copper Mining Industry to achieve its potential? And one, might add, make it as profitable as Chile's has been.

Corporate Social Responsibility

A very big plus was the amount of CSR provided by the companies. All three provided a significant and comprehensive array of socio-economic focussed CSR projects worth many millions of dollars from which communities did benefit. The total amount provided over the decade is not mentioned because there are differing views on what can be counted as CSR and some appear to have inflated their contributions, including mixing them up with public relations activities. The contributions made by small mines and businesses does not seem to have been documented, except for those provided by Lumwana's contractors, and was probably negligible compared to those of the big mining companies.

However, such contributions were never considered enough by the local people, partly because their impact was often diluted by the presence of so many outsiders and the extent of the need, and also because of weaknesses in government providing the necessary complementary inputs.

There was also an issue of people not realizing just how much the companies were providing – which was difficult to publicise to scattered, rural communities, especially when there were still so many outstanding issues. It also appeared at times that government was abrogating responsibility for social services to the companies but as a Barrick Gold regional manager was quoted as saying in 2012, a company ‘... should not become a de facto government ... We don’t own the development process, and we don’t want to.’

In addition, few, if any, recognized just how much companies were additionally providing to national and local government in terms of taxes and other types of payments. NGOs did advocate for a much greater percentage of mine taxes to be allocated back to the province but Lusaka obviously had other ideas about their use.

There was a broader issue too, with communities’ expectations being that the companies would solve all of their social infrastructure needs, as on the Copperbelt, and would continue doing so indefinitely. This was hardly appropriate, fair, or sustainable. Lumwana’s approach to having communities contribute a percentage of materials to the building of schools etc. however, went some way towards achieving that aim, even though this approach was far more time consuming than by doing it by themselves.

While CSR contributions were almost always in line with government priority sectors, e.g. agriculture, health and education, how well they fitted in with ongoing programmes was another matter. Also, companies needed to be seen to be producing results quickly, which did not mesh well with slower moving government services. Also, projects hadn’t always been planned for at the national or provincial level, which sometimes affected provision of complementary inputs. On the other hand, it was important for the companies to demonstrate results quickly to their communities (and for their public relations) so there was an inevitable disconnect here. The productiveness of the companies also meant that it became easy for government to rely on them to get things done. But one thing was clear, communities would not want the CSR funds to be provided directly to government, given the companies’ much great reliability and efficiency.

The question of which communities should be included in a mine’s area for CSR contributions remains a contentious issue and is complicated when it comes to proximity with a broad town area, as with Kansanshi, or one in which the mine’s licences stretched across more than one Chiefdomship, as with Lumwana. This issue also related to the contributions made to activities outside ‘their’ immediate area, such as for traditional ceremonies. If spread too thin then the CSR value dissipates. It is apparent that CSR contributions for some areas and not others created inequities between North Western communities with big mines and those without. It is difficult to know where to draw the line.

Another issue was about who decides on the amount of funding to be provided, what that amount is based on, and whether the specific allocations are decided with community and government input. In one case this wasn’t happening which meant that contributions remained paternalistic rather than indicating shared ownership and cooperation.

It was apparent during the first decade that the companies had become, by default, the new 'developers', implementing for longer periods than do donor agencies but at times without using staff with development backgrounds. Even though projects were usually in appropriate sectors not all were successful which was disappointing, embarrassing to the contributor and sometimes disturbing for the intended beneficiaries. Interestingly, the implementation issues they experienced were similar to those of the big donor projects in the 1980s when the Dutch, Germans and UN agencies attempted to help transform the province's farming sector. Often the key weaknesses were cultural issues and the broader political context which were inadequately addressed in project design and implementation. Many of these issues are well described in Crehan and Von Oppen's edited document (1994) and also in some of the papers in this author's Agriculture/Forestry/Fish Farming/ Bee Keeping bibliography. Rushing to get things done based on pre-conceived ideas also played a part in the problems which occurred.

Interestingly in 2015, in an attempt to lessen communities' reliance on the company, Lumwana initiated a transition of responsibility to a community-led Trust after ten years of having directly managed the processes. It will be useful to see how this new arrangement worked out.

It is apparent from these varied experiences that there needs to be guidelines for the provision of CSR. It would also seem appropriate to have an independent review body to monitor and undertake periodic reviews and to hold regular forums for the sharing of experiences between all players. By the same token, the role of government in such activities need to be clarified so that they are not seen to be abdicating their responsibilities to the companies. It also needs to be appreciated, given that prevailing conditions are far from ideal, that 'grand plans' are unlikely to be successful and that something less ambitious (and showy) and more rooted in local know-how might be more achievable.

The Smaller Mines and Exploration

The major public focus was on the 'Big Three' but other medium and small mining ventures operated mostly out of the 'limelight' because they were situated in isolated areas. While these projects created a few jobs for local people (almost always men) and a demand for local foodstuffs, many of these mines were also associated with negative work conditions and relationships with communities. There were a number of court cases over land and/or company ownership, as well as border disputes and in some cases, threats and violence were occurring. Local communities were at the mercy of such companies and often failed to obtain support from local leaders, some of whom had been 'bought-off'. Often we only know about the negative cases because of NGOs and a few others who reported on their situations and attempted to advocate on behalf of those affected. An additional issue was that smaller mining companies invariably did not have the capacity to recruit social staff, nor the experience to implement appropriate CSR programmes – a problem shared with 'Junior' mining companies elsewhere.

The un-licensed mines, often artisanal, were particularly problematic, especially in terms of occupational safety. In addition, an illicit middleman business serviced the micro-industry and must have thrived, able to obtain and deliver products to buyers on the Copperbelt, transporting sometimes high value items, curiously without interference, through police or army roadblocks. This sometimes occurred under the guise of transporting items such as vegetables.

Government needed to be much better capacitated to monitor and control this sub-sector, in terms of community and worker well-being, as well as the collection of taxes and to identify the potential for pollution. However, such efforts are unlikely, given the prevailing culture of corruption and the distances to be covered. It may well have suited certain parties to ignore this situation.

The exploration teams and surveyors were also out of the 'limelight' but also had an impact as they travelled around rural areas surveying and drilling, and by their mere presence, exciting hopes of wealth to come amongst local people. Their activities also inspired, on occasion, some movement of people, so as to be in position to be eligible for compensation when the time came, if it ever did. Elements of corruption were also reported to be practised by some companies in regard to their relationships with local government and traditional authorities – representing a spread of the vice through previously 'unaffected' areas. So, while being largely out of the public eye, these activities were also very much part of the mining boom. In the interests of community rights and well-being they need to have more light shed on them, and more support to ensure protection of their rights.

Government

The involvement of different levels of government was a major complication in this story. The state of Solwezi town and the Manyama and Kisasa areas, as well as the T5, made it clear that national government's approach was, as one observer said, to '*milk the mining cow*' without '*feeding the cow*' that created the wealth. This was a very different experience from that on the Copperbelt, where the corporates had acted as a responsible de facto government investing in the provision of a modern, well-organized and fully serviced environment. But the North West mining boom occurred in the new era of privatization and such centralized control and colonial paternalism was not appropriate for an independent country. With privatized mining such support was now the responsibility of national government, using mining taxes and other income to meet the needs of the population. But it was apparent during this decade that government frequently abrogated its responsibilities to both communities, the companies and its own local government. It appeared that it did this presuming (or hoping) that the companies would then have to pick up the slack if developments were to proceed in a timely manner. In addition, government did not make things easy for the companies in many other ways, including its many erratic changes in policies. It was hardly the business-friendly environment.

Surprisingly, the Mining Ministry itself was insufficiently staffed and resourced to cope with the sudden boom in licence applications and new mines. The Cadastre office and ZEMA, whose workloads expanded exponentially in the mid-2000s, were especially badly affected, over-whelmed by the numerous implications for licences and ill-equipped to deal with monitoring, including in other mining areas.

At the local level, provincial authorities reported feeling a degree of helplessness, of being unable to control matters. This was not because of the mining companies, but because of the control exerted by the national government where so much of the power was held. Also, local members of parliament did not appear to have been speaking out effectively for the province, with one brief exception. Nor indeed were they able to do much because they were mostly members of the opposition party.

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However, such contributions were never considered enough by the local people, partly because their impact was often diluted by the presence of so many outsiders and the extent of the need, and also because of weaknesses in government providing the necessary complementary inputs.

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Local government, in particular, was clearly not capacitated to deal effectively with the major changes in Solwezi District. This was largely because the national government had failed to provide extra funding allocations commensurate with the increase in the population.

Without an additional staffing establishment, better office conditions (improvements which did not happen until the second decade), and an increased budget and capable leadership it had no chance of coping effectively. Also, the reactive, rather than proactive, nature of local government, meant that events were managed, or not, as they happened, rather than by anticipating, planning ahead and controlling them. The constantly changing provincial and district leadership also meant that there was no consistent overview of the situation i.e. no stable 'commander in chief' to monitor, guide and manage, and to recognize how the situation was evolving over the decade and adjust resources and programmes accordingly. DDCC unfortunately seemed to be unable to provide the necessary degree of coordination, analysis and open communication.

The Council itself was also inadequately skilled and the staff too poorly resourced, both in terms of numbers and experience to effectively and efficiently manage its share of the responsibilities. Much tension was created because of the Council's slow rate of functioning. This was especially so as the companies needed to progress their developments very quickly and could work much faster and more efficiently.

Capable and dedicated staff struggled to cope in such a weak governance environment. It didn't help that all three big mines were originally in Solwezi district, not to forget many other smaller developments, and that all were new to dealing with such a fast-moving situation.

An underlying aspect of this story was that there was generally perceived to be a strong element of political bias against the North West due to its long history of contrary voting and supposed tribal inferiority. It seemed that the many calls to improve Solwezi town and address other matters went unheeded by those at the national level because of this attitude. Another issue was that communication between all parties was weak, starting with the confidential mine agreements made behind closed doors with government and its arrangements with Chiefs. The regular changes in government leadership contributed, as did the speed of the changes.

Consequently, it was no surprise that confusion reigned and it was common to hear that people did not know what was going on, both in town and in the rural areas. It suited some to maintain this lack of clarity. A local newspaper, reliably informed and not politically controlled, would have been a great resource during the first decade. However, the airing of inevitably negative elements may well not have been welcomed, as exemplified by a community radio talk-back show being taken off air on at least one occasion because it frankly discussed the issues.

Communities in the Solwezi town area initially blamed the companies for the problems which occurred, rather than government, or a Chief or other elite. But by the end of the first decade they began to realize that the cause was often *within*, as Father Jude had indicated at the 2013 Alternative Mining Indaba.

Looking back, it was obviously unrealistic to have expected local authorities to have coped more effectively, given the prevailing state of the civil service in general and its politicization, as well as the extent of corruption at all levels. National government's control, narrow self-interest and lack of political will to support the North West played were key elements in how things played out.

The End of the Decade

At the end of the first decade the situation was still confusing for many local people. They failed to understand why the North West had not transformed into a modern, well-functioning area in which they could all benefit. It was a huge disappointment that the opportunities were limited to a select few and that most could only look on, watching others, especially those from outside, *eat well*. The costs for many (and the environment) were high and inequalities increased. It wasn't 'a fair deal', as one Chief said.

While the developments had been eagerly awaited, as an educated North Western citizen sadly said, 'We have tended to focus on the economic gains, not the losses.' By 2015 communities were undoubtedly still somewhat unsettled - physically, psychologically and socially, a situation which would take some years to resolve as they adapted to the new realities.

On the other hand, some modernization had occurred, markets for produce had greatly increased and there had been many more job opportunities, even if not all on a mine site. A large variety of community benefits had been also been provided, although they were insufficient to meet all needs and could not be spread across the whole province. As well, the North West had achieved national economic and political importance.

Consequently, there was an inherent quandary about experiencing a mining boom, of literally being between *a rock and a hard place*, damned if they did agree to mining and damned if they didn't. But the bottom line was that without mining, the province would still have been *sleeping* - which wasn't what the local people wanted either.

Just as Bishop Hemptinne had feared for Katanga, the mining boom indeed created '... a profound social and demographic crisis ...', and something of '... an epochal transformation' as Wilson had sensed about the Copperbelt - at least for parts of the North Western province.

Social change is rarely an easy process, especially so when, in a few short years, a traditional rural society meets fast moving industrialization and its inevitable impact. But strong political will, forward planning, honest dealings and prioritizing community welfare could have softened the blows.

But let us see what Kayipu, the ‘king’ of the Makishi masquerade (Fig. 88) might have thought about the transformation of (parts of) the province:



Fig 85. Kayipu, one of the Makishi dancers at Likumbi Iya mize, 2016. Credit: Patrick Sapallo, <https://www.youtube.com/watch?v=mdh0aVW7ZzY>

An all-seeing Kayipu (representing ancestral spirits) observing the impact of mining over the decade would have undoubtedly detected a confusing mix of situations, including a strong imbalance in the distribution of great benefits and many disadvantages. Such a scene would have made it very difficult to decide whether mining was good or bad for local society, in both the short and longer term. It would also have clarified that for every benefit there was costs , and which were unevenly distributed.

Kayipu would have also seen a confusing evolution over the decade:

From Solwezi kyalo kyabuchi, the land of honey (and a quiet subsistence lifestyle)

To Solwezi Mabanga, a place of action and excitement (for those with cash)

and 'olwezi kyala kya mali, the land of money (and economic developments for some)

But also, *Solwezi manzala yonka*. It was still the land of hunger for many.

This mixed reality is the quandary which mining inevitably presents.

- But does it have to be so?

POSTSCRIPT: THINKING AHEAD - THE POST MINING ERA

The final thought should go to the future. The North West province became part of the global economic system largely as a result of China's accelerating industrialization which created a historically high boom in mineral prices. But history tells us that prices are unlikely to be stable and that inevitably a bust will follow. We only have to remember the experiences of the Copperbelt to be reminded of the realities of mining-related economies, and of the importance of implementing a parallel plan for economic diversification. Otherwise, the province will inevitably revert again to being a quiet backwater. As the Senior Chief Mukumbi (who had worked on the Copperbelt) said in 2013, 'A well-meaning person needs to think in two directions, one to mining and the other to a future without mining'.

Just how long the current boom will continue only a mineral analyst would be brave enough to guess for it may continue as it is for another decade or so, it may expand during this period, or it could collapse sooner than later. It will all depend on national tax regimes and the global demand for minerals.

In his book, Sumbwa (1993) included some proverbs which well describe this sentiment in local terms:

In Luvale: Uli nangoji kachimwana mwaholoka (had you a cloth for carrying the baby on your back, the child would have not fallen). A teaching of the need for common sense, and to be better prepared, so that accidents won't happen.

In Kaonde: Wakolwa munda yaulwa nakinzhilo (he who has a stomach-ache fights with a door). A person in difficulty should not wait for others to assist him but should show some initiative to solve it himself.

In Lunda: Wakata mwivumu walwa nachenzelu (he who has a stomach-ache fights with a door, as above). Or *Nzambi wenka wemazhala* (God helps those that help themselves)

In the meantime, the North West needs to press on with diversification before it is too late and to do so well before the 'copperfields' revert back to being farming fields – or empty craters.

Given the province's geography and natural resources such diversification must surely primarily focus on developing its agricultural potential. At the same time the valuable lessons from previous attempts need to be taken into account. Both the Jaeger (2015) and Crehan and Van Oppen (1994) publications, as well as various UN evaluations, the Lumwana studies and the experiences from recent mining company efforts provide important information for guiding such plans to fruition. In order to support such development the enabling infrastructure, policies and services need to be national and provincial priorities, with complementary commercial enterprises also in place. That way the North West can realize its potential in a much more sustainable way than any mining industry can do.

ADDITIONAL RELATED INFORMATION ARE AVAILABLE IN AN ADDENDUM ON THE AUTHOR'S WEBSITE: margocall.wordpress.com

Including: Short discussion papers on sectoral impact, including Mining and Education, Gender, HIV and Environment; a partly annotated bibliography of general North Western Province studies 1900s+ and a partly annotated bibliography on Agriculture, Forestry, Fishing and Bee Keeping.



AUTHOR'S PROFILE

Margaret O'Callaghan, an Australian, initially trained and worked as a primary school teacher. During her subsequent fifteen years of full-time parenting she was very active with various community organizations and also carried out research. In order to facilitate a return to the paid workforce she undertook a degree in Applied Sciences, which included field work in Papua New Guinea, and later co-authored a book on drug use and abuse in Australia

She subsequently worked with AusAID, mainly on programme design, monitoring and evaluation of aid projects. In 1993 she was appointed as UNFPA representative to Papua New Guinea, another mining country – which is where she first became involved with mining companies. In 1998 she was posted to Zambia where she served until mid-2005. During those years she also travelled widely on the continent. Her involvement in North Western province commenced in the early 2000s with the designing and overseeing of a program focussed largely on reproductive health which was informed by the findings of a literature review and a study into the socio-cultural aspects of reproductive health practices and beliefs. The findings were incorporated into an integrated programme of assistance to the province, including support for health services, nurse training, adolescent reproductive health, HIV prevention, community based maternal health and the upgrading of equipment and supplies to district health services. Support was also provided to refugees in the Meheba settlement and for the use of census data in planning. In addition, she facilitated funding from the Danish Government for the building of *Bumi House* in Solwezi town which she designed and had built on land provided by the Government. The building, owned by NGOCC, serves as their provincial headquarters for women's empowerment activities. UNFPA funded Zambian project staff whose work she oversaw from Lusaka, were also based there for over a decade in order to implement the provincial focussed projects. The decentralized model of assistance was later used else-where and the community based maternal health concept nationalized.

On returning to Australia she undertook consultancies in the Pacific, carried out research, published papers and delivered presentations on various development issues. Her research into the socio-economic impact of mining in North Western province was undertaken on a part-time basis over the past eight years, drawing on many aspects of her past careers and new learnings. During this period she also acted as a resource person to others, including researchers, NGOs and mining companies around the world, generously sharing her literary resources and advising them on their projects. Three papers, side-stories of 'Copperfields', were also published. During part of this period she was an honorary Visiting Fellow at the Australian National University in the Resources, Environment and Development Centre. She has continued to actively promote the understanding of African issues in Australia, supported African students studying in Canberra and is currently on the executive body of the African Studies Association of Australasia and the Pacific.

REFERENCES

All mine and other major projects references are grouped under their common mine name, unless by GRZ, for simplicity's sake.

Some of the references are not publicly available.

In addition to the following references there are many more reports/papers/books in a) a general NWP related partly annotated bibliography and b) an Agriculture/forestry/fishing and beekeeping.

Acres, B., King, R., Rains, A., Lawton, R., (1985). African dambos: their distribution, characteristics and use. January.

Action AID Zambia (2015). Impacts of Mining Extractive Industries on Women in Zambia. Study Report.

Allan, W. (1965). The African Husbandman, Oliver and Boyd, p. 375.

Alstine, Van, J., and Afionis S., (2013). Community and company capacity: the challenge of resource-led development in Zambia's 'New Copperbelt', [Kansanshi CCA]. Oxford University Press and Community Development Journal, 48, 3, July 2013, pp 360-376. (based on the 2011 report by Van Alstine, Afionis and Ngosa, Seeking Benefits and Avoiding Conflicts: Community-Company Assessment of Copper Mining in Zambia. (Kansanshi).

Anckar, B. (2007). 'Trapiche Tourmaline From Zambia', Thomas Hainschwang, T., Notari, F., and Anckar, B. Gems and Gemology, Spring 2007, p 39. December.

Banda, F. (2015). Presentation to the Japan-Zambia Business Forum, 4th March.

Beech, A. (1959) 'Traction Engines'. Northern Rhodesian Journal, Vol. IV, 2, p.197/8.

Beyond Brics, (2014). 'Grinrods rail deal: right direction for Africa'. 6th February.

Binsbergen van, W. (1987). Chiefs and the State in Independent Zambia, Exploring the Zambian national Press. Jn. Legal Pluralism, nra. 25 and 26. p. 139-201.

Bisson, M. (1980) 'Pre-History Archaeology of North-Western Province, Zambia' in Johnson, D. (ed.) Handbook Series No. 8, North-Western Province, Zambia Geographical Association, Lusaka: 61-66.

Bradley, K. (1966). The Diary of a District Officer. 4th edition, MacMillan, London.

Brelsford, V.W. (1965). The Tribes of Zambia, 2nd edition, Government Printer, Lusaka.

Brummer, J. and Woodward, G. (1999). A History of the Zambian Copper Flower. *Becium centraliafricanum* (B. homblei). Journal of Geochemical Exploration, V. 62, Issue 2, March, pp. 130-140. [https://doi.org/10.1016/S0375-6742\(98\)00068-5](https://doi.org/10.1016/S0375-6742(98)00068-5)

Burgis, T. (2015). The Looting Machine, Public Affairs, NY, NY, p. 81, quoting World Bank, Commodity Markets Outlook, Jan. 2014.

Caritas Solwezi/CSPR (2009). Mining in North Western Province, Draft Baseline Information Survey Report. (field work in 2007).

Carlucci, P. (2013). When Companies Meet Communities: The Copper Storm Brewing in North-Western Zambia, Think Africa Press. 17th October.

Chabatama, C. (2009). Working Paper on Social-Ecological Resilience Series No. 2009-012 Ecological Adversity and Food Supply in Northwest Zambia. Research School for Humanity and Nature, December.

Cheelo, K. (2008). Behind the Economic Figures: Large-scale mining and rural poverty reduction in Zambia, the case of Kansanshi copper mine in Solwezi. Massey University New Zealand, Master's thesis.

Chibesa, S. (2008). Single resource economic base for urban management: a study of local authority role in stimulating economic diversification in Solwezi, Lund University. MSc.

Cleary, P. (2012). Mine-Field, The Dark Side of Australia's Resource Rush, Black Inc., Melbourne.

Coleman, F. (1971). The Northern Rhodesia Copperbelt 1899-1962: Technological development up to the end of the Central African Federation." Manchester University Press / Augustus M. Kelley Clifton, NJ.

Copeman, E. (1954) George Grey. Rhodes-Livingstone Journal, Vol. 2, No. 3: 23-25.

Cotton, I. (2018). Copper Prices Crash But for How long? July 25th. <https://smallcaps.com.au/copper-prices-crash-but-for-how-long/>

Council of Churches in Zambia (2010). Prosperity until Death, Is Zambia ready for Uranium Mining? Lusaka.

Council of Elders, (2010). North Western Development Conference Report, 26th August.

Crehan, K., (1997). The Fractured Community: Landscapes of Power and Gender in Rural Zambia. Berkeley and Los Angeles, Uni. of California Press, (based on studies undertaken in the 1970/80s), University of California Press, London.

Crehan, K., and Von Oppen, A. edit., (1994). Planners and History, Negotiating 'Development' in Rural Zambia, Multimedia Zambia.

CSPR/Caritas Solwezi (2009). The First North West Mining Meeting (2008) report. Solwezi.

CSPR/Caritas Solwezi (2011). Discovering Fate. Uranium mining and the people in Lumwana, May. Daniel, P. (1979). Africanization, Nationalization and Inequality, Mining Labour and the Copperbelt in Zambian Development, paper in Industrial Relations and Labour, 4, Cambridge University Press.

Daniel, P. (1979). Africanization, Nationalization and Inequality, Mining Labour and the Copperbelt in Zambian Development, paper in Industrial Relations and Labour, 4, Cambridge University Press.

District Notebooks, various entries for Balovale, Solwezi, Kasempa, Mwinilunga but some files far from complete. National Archives of Zambia.

Dyer, J., Leventon, J., Stringer, L., Dougill, A., Syampungani, S., Nshimbi, M., Chama, F., and Kafwifwi, A. (2013) Partnership Models for Climate Change Compatible Development: Experiences in Zambia. Resources, 2, 1-25. Doi:10.3390/resources 2010001

Fabian, J. (2000). Out of Our Minds. Reasons and Madness I the Exploration of Central Africa, University of California Press, Berkeley and Los Angeles.

Ferguson, J. (1999). Expectations of Modernity. Myths and Meanings of Urban Life on the Zambian Copperbelt, University California Press, Berkeley, p. 2.

Findlay, A. (1980) 'Kansanshi Mine', in Johnson, D. (ed.) Handbook Series No. 8, North-Western Province, Zambia Geographical Association, Lusaka: 191-200.

First Quantum Mining Ltd. (2007). Chitungu Road EIS for the Road Construction Project in NW Province to be Developed by FQM Operations, for FQM by Macweb Surveying Consultants, April.

First Quantum Mining Ltd. (2013). Sustainability Report.

- First Quantum Mining Ltd. (2016). Annual Information Forms, and various other years.
- Fortune World Investments (2019). Report on Business Development Workshops for Medium and Small Business Enterprises, May.
- Frederiksen, T. (2017). Corporate social responsibility and political settlements in the mining sector in Ghana, Zambia and Peru, Uni. of Manchester, ESID Working Paper No. 74, January, p. 13 and p. 15.
- Gann, L.H., (1969). A History of Northern Rhodesia, Early Days to 1953, Humanities Press, New York: 121-122.
- Gertzel, C., (1991). Margery Perham's Image of Africa, *The Journal of Imperial and Commonwealth History*, V. 19, Issue 3, pp. 27-44.
- <https://www.tandfonline.com/doi/abs/10.1080/03086539108582844>
- Gewald, J-B., Luning, S., and van Walraven, K. editors. (2009). *The Speed of Change. Motor Vehicles and People in Africa, 1890-2000*. Brill, Leiden-Boston.
- Giliomee, H., and Mubenga, B. (2007). *New History of South Africa*, Tafelberg, Cape Town, p.199.
- GRD Minproc, (2003). *The Kansanshi Copper Project, NWP, Zambia, Technical report*.
- Grey, G. (1901). The Kafue River and its Headwaters. *The Geographical Journal*, Vol. 18, No. 1, (July), pp. 62-77.
- Grey, G. (1903). Reports to Tanganyika Concessions Ltd., on the Discoveries Made by Mr George Grey's Expedition in Northern Rhodesia and Congo Free State and Reports by Mr R.J. Farrell, Mining Engineer.
- GRZ, Central Statistics Office, (2000 and 2010) *Zambia Census of Population and Housing reports*.
- GRZ, Cadastre Office, (2009-2015). *Ministry of Mines. Mining Licence Data*,.
- GRZ (2008a). Department of Community Development and Social Services, *Annual Progress Report, 2007, NWP*.
- GRZ/Central Statistics Office (2008b) *Economic Survey*.
- GRZ (2008c) *Lumwana Integrated Development Plan and Status Quo Report*.
- GRZ/Ministry of Local Government/CSO and Lumwana (2008d). *Mini-Census, part of baseline data for the Integrated Development Plan process, December 2007/January*.
- GRZ, (2009). *Solwezi Integrated Development Plan, Status Quo Report and Spatial Development Framework*.
- GRZ/Environmental Council of Zambia (2010). *Annual report*.
- GRZ (nd but probably 2010), *Solwezi District Development Plan, 2011-2015, p. 12*.
- GRZ/Solwezi Municipal Council (SMC) (2012 and 2013). *Meeting and committee reports, various*.
- GRZ, MACO (2012). *Annual Report, Solwezi*.
- GRZ, Ministry of Transport Works, Supply and Communications (2013) and NWR Co. Ltd. 'From a landlocked to a land linked Zambia. Chingola-Solwezi-Jimbe Railway Line', presentation to Public-Private Dialogue Forum, Johannesburg, SA, Oct.

- GRZ/National AIDS Council (2014a). Zambia Country Report. Monitoring the Declaration of Commitment on HIV and AIDS and the Universal Access Biennial Report. 31st March.
- GRZ/National Assembly of Zambia, Hansard (2014b). 3rd December.
- GRZ/GIZ/Solwezi Municipal Council (2015). Strategic Plan 2015-2019,
- GRZ/GIZ/SMC (2016) Solwezi Urban Baseline Study, Final report, October.
- GRZ/ZEMA (2017). Call For Submission of Profiles From Environmental Assessment Consultants And/Or Firms'. 21st February.
- Hakwendenda, P. (2005). The Interface Between the Evolving Urban Land use and the Planning of Solwezi Urban., University of Zambia (UNZA), Master of Science Geography p. 46.
- Hansen, A. (1979). Once the Running Stop: Assimilation of Angolan Refugees into Zambian Border Villages. Disasters 3, (4): 369-374.
- Hanshep (2013). A Mining Health Initiative case study: First Quantum Mining Limited, Zambia: Lessons in Government Engagement, January.
- Harvard Business Review (2018). The Right Way for Companies to Publicize Their Social Responsibility Efforts. Mark Kramer. 2nd April.
- Hecht, G., (2014). Being Nuclear, Africans and the Global Uranium Trade, Massachusetts Institute of Technology.
- Hemptinne, de, Bishop of Katanga, quoted in Palmer and Parsons, The Roots of Rural Poverty, 1977, University of California Press, p. 324, quoting Archives du Parquet d'Elizabethville, Lumbumbash, Note by Governor Bureau, 20th November 1926.
- ICCM/Chamber of Mines of Zambia (2014). Enhancing Mining's Contribution to the Zambian Economy and Society. Mining Partnerships for Development, April.
- Independent Observer (2014), '14 Houses Collapse in Solwezi', 14th March.
- Jaeger, D. (1981). Settlement Patterns and Rural Development: A Human Geographical Study of the Kaonde, Kasempa District, Zambia. Royal Tropical Institute, University of Amsterdam, 324pp. <http://dare.uva.nl/record/394624>
- Jaeger, D., (2004). 'Ups and Downs of Development in :Inside Zambia 1964-2004', ed. Tom Draaisma and Ella Knuizinga, Cordaid and Werkgroep, Den Haag.
- Jaeger, D. (2015). Fifty Years of Kasempa District 1964-2014: Change and Continuity. E book: Africa Studies Centre Library, University of Leiden, 2015- Refer to <https://DavidWilkinNWPZambia-com/Kasempa>.
- Jaeger, D. (2020, forthcoming). Pre-Colonial and Early-Colonial Tracks in the North-Western Zambia.
- Jifumpa (2015). EIA for Jifumpa Mine. For Ruida Investments Ltds., by MV Consulting Engineers, May.
- Jimbe (2013). Jimbe Mine Project in Ikelenge District, North Western Province Zambia. For Jimbe Mineral Resources by African Mining Consultants.
- Johnstone, L. ed. (2019). The Politics of Conducting Research in Africa. Ethical and Emotional Challenges in the Field. Palgrave MacMillan, Springer International publishing.

- Kabompo Hydro (2011). EIS for Proposed KG Hydro Electric Scheme, for CEC by DH Engineering, March.
- Kabompo Hydro (2012a). Preliminary Resettlement Action Plan, for CEC by CEC/KHPL, October, revised December 2013. Based on earlier population/household surveys (2009-2011).
- Kabompo (2012b). Project for the Rehabilitation of the D273 Access Road to Kabompo Gorge Hydro Power Station, EIS for CEC By Mwata Consultants (revised in 2013).
- Kabompo Hydro (2013). Proposed Construction of a Township Complex and Resettlement Housing Scheme at Kabompo Township, EIS for CEC by DH Engineering. January.
- Kalinda, C., et al (2015). Economic Impact and Challenges of *Jatropha curcas* L. Projects in North-Western Province, Zambia: A Case of Solwezi District. *Sustainability*, 7, 9907-9923; doi:10.3390/su7089907
- Kalumbila (2010). Trident Copper, Nickel Project, NWP Zambia. Socio-Economic Specialist report, December.
- Kalumbila (2011). Minutes of general update and mobilisation of resettlement-related activities. Meeting, 24th August 2011, pt. 3. Sentinel project.
- Kalumbila, (2012a). Trident Copper, Nickel Project, NWP Zambia. Environmental Impact Statement for the Sentinel deposit (includes sub-reports such as the Stakeholder Engagement reports) which was ultimately separated into two reports, the other being for Enterprise). For KMP by Coastal and Environmental Services.
- Kalumbila (2012b). Resettlement and Compensation Plan. For KML by Nomad Consulting. August.
- Kalumbila (2012c). Kalumbila Town Development EIS, For KML by Arup.
- Kalumbila, (2014a). EIS for the Proposed Kalumbila Town Airport. By FQM. March.
- Kalumbila (2014b). Enterprise Deposit NWP Zambia, Final EIS. For KML by CES, May.
- Kamatete (2013). EIA for Kamete Iron Mine Project For Sino-Kasempa by MV Consulting Engineering, November.
- Kambani, S. (2003). Small-scale mining and cleaner production issues in Zambia, *Journal of Cleaner Production* 11, 141–146.
- Kansanshi (2002). Environmental Impact Statement. For KMP by Blandford, D.C. and Associates, December.
- Kansanshi (2010). Kansanshi Communities Social Survey. For KMP by Consultant Newall.
- Kansanshi (2011a). Kabitaka Housing Estate, for KMP by Arup, Zimbabwe.
- Kansanshi (2011b). Proposed Sulphide Tailings Storage Facility Environment Impact Statement, April, for KMP by Golder Associates.
- Kapatamoyo, M., (2009). Provincial Coordinator for CSPR, NWP, quoted in Caritas' 'Baseline Information for the Mining in NWP', draft, p. 39.
- Kapepwe, M., and Guhrs, T., editors, (2007). 'Ceremony! Celebrating Zambia's Cultural Heritage'. Celltell Zambia PLC and Seka, Lusaka.
- Kapesa, R., Mwitwa, J. and Chikumbi, D. (2015). Social Conflict in the Context of the Development of New Mining Concessions in Zambia. *Southern African Peace and Security Studies*, Vol. 4, No. 2., p. 41.

Kaswende, K., (2013). 'Is "Town Njanja" becoming Zambia's National Language/' The Bulletin and Record, August, p.12.

Kesselring, R., (2017). Disenclaving the Planners' Enclave: The Housing Project Kabitaka in Solwezi, Northwestern Zambia.

Kesselring, R., (2018). The local state in a new mining area in Zambia's NWP'. Chapter 7 in 'Extractive Industries and Changing State Dynamics in Africa. Beyond the Resource Curse', 1st Edition, Routledge, London.

Kiwara, (2009). Environmental and Social Review Summary, KML site, April.

Knoblauch, A., Divall, M., Owuor, M., Archer, C., Nduna, K., Musunka, G., Pascall, A., Ng'Uni, H., Utzinger, J., and Winkler, M. (2017). Monitoring of Selected Indicators in Children Living in a Copper Mine Development Area in North Western Zambia. [Kalumbila]. Int. J. Environ. Res. Public health, 2017, 14 (3), 315. Doi:103390/ijerph14030315 (<http://dx.doi.org/10.3390/ijerph14030315>)

Knoblauch, A., Divall, M., Owuor, M., Musunka, G., Pascall, A., Nduna, K., Ng'Uni, H., Utzinger, J., and Winkler, M. (2018). Selected Indicators and determinants of a women's health in the vicinity of a copper mine in north western Zambia. [Kalumbila] BMC, Women's Health, 18:62. <http://doi.org/10.1186/s12905-018-0547-7>

Larmer, M. and Giocoma, M., (2007). The Origins, Context and Political Significance of the Mushala Rebellion Against the Zambian One-Party State, October, Int. Jn. African Hist. Studies, 20, Issue 3, p.471-496.

Legal Resources Centre et al, (2014). Free Prior Informed Consent, paper, presented at the Zambian Alternative Mining Indaba, Ndola, June.

Lumwana (2005). Environmental Impact Assessment, July. For LMC by various consultants and including some earlier studies.

Lumwana (2007a). Social Sustainability Performance Monitoring Plan. July. By Kanga Creative Associates.

Lumwana (2007b). HIV/TB Prevalence at Lumwana and Knowledge, Attitudes and Practice governing behaviour towards HIV among community members and employees of Lumwana Mining Company, June. For LMC by ZHECT.

Lumwana (2008a). Lumwana Business Sustainability Study, January, Vol. 1. For LMC by group of consultants led by V. Mwanza.

Lumwana (2008b). Lumwana Business Sustainability Study, Vol. 2: A Gender Perspective of Business Activities in Lumwana Area. For LMC by group of consultants led by V. Mwanza.

Lumwana (2008c). Equinox Releases Positive Lumwana Uranium Feasibility Study. 29th April.

Lumwana (2009a). Lumwana Forestry Livelihood Diversification Programme, Participatory Rural Appraisal Study, February-March. For LMC by Food and Trees for Zambia.

Lumwana (2009b). Lumwana: new town founded. Urban Green File, June.

Lumwana (2011a). Social Sustainability Management Plan, Social Impact Assessment Draft Report, June. For LMC by RuralNet Associates.

Lumwana (2011b). Concept Title: Lumwana Business Incubator and Mine Supply Park. For LMC by Lubilo Mate, 5th April.

Lumwana (2012). Barrick, Managing the In-Migration. Barrick Beyond Borders, 11th December.

- Lumwana (2013a) Barrick, Sustainability Department Report to the Second Quarter 2013 Land-use Planning and Development Committee Meeting, 19th September.
- Lumwana (2013b). Barrick, Lumwana Development Trust Fund, Status Report, Round 1, Nov. 2007-March 2009 and Round 2, Oct. 2009-June 2013.
- Lumwana (2013c). Barrick, Report on the Status of the Economically Compensated Community Members, October. For LMC by M. Imakando.
- Lumwana (2013d). Zamland, Report of Finnish-Zambian co-creation journey in Lumwana, May.
- Lumwana (2014a). 'Preparing local suppliers for success in rural Zambia', Barrick Beyond Borders, 7th April.
- Lumwana (2014b). Barrick, Lumwana Mine, Technical Report NI 43-101, March 27. pp. 20-7/8.
- Lusaka Times (2012a). Kansanshi Mine to build 3500 houses in Solwezi. 5th August.
- Lusaka Times (2012b). 'The issuance of mining licences is not transparent - Chief Mumena of the Kaonde People,' 3rd May.
- Lusaka Times (2014). 'Solwezi's Manyama School pupils learning under tree'. Quoting Richard Banda of Caritas Solwezi. nd.
- Malachite Films, (1971). Kansanshi, video, written and produced by Paul Davies.
- Malaisse, F. (2010) How to Live and Survive in Zambezian Open Forest (Miombo Ecoregion), Les Presses Agronomiques de Gembloux.
- Mambwe, K., (2012). Correspondence with this author, October.
- Marbus, R., (2014). Absa Capital Africa strategist, quoted in Beyondbrics, 'Grinrod rail deal: right direction for Africa, article by Irene Madongo, 6th February.
- Marten, L., and Kula, N. (2008). One Zambia, One Nation, Many Languages, Pre-publication version appeared in Language and National Identity in Africa, Simpson, A., ed. Oxford: OUP, pp. 291-313.
- Melland, F. (1967). Republishing of 1923 book. In Witch-bound Africa, An Account of the Primitive Kaonde Tribe and their beliefs, Frank Cass & Co., Ltd., London, 2nd edition, p.9.
- Michell, Wilson, G. (1942). The Economics of Detribalization in Northern Rhodesia, Rhodes-Livingstone Papers.
- Miko, W.B. (2012). Correspondence with the author., September.
- Milner-Thornton, J. (2012) The Long Shadow of the British Empire, The On-going Legacies of Race and Class in Zambia. Palgrave MacMillan, New York.
- Mitchell, J. C. (1956). The Kalela Dance. Aspects of Social Relationships among Urban Africans in Northern Rhodesia. Manchester, Manchester UP on behalf of the Rhodes-Livingstone Institute, Sidene. 144 (43), 1956.
- Mokoena, M. (2014). Presentation to Second German-African Infrastructure Forum, Munich, 3rd November, SADC Secretariat, Gabarone.
- Mondoloka, A. (2013). Job and Wealth Creation Impact of Mining Community Development Programmes in Zambia, Abner Bright International, for ILO, Lusaka.
- Mondoloka, A. (2017). Approaches to supporting local and community development. The view from Zambia, Working Paper 2017/41, UN University World Institute for Development Economic Research, p. 9.

- Mucheleng'anga, C. (1993). UNESCO Culture and Development: The Zambia Experience. Paper presented to International and Inter-Agency Forum on Culture and Development, September, 20-22, Seoul, Korea.
- Mukando, M. (2014). Parliamentary debates, Fourth Session, 11th Assembly, Committee of Supply, 20th November.
- Mukanga, C. (2012) Zambia's Lost Gemstones, *Zambian Economist*, 4th December.
- Musambachime, M. (2016). *Wealth From the Rocks, Mining and Smelting of Metals in Pre-Colonial Zambia*, Xlibris.com.
- Musele Task Force. (2013). *Proposals on the Development of the Kalumbila (Trident) Mine*, March.
- Musele Task Force. (2014). *Kalumbila Land Grabs, the Unfolding Drama of Greed, Economic Sabotage, Cultural Aggression and Injustice.*
- Musonda, C. (2011). *The Impact of Urbanization on Housing Needs in Zambia: The Case of Solwezi Town*, B. Urban Studies thesis, December. p. 85.
- Mususa, P. (2016). *Contesting Illegality: Women in the Informal Copper Business*, Chapt. 7. Notes 29, p. 207, in Fraser and Larmer, edit. *Zambia, Mining and Neoliberalism*, Palgrave MacMillan, NY, NY.
- Nama (2013). *EIS Nama Cobalt and Copper Mine*. For Caledonia Nama Ltd., by MVC Consulting Engineers, July.
- Negi, R. (2010). Personal communications on draft 'Development and its Disruptions in Zambia: notes on the ethnography of instability'.
- Negi, R. (2011). *The Micropolitics of Mining and Development in Zambia: Insights from the Northwestern Province*. *African Studies Quarterly*, 12, 2, Winter 2011, pp 27-44.
- Negi, R. (2014). *Solwezi Mabanga: Ambivalent Developments on Zambia's New Mining Frontier*. *J. Southern African Studies*, Vol. 40, No. 5, pp. 999-1013.
- Ngosa, F., and Dyer, J. (2014). *Seeking Benefits and Avoiding Conflicts: A Community-Company Assessment of Copper Mining in Lumwana, Solwezi [District], Zambia*. [CCA process with CRS, University of Leeds and Catholic Diocese of Solwezi]
- Nienhuys, S. (1968). *Geneology of Chitungula Valley*, p. 8. Article reproduced by the Scandinavian Institute of African Studies, Uppsala, 1990. Seminar proceedings.
http://www.nienhuys.info/mediapool/49/493498/data/Genealogy_survey_in_Mukumbi_area-c.pdf
- O'Callaghan, M. (2018a). *Research Issues in a Recent Zambian Mining Boom: some on-site observations*. *Development Bulletin*, 79, January: 53-56.
- O'Callaghan, M. (2019a). *Impressions of the Zambian North West Province Mining Area Five years on*. *Zambian Daily Mail*, 15th September.
- O'Callaghan, M. (2019c). *Fake News and the Role of Non-Corporate Players During a Mining Boom – Justice Misplaced?*
- Oyama, S., and Kondo, F. (2007). *Sorghum Cultivation and Soil Fertility Preservation Under Bujumi Slash-and-Burn Cultivation in Northwestern Zambia*, *African Study Monographs*, Suppl. 34: 115-135, March.
- Oxfam GB. (1998). *Hansungule, M., Feeney, P., and Plamer, R. Report on Land Tenure Security on the Zambian Copperbelt*. November.

- Parkin, J. (1980). 'An Introduction to the Geology and Mineral Occurrences of North Western province, Zambia', in D. Johnson (ed.) Handbook Series No. 8, North-Western Province, Zambia Geographical Association, Lusaka: 3-30.
- Pascall, M. (2018a). Meeting the Challenges of Mining in Africa. Brenthurst Discussion Paper, September.
- Pascall, M. (2018b). Farewell statement to FQML staff.
- Perrings, C. (1979). Black Mine Workers in Central Africa, Industrial strategies and the evolution of an African proletariat in the Copperbelt, 1911-1941. Heinemann, London.
- Pesa, I. (2012a). "We have killed this animal together, may I also have a share? Independence and beyond in Mwinilunga District, 1950s-1970s", essay presented at the Narratives of Nationhood Conference, UNZA 11-13 September.
- Pesa, I. (2012b). Independence and Beyond in Mwinilunga District, 1950s-1970s, paper delivered at the Narratives of Nationhood Conference, Lusaka, 11-13th September.
- Pesa, I. (2015). Moving along the roadside. A social history of Mwinilunga district, 1870s-1970s. PhD thesis, Leiden University.
- PLAAS, (2016). Changing agro-food systems, The impact of big agro-investors on food rights. Case studies in Mozambique and Zambia. November.
- Post Online (2013). 'Zambia lacks capacity to monitor mines.' Musukwa, 16th September.
- Powerline (2012a). EIS for Proposed Mumbwa-Kalumbila-Lumwana 330KV Project. For ZESCO by Environment and Social Affairs Department, November.
- Powerline (2012b). Resettlement and Compensation Plan for Proposed Mumbwa-Kalumbila-Lumwana 330KV Double Bison Transmission Line Project. For ZESCO by Environment and Social Affairs Department, November.
- Pritchett, J. (2001). The Lunda-Ndembu, Style, Change, and Social Transformation in South Central Africa, University of Wisconsin Press.
- Pritchett, J. (2007). Friends for Life, Friends for Death, Cohorts of Consciousness Among the Lunda-Ndembu, University of Virginia Press. pp 130-131.
- Raballand, G., and Whitworth, A. (2011). 'Should the Zambian Government Invest in Railways?' ZIPAR Working Paper, No. 4, Dec.
- Railway (2012). EIS for the Construction and Operating of a Railway Line from Chingola Through Solwezi to Lumwana. For North West Rail by Ng'andu Consultanting Ltd., March.
- Railway Gazette, (2015). 'Three Presidents inaugurate rebuilt Benguela railway'. Infrastructure Africa. 16th February.
- Rhys Jones, G., (2015) 'Slow Train Through Africa', ABC TV, viewed 3rd June.
- Rockel, S. (2006). Carriers of Culture: Labor on the Road in Nineteenth-Century East Africa. (Social History of Africa Series.) Heinemann, Portsmouth, US.
- Sarkka, T. (2016). The Lure of Katanga Copper: Tanganyika Concessions Limited and the Anatomy of Mining and Mine Exploration 1899-1906. South African Historical Journal, 2016.
<https://www.tandfonline.com/doi/full/10.1080/02582473.2016.1153707>

Schnoebelen, J. (2009). Witchcraft allegations, Refugee Protection and Human Rights: A Review of Evidence. UNHCR, New Issues in Refugee research. Research Paper, No. 169. Policy Development and Evaluation Service.

Schumaker, L. (2001). Africanizing Anthropology, field work, networks and the making of cultural knowledge in Central Africa, Duke University Press, Durham and London, p. 162.

Short, R. (1973). African Sunset, Johnson Publications, London. p. 100 and p. 109.

Skippings, D. (2012). Zambia Railways – A Vital But Underutilized Asset. Presentation to ZIMEC, Lusaka, 19-22 June.

Solwezi Today (2011). November, 'Lumwana Spruces Up Chief's Palaces' p. 15. 18th March

South Africa Magazine (1914). Domestic Announcements. Frank Melland's wife was recorded as having given birth to a daughter at Solwezi, 5th December.

Sumbwa, N., (1993). Zambia Proverbs, PC publications, Multi-Media Publication, Lusaka.

Summer Institute of Linguistics International (2002). Ethnologue of Languages of the World, 14th edition.

Sunday Post (2011). 'North Western Changing Dramatically, says Musokotwane', 20th February.

Sunday Post Online (2014). Solwezi's state of development an embarrassment – Mulapenga. 15th February.

Tabour, G. (2003). The Cape to Cairo Railway and River Routes, Genta, Cape Town.

Thornhill, J. (1915). Adventures in Africa, Under the British, Belgian and Portuguese Flags. John Murray, London.

Times of Zambia (2012). Planning Long Overdue. Quoting Local Government Minister Luo, 25th June.

UNHCR (2019). Meheba Briefing Note, March 2019.

Van Binsbergen, W. (1987). Chiefs and the State in Independent Zambia: exploring the national press. Journal Legal Pluralism & Unofficial Law, Vol. 19, 25-26, pp.139-201, January.
<https://doi.org/10.1080/07329113.1987.10756397>

Wilkin, P.D. (1983). To the Bottom of the Heap: Educational Deprivation and its Social Implications in the North Western Province of Zambia, 1906-1945. PhD thesis, Syracuse University.

Williams, T. (1913). Rhodes House Oxford, Administrative Officer, Northern Rhodesia: Diaries, 1912-21. MSS. Afr. S. 776-781, Kasanshi, January 21st, 1913.

Wilson, G., (1942). The Economics of Detribalization in Northern Rhodesia, Rhodes Livingstone Papers, 1942.

World Bank, (2012). What would it take for Zambia's Copper Mining Industry to achieve its Potential? Finance and Private Sector Development Unit, Africa Region. Report No. 62378-ZM. June.

World Bank, (2012). De-Fragmenting Africa: Deepening Regional Integration in Goods and Services. Washington DC.

World Economic Forum, World Bank/African Development Bank, (2013). The African Competitiveness Report, 2013, p. xiii.

World Vision Australia (2008 or 9) Annual Program Review, Section 3, Developing New Approaches, Facing the Rural-Urban Reality.

World Vision (2011). Musele Area Development Programme, Performance Report, Based on Evaluation Findings, 2005 and 2010.

Yaluma, C. (2013). National Assembly debate, Wednesday 19th June 2013. Record of Minister for Mine, Energy and Water Development Yaluma answering question from Mr Katuka regarding licences.

Zambia Reports (2014). Christmas Blues: Solwezi ATMs Run Out of Cash, 27th December.

Zambian Alternative Mining Indaba (ZAMI). 2012-2014 reports. CSPR/Caritas/Action Aid and author's notes.

Zambian Daily Mail (2012). FQM invests \$1m in Kansanshi nature reserve. 14th September.

Zambian Daily Mail (2015). Kalumbila Mine Clashes: Police Arrest, Charge 18. 31st March.

Zambian Economist (2013). Zambian Economist, NW Rail Project, 13th June.

Zambian Environmental Management Agency (ZEMA (2017). Press Release – Call for Submissions of Profile from Environmental Associations Consultancies and/or Firms.

Zambian Extractive Industry Transparency Initiative Reconciliation (ZEITI) Reports, Zambia, various years, Lusaka, 2009-2015.

Zambian International Mining and Energy Conference (ZIMEC) (2014). Report, p. 8.

Zambian Nation (2013). Mulesa ends protest walk, 24th July.

Zambian Post (2013a). Solwezi Counsellors in land scams, quoting Provincial Minister Mubukwanu . 16th October.

Zambian Post (2013b). Lumwana Explains Job Losses, 16th May.

Zambian Post (2014a). Reporting on President Sata's presence and quoting him at the Nc'Wala ceremony in Eastern Province, 22nd February.

Zambian Post (2014b). New Mayor urges tangible development, 5th April.

ZARD, Zambian Association for Research and Development (1990). 'Woman Know Your Place, The Patriarchal Message in Zambian Population Song.' Longwe, S., and Clarke, R. eds.

Zimba, J. (2012) Lacking Amidst Amongst Plenty: The Story of Manyama, Solwezi Today, 6, 2, February, p. 12.

Zimba, J. (2014). 'The two faces of Solwezi'. His blogspot.

Zwaan, J. C.; Seifert, A. V.; Vrana, S.; Laurs, B. M.; Anckar, B.; Simmons, W. B.; Falster, A. U.; Lustenhouwer, W. J.; Muhlmeister, S.; Koivula, J. I.; Garcia-Guillerminet, H. (2005): Emeralds from the Kafubu area, Zambia. *Gems and Gemology* 41, 116-148.