Universiteit
Leiden
The Netherlands

Foreign direct investment and poverty alleviation: the case of Bulyanhulu and Geita gold mines, Tanzania

Nyankweli, E.M.

Citation
Nyankweli, E. M. (2012). *Foreign direct investment and poverty alleviation: the case of Bulyanhulu and Geita gold mines, Tanzania*. Leiden: African Studies Centre. Retrieved from https://hdl.handle.net/1887/20160

Version:	Not Applicable (or Unknown)
License:	Leiden University Non-exclusive license
Downloaded from:	https://hdl.handle.net/1887/20160

Note: To cite this publication please use the final published version (if applicable).

Foreign direct investment and poverty alleviation

Africa Studies Centre
African Studies Collection, vol. 44

Foreign direct investment and poverty alleviation

The case of Bulyanhulu and Geita gold mines, Tanzania

Emmanuel M. Nyankweli

Published by:
Africa Studies Centre
P.O.Box 9555
2300 RB Leiden
Netherlands
asc@ascleiden.nl
www.ascleiden.nl

Cover design: Heike Slingerland
Cover photo: Geita goldmine (Emmanuel Nyankweli)

Printed by Ipskamp Drukkers, Enschede

ISSN: 1876-018X
ISBN: 978-90-5448-119-5

© Emmanuel M. Nyankweli, 2012

Dedication

To my wife, Yasinta and son, Austin

and

I honour my mother
Maris-Stella and the Nyankweli family for their support

“For the LORD gives wisdom, and from his mouth
come knowledge and understanding”
(Proverbs 2:6)

Contents

List of tables *ix*
List of figures *x*
List of photos *x*
List of maps *xi*
List of boxes *xi*
List of abbreviations *xii*
Acknowledgements *xv*

1. SETTING *1*
   Background *1*
   The development of Tanzania's mining sector and changes in economic policy *2*
   Socio-economic issues *6*
   Demographic characteristics *7*
   The Lake Victoria Greenstone Belt and selection of the study area *8*
   Structure of the book *11*

2 FDI, POVERTY, CORPORATE SOCIAL RESPONSIBILITY AND CHANGING LIVELIHOODS *12*
   Foreign direct investment (FDI) *12*
   The concept of poverty *13*
   Corporate social responsibility (CSR) *15*
   CSR and poverty alleviation strategies *19*
   Theoretical links between FDI and poverty *20*

3 RESEARCH METHODOLOGY *23*
   Livelihood analytical framework *23*
   Research design, sampling and operationalisation *26*
   Research questions and operationalisation *28*
   Data sources, data collection and data analysis *32*
   Changing livelihoods in Sukumaland *36*
   Population, livelihood and poverty in mining neighbourhoods *42*

4 THE MINING CODE AND FDI PERFORMANCE IN TANZANIA *49*
   The evolution of Tanzania's Mining Code *49*
   Comparison of the 1979 and 1998 Mining Acts *52*
   Compensation for persons vacated from their land due to mine development *58*
   Various overlapping laws and acts that govern compensation *60*

Tax regimes in Tanzania *60*
FDI performance prior to the reforms *63*
FDI performance after the reforms *64*
Distribution of FDI in Tanzania's economy *65*
Sectoral distribution of FDI in Tanzania *66*

5 SOCIO-ECONOMIC IMPACTS OF MINING INDUSTRIES ON LOCAL NEIGHBOURHOODS *67*
Economic impact *67*
Social impact *73*

6 ENVIRONMENTAL AND HEALTH IMPACTS OF MINING OPERATIONS ON LOCAL NEIGHBOURHOODS *79*
Degradation of land and vegetation *79*
Water pollution *81*
Air pollution and noise *85*
Health impact *87*

7 CSR IN TANZANIA'S MINING INDUSTRY *94*
Introduction *94*
CSR policies in the mining industry *95*
Community development practice as a CSR approach to mining *96*
Socio-political context of community development *97*
BGML's CSR initiatives *99*
GGML's CSR initiatives *108*
Large-scale mining's expenditures for community development *116*

8 SUMMARY, CONCLUSIONS AND POLICY RECOMMENDATIONS *119*
Introduction *119*
The contribution of the gold mining sector in Tanzania *120*
Effects of gold mining on livelihood in the LVGB *123*
Corporate social responsibility and local economic development *129*
General conclusion *130*
Policy recommendations *136*
Further research *138*

Annex 1 *139*
References *144*

List of tables

1.1 Mineral exports, 1967-1989 *3*
1.2 Mineral exports, 1989-1998 *4*
1.3 Mineral exports, 1999-2007 *5*
1.4 Economic and demographic trends, 2000-2008 *7*
3.1 Districts, wards and villages involved in the study *27*
3.2 Criteria for respondent income categories *28*
3.3 Household distribution in income categories by village sample *29*
3.4 Research questions *29*
3.5 Ethnic diversity by mining neighbourhood *42*
3.6 Average family size by mining neighbourhood *43*
3.7 Gender distribution and highest education level of respondents *43*
3.8 Housing characteristics by mining neighbourhood *44*
3.9 Major sources of water by mining neighbourhood *45*
3.10 Major source of energy for cooking by mining neighbourhood *45*
3.11 Major economic activities in large-scale mining by mining neighbourhood *46*
4.1 Employment in the large-scale mining sector in Tanzania *58*
5.1 Government revenue accrued from the mining sector, 1997-2007 *69*
5.2 Mining sector contribution to overall national GDP, 2000-2008 *71*
5.3 Perceived ranking of social ills *74*
5.4 Mean expenditure per capita by category of item *77*
6.1 Land managed by GGML *80*
6.2 Areas with different categories of disturbed land *81*
6.3 Comparison of concentration of heavy metals at Nyakabale with standard concentrations in surface soils *82*
6.4 Comparison of concentration of heavy metals in sampled plants from Nyakabale with standard concentrations in plants *82*
6.5 The upper limits of a safe dietary intake of trace elements *84*
6.6 HIV/AIDS prevalence and new reported cases, 2002-2006 *88*
6.7 Reported cases of STD infections, 2002-2006 *89*
6.8 Reported cases of skin diseases, 2002-2006 *91*
6.9 Reported cases of diarrhoea, asthma, ear and eye diseases, and tuberculosis, 2002-2006 *92*
7.1 Large-scale mining expenditures for community development *117*
8.1 The positive and negative impact of FDI in the gold mining sector *131-134*

List of figures

1.1 a-b Pre-independence mineral production *3*
1.2 Trends of gold exports and value, 2001-2006 *6*
1.3 Sectoral contribution to overall GDP at factor cost *7*
3.1 Livelihoods framework *25*
5.1 Foreign exchange earnings from gold and traditional export crops, 1999-2008 *69*
5.2 Value of mining services and equipment procurement 2000-2004 *70*
5.3 Total mining taxes paid to the Government of Tanzania, 1997-2009 *72*
5.4 Taxes paid to the Government of Tanzania by four major mines, 2000-2007 *72*
6.1 HIV/AIDS trend in mining neighbourhoods *89*
6.2 a-d STDs trend in mining neighbourhoods *90*
6.3 a-e Diarrhoea, asthma, ear and eye diseases and tuberculosis trends in mining neightbourhoods *92-93*
7.1 Large scale mining's expenditures for community development, 1999-2005 *118*

List of photos

5.1 Makeshift shelters at BGML neighbourhood (Kakola village) *73*
6.1 a-b Structural damage due to increasing mining operations *87*
6.2 The human cost of gold and a deadly price to pay *91*
7.1 BGML's employees settlement scheme *100*
7.2 a-b Community housing project *102*
7.3 Kahama Education Enhancement Project (KEEP) *102*
7.4 Health infrastructure development project *103*
7.5 Community water pump *105*
7.6 a-b BGML's smallholder gardening projects *107*
7.7 a-c Nyankumbu girls' secondary school project *109*
7.8 Construction of a new operating theatre and extension of maternity ward at the Geita District Hospital *110*
7.9 GGML-AMREF VCT Centre at Geita bus station *110*
7.10 a-c Kilimanjaro Challenge and its beneficiaries *112*
7.11 Harelip patient before and after the surgery *112*
7.12 a-c Small-scale mining projects *113*
7.13 a-d Nyakabale agricultural project *114*
7.14 a-b Nyankumbu brick project *115*
7.15 GGML water pipeline *115*
7.16 a-b GGML sponsored sporting events *117*

List of maps

1.1 Geological map of the Lake Victoria Greenstone Belt *8*
1.2 Location of Bulyanhulu (BGML) and Geita (GGML) *10*

List of boxes

4.1 The Mine Development Agreement (MDA) *54*
5.1 Governance weaknesses concerning compensation for land allocated for mine development *75*
6.1 Forest clearance for mining activities threatens biodiversity *80*
6.2 Background to mass poisoning of North Mara villages *83*
6.3 Water pollution due to mining activities *84*
6.4 Livestock deaths blamed on suspected cyanide poisoning on Mtakuja River *85*
7.1 The community development approach of BGML and GGML *98*
7.2 Sundi's success story *107*

List of abbreviations

AD	Arusha Declaration
ADB	African Development Bank
AFGEM	African Gem Resources Limited
Ag	Silver
AGAL	AngloGold Ashanti Limited
AIDS	Acquired immuno deficiency syndrome
AMREF	African Medical Research Foundation
BPD	Building partnership for development
BGML	Bulyanhulu Gold Mines Limited
BHP Billiton	Broken Hill Proprietary – Billiton Mining Company
BOT	Bank of Tanzania
BUNGE	Tanzania Parliament
CBOs	Community Based Organisations
Cd	Cadmium
CD	Community development
CERES	Coalition for Environmental Responsible Economies
CET	Common external tariff
CO	Carbon monoxide
CPRC	Canadian Policy Research Centre
Cr	Chromium
CR	Community relations
CRSD	Community relations and sustainable development
CSO	Civil society organisation
CSR	Corporate social responsibility
Cu	Copper
DfID	Department for International Development
EIA	Environmental impact assessment
EITI	Extractive Industries Transparency International
ERP	Economic recovery programme
ESRF	Economic and Social Research Foundation
FDI	Foreign direct investment
FGD	Focus group discussion
FOREX	Foreign exchange
GATT	General Agreement on Tariffs and Trade
GDP	Gross domestic product
GDS	Genital discharge syndrome
GGML	Geita Gold Mines Limited
GNP	Gross national product
GRI	Global reporting initiatives
GUD	Genital ulcer discharges
H_2SO_4	Sulphuric acid
Hg	Mercury
HIPC	Heavily indebted poor countries
HIV	Human immunodeficiency virus

HLL	Hindustan Lever Limited
ICMM	International Council of Mining and Metals
ICSID	International Centre for Settlement of Investment Disputes
ILO	International Labour Organization
IMF	International Monetary Fund
IPC	Investment Promotion Centre
IRDP	Institute of Rural Development Planning
ISM	International School of Moshi
LAF	Livelihoods analytical framework
LDC	Least developed countries
LSM	Large-scale mining
LVGB	Lake Victoria Greenstone Belt
MDA	Mine Development Agreement
MITU	Medical Intervention Trial Unit
MMSD	Mining, mineral and sustainable development
MNCs	Multinational corporations
MOH	Ministry of Health
NBS	National Bureau of Statistics
NEMC	National Environmental Management Council
NGO	Non-governmental organisation
NIMR	National Medical Research
NMGM	North Mara Gold Mines
NO_2	Nitrogen dioxide
ODA	Official development assistance
OECD	Organisation for Economic Co-operation and Development
OHSEC	Occupational health, safety, environment and communities
OPM	Oxford Policy Management
PAF	Potential acid forming
Pb	Lead
PCA	Public Corporation Act
PID	Pelvic inflammatory disease
PPP	Purchasing power parity
PRA	Participatory rural appraisal
REPOA	Research on Poverty Alleviation
RING	Regional and International Networking Group
SAP	Structural adjustment programme
SHIRECU	Shinyanga Regional Cooperative Union
SMEs	Small and medium enterprises
SML	Special mining license
SO_2	Sulphur dioxide
SPSS	Statistical Package for Social Sciences
SSM	Small-scale mining
STAMICO	State Mining Corporation
STDs	Sexually transmitted diseases
TANESCO	Tanzania Electric Supply Company Limited
TCME	Tanzania Chamber of Minerals and Energy
TGM	Tulawaka Gold Mines
TIC	Tanzania Investment Centre
TNC	Transnational corporation

TRIM	Trade related investment measure
TZS	Tanzanian shilling
UN	United Nations
UNCTAD	United Nation Conference on Trade and Development
UNDP	United Nations Development Programme
UNIDO	United Nations Industrial Development Organization
URT	United Republic of Tanzania
US$	United States dollar
USA	United States of America
UTI	Urinary tract infections
UWABU	Ushirika wa Wakulima Bulyanhulu (Bulyanhulu Farmers'Cooperative Union)
VAT	Value added tax
VCT	Voluntary counseling and testing
VEO	Village Executive Officer
WB	World Bank
WGC	World Gold Council
WEDECO	Water and Environmental Development Company
WEOs	Ward Executive Officers
WHO	World Health Organization
WTO	World Trade Organization
Zn	Zinc

Acknowledgements

Although writing a PhD may be said to be an individual undertaking, I would like to acknowledge the support I received from of a number of individuals and institutions that contributed to the successful completion of this study. They are, however, not responsible for the mistakes, omissions or errors which remain in the final product. While it is difficult to mention all the individuals by name, I would like to take this opportunity to assure those whose names I fail to mention here that their contributions, in whatever form, were all greatly appreciated. First and foremost I am indebted to Teun van Dijk of the Management for Development Foundation (MDF) for facilitating my study through an organizational capacity building project, IRP 138 Phase I under the Netherlands Organisation for International Cooperation in Higher Education (Nuffic). I am grateful to Nuffic for the four-year research grant that enabled me to complete my PhD at the University of Amsterdam within the framework of the Netherlands' Research School for Resource Studies for Development (CERES). Second, special thanks are due my promoter Prof. dr. I.S.A. Baud (University of Amsterdam) and co-promoter Dr. A.F.M. Zaal (Royal Tropical Institute). They formed a great and inspiring team and I deeply appreciate their professional guidance, supervision and enthusiasm that led to the successful completion of this work. In one way or another, all two have inspired me in the course of my academic career. I will always be grateful to them for the guidance they gave me so I could reach this apex of academic achievement.

During my stay in the Netherlands, I benefited from Prof.dr. I.S.A Baud and Dr. Zaal's experience on research and development in general. Their informed critiques on various issues and their flow of arguments greatly enhanced the quality of this manuscript. I can only admire their patience, detailed comments and skilled editing on the initial drafts of this manuscript. In particular, I am heavily indebted to Dr. Zaal who provided me with crucial day-to-day supervision, guiding me with a lot of dedication and enthusiasm. In a way, he has been the backbone of this project during all its stages. I would like to acknowledge the institutional support I received from the Amsterdam Institute for Social Science Research (AISSR) and former Amsterdam Metropolitan and International Development Studies (AMIDSt). I wish to thank Gert van der Meer for facilitating my stay in the Netherlands. The AISSR (former AMIDSt) has always been an inspiring place to work and I would like to thank all the staff for the assistance they offered me in one way or another. In particular special thanks should go to

AISSR (former AMIDSt) secretariat (Marianne van Heelsbergen, Guida Morais, Puikang Chan and Barbara Lawa) who did everything possible to ensure my life in the Netherlands was comfortable.

Back in Tanzania, I am grateful to my employer, the Institute of Rural Development Planning Dodoma, for granting me a study leave and all the assistance I received. I look forward to continuing my teaching and research assignments there. Special Thanks should go to the Rector, Mr C.S. Lifuliro and his Deputies Dr. Sebyiga and Mr. Mdendemi for entrusting me to carry out this study. I would like to thank all my colleagues in the Department of Rural Development and Regional Planning, and in particular, the Head Dr. F.G. Hawassi and staff for their endless encouragement and support during the entire period of this study. Obtaining data at the mining neighborhood was a critical challenge by itself; I therefore would like to convey my appreciation to the government officials at the District Head Quarters, ward and village levels for facilitating my study. I also convey my thanks to GGML and BGML Community Relations and development staff for granting me access to work in their departments. Special thanks should go to Mrs Frida Kyesi, Simon Shayo and all the staff in the two departments.

My research assistants were invaluable: Isaack Makore, Mussa Beston, and Winnie Kapondya, who participated in surveys. I greatly appreciate all the work they did and the great moments we had together. The same goes for Ndayilagije Manage for the role he played in data entry. Special thanks are due to all of whom really made me feel at home, not only sharing good moments but also eating together, reminding me of the social nature of Tanzanians – in particular, the families of Kweba Bulemo, Chris Haule, Peter Hango and Vincent Tiishekwa. The good times we had together helped to ease the potentially lonely life of PhD scholar abroad. In addition, the company of my collegues B. Mulemi, I. Monnereau, M. Kraan, E. van Ewijk, N. Colanino, C. Zuccotti, I. Neefjes and C. Boon Ong, who kept me, going. Though they were on their own journeys, we shared experiences when things seemed to be reaching the end of the road. It is difficult to find the right words to express my gratitude towards my dear wife and friend, Yasinta, for shouldering the responsibility of taking care of our son, Austin, during the long periods of my absence. I extend my very sincere and special thanks to the two of them for their love, understanding, support and patience. Austin, you were born when I was miles away in the Netherlands. I hope that one day you will understand why papa was not there for you. Finally, I am very grateful to my Mum (Maris), my brother (Tino), my aunt and uncles, relatives and family friends and my respondents for their contributions to this study.

1

Setting

Background

Poverty alleviation is a major concern and challenge for many developing countries such as Tanzania. Poverty can be reduced mainly through achieving higher economic growth and ensuring that the poor benefit from this growth (Mbelle 2007; Raworth *et al*. 2008). According to Kabelwa (2006), there is evidence that Foreign Direct Investment (FDI) significantly contributes to economic growth, both in host and home countries. This is clearly noticeable in sectors with concentrated FDI; for example, in gold mining FDI has been an important engine of growth and has increased gold exports, while in banking it has contributed to the modernisation of the sector (Phillips *et al.* 2001; Kabelwa 2006; Cooksey 2011).

FDI has led to rationalisation of privatised enterprises increasing their competitiveness (UNCTAD 2003; Kabelwa 2003, 2004; Cooksey 2011). Kabelwa (2003, 2004) also observed that FDI contributed to improved transfer of technology and skills. The overall impact of FDI includes enhancing the inflow of external resources and change from a negative to a positive contribution of the balance between FDI inflows and profit remittances. Other effects include: the contribution of foreign affiliates in increasing overall exports and inflows of hard currency from various FDI sectors; increased share of FDI in capital formation and hence growth; and the diversification of the economy away from agriculture towards mining and services (Phillips *et al.* 2001; UNCTAD 2002). It is argued that with proper interventions such economic benefits can play a crucial role in the process of poverty alleviation. In general, FDI has become a significant force in both poor and rich economies because of its impact on economic and sociocultural development as well as livelihoods (Luvanga & Shitundu 2003; UNCTAD 2003, 2004).

The development of Tanzania's mining sector and changes in economic policy

The development of Tanzania's mining sector has three major periods: pre-independence, post-independence socialist and economic liberalisation (Cooksey & Kelsall 2011). These periods can be defined by policy changes and production trends. During the pre-independence era the mining sector was in steady production in terms of volume of minerals excavated, value and contribution to a gross domestic product (GDP). Production stagnated after independence and especially after the Arusha Declaration (AD) in 1967 when all mining operations were nationalised and mining's sectoral contribution to GDP became negligible (Lange 2006).

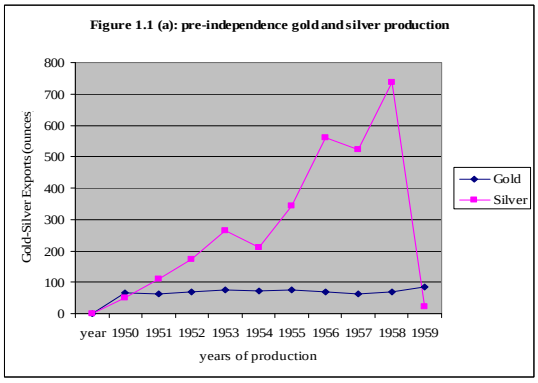
The state-owned State Mining Corporation (STAMICO) dominated all mining and mining-related operations, crowding out the private sector. Lack of capital, expertise and commitment – compounded by poor management – caused practically all mines to close down in the 1970s. The changes in mining policy of the late 1980s, legally allowing private companies and individuals to participate in mineral exploitation, led to a booming of mineral production and exports. The mining policy changes of the 1990s, which sought to attract foreign mining and exploration companies, produced an influx of FDI, the bulk going into the gold mining sector (Cooksey & Kelsall 2011).

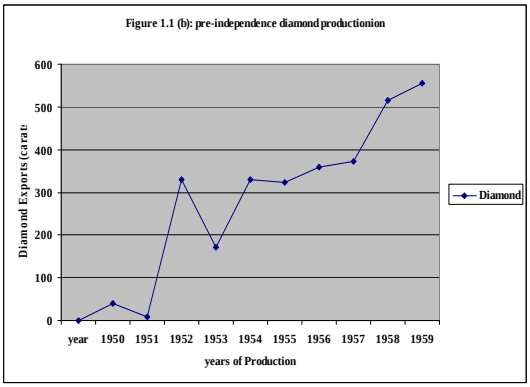
The pre-independence era

The pre-independence era refers to large- and small-scale operations of foreign owned mining companies during the colonial period (1885-1919 under Imperial Germany and from 1919 to 1961 under Great Britain). Mining operations were broad, from exploitation of precious metals to industrial minerals. Pre-independence mines included Sekenke, Geita and Mpanda for gold and Mwadui for diamonds. Mineral production increased consistently in this period, save the interruption during the Second World War (Mkinga 2006; Cooksey 2011). After the war, mineral exports kept increasing, and by 1959 mineral exports exceeded pre-war production levels. Between 1950 and 1959, a total of 3,005 carats of diamond, 0.7 million ounces of gold (22.4 metric tons) and 3 million ounces of silver were produced (Kulindwa *et al.* 2003; see Figures 1.1 a & b).

During the same period (1950-1959), gold production increased by 30% while diamonds reached highest production increases with 1,359%. The increase in gold was attributed to increased production from Geita gold mine, while the expansion of Mwadui diamond mine led to the spectacular rise in diamond production (Chachage 1995; Lange 2006; Cooksey 2011). Outputs dramatically fell to negligible proportions just before independence, due to growing political and

Figures 1.1 a-b Pre-independence mineral production





Source: Mkinga (2006).

economic uncertainties, which discouraged large foreign investors, and the persistently low price of gold at the time (US$ 35 per ounce) (Sanga 2007; Lange 2006; Cooksey 2011).

The post-independence socialist era

The change in economic policy in 1967 and the resulting nationalisation of all large companies considerably affected the mining sector (Cooksey & Kelsall 2011). Private mining – by private persons or companies – was prohibited and only STAMICO could conduct exploration and mining for all minerals. From 1967 to 1989, total annual mineral exports fell from US$ 35.2 million to US$ 16.9 million, a reduction of 52%. The exports of other commodities grew from US$ 208.8 million to US$ 363.3 million, an increase of about 74% (see Table 1.1). Mineral production data for 1961-1966 were not reflected in this analysis due to poor storage of information.

Table 1.1 Mineral exports, 1967-1989 (US$ million)

Year	Mineral exports	Other exports	Total exports
1967	35.2	208.8	244.0
1970	16.7	229.3	246.0
1980	38.9	469.1	508.0
1985	19.6	305.1	324.7
1986	21.5	324.9	346.4
1987	13.4	333.4	346.8
1988	12.8	359.2	372.0
1989	16.9	363.3	380.3

Source: Kulindwa *et al.* (2003).

Liberalised economy

In the late 1980s, Tanzania made a U-turn in its economic policy and permitted the private sector to participate in mining operations: both private companies and individual miners could operate legally. The minerals that were previously being smuggled started to flow through legally authorised purchasing institutions (Kulindwa *et al*. 2003; Lange 2006). Many Tanzanians pursued artisanal mining, thus increasing mineral exports, mainly gold. Between 1990 and 1998, mining production and exports concerned largely precious minerals from artisanal mining (see Table 1.2). Artisanal mining or small-scale mining refers to a subsistence mining practice. The miners are not officially employed by a mining company but work independently instead. They mine or pan for gold using their own resources. Small-scale mining includes enterprises and individuals who employ workers for mining, generally using hand tools and mining seasonally (for example, crops are planted in the rainy season while mining is pursued in the dry season). However, they also frequently travel to mining areas and work year-round.

Table 1.2 Mineral exports (mainly from artisanal miners), 1989-1998 (US$ million)

Year	Mineral exports	Other exports	Total exports
1989	16.9	363.3	380.3
1990	26.3	272.7	399.0
1991	44.0	286.1	330.2
1992	53.2	243.8	397.0
1993	41.5	325.7	367.2
1994	37.0	482.3	519.3
1995	15.2	646.0	661.2
1996	29.6	738.4	768.0
1997	27.6	689.5	717.1
1998	22.6	653.6	676.2

Source: Kulindwa *et al.* (2003).

In 1991 and 1992, mineral exports constituted 13% of Tanzania's exports, earning the country US$ 44 million and US$ 53.2 million respectively. Although mineral exports increased during the era of economic liberalisation, the volume of mineral exports from Tanzania remained negligible compared to other mineral exporting countries. After a period of aggressively pursuing FDIs produced results, large-scale mining companies entered in the late 1990s and significantly increased mineral exports (Mkinga 2006). More than 50% of the total mineral exports came from seven large-scale mines: four gold mining companies

(BGML, GGML, Golden Pride [T] Ltd and North Mara Mines Ltd), one diamond mining company (Mwadui) and one Tanzanian mining company (AFGEM Merelani Mining Ltd) (Mkinga 2006). With the involvement of large foreign companies in mineral production, the export of minerals steadily increased in volume, value and as share of the contribution to GDP.

In 1999, mineral exports generated US$ 85.6 million (16% of all exports), in 2000 US$ 181.9 million (27% of all exports), while in 2001 they brought in US$ 302.2 million (39% of all exports). In 2002, mineral exports accounted for 43% of all exports and brought in US$ 383.8 million. The trend continued in 2006, with mineral exports earning US$ 836.9 million or 48% of all exports, and 2007 with US$ 886.5 million earned or 54% of all exports (Table 1.3).

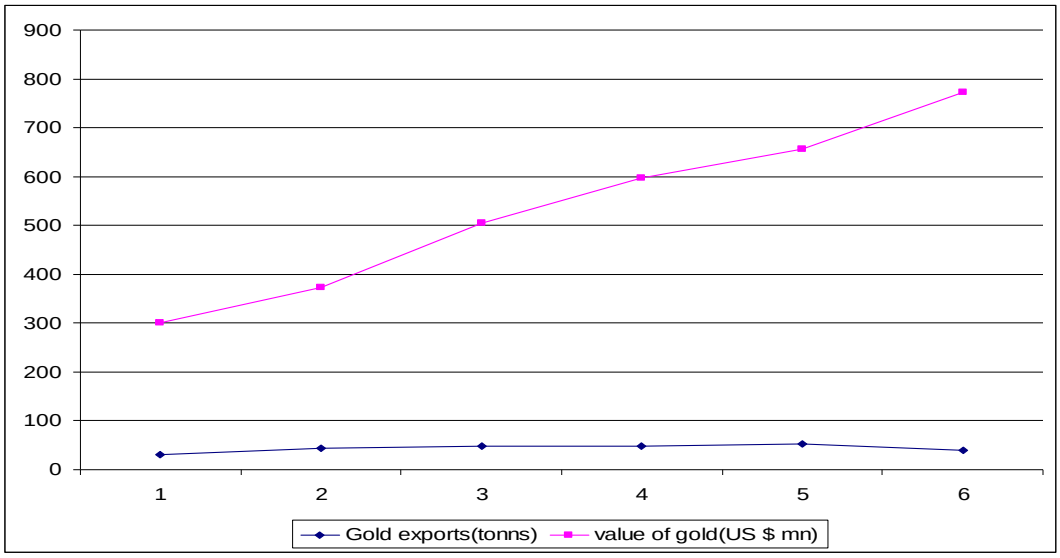
The gold mining sector has been growing faster than any other FDI-supported sector (URT 2005). Consequently, Tanzania is among the leading gold producers in Africa, in third place after South Africa and Ghana. Gold exports have increased almost three-fold in terms of value, from US$ 300 million (30 metric tons) in 2001 to an estimated US$ 800 million (39 metric tons) in 2006 (Figure 1.2). The contribution of the mineral sector to GDP grew from 1.7% in 1999 to 3.5% in 2005 (URT 2006). This impressive performance of the sector is the inspiration for this study, which seeks to explore the impact of the achievement in mining on the national economy and the livelihood in the local communities around mining projects as well as on poverty reduction.

Table 1.3 Mineral exports, 1999-2007 (US$ million)

Year	Foreign exchange earnings (export)	Mineral export	Gold export	% mineral contribution to foreign exchange	% gold contribution to mineral export
1999	543.3	85.6	40	16	46.50
2000	663.2	181.9	121	27	66.25
2001	776.4	302.2	257	39	84.98
2002	902.5	383.8	341	43	88.87
2003	1,129.2	552.2	499	49	90.37
2004	1,473.1	686.5	629	47	91.62
2005	1,676.3	711.3	656	42	92.16
2006	1,743.0	836.9	786	48	93.97
2007	2,021.0	886.5	763	54	86.06

Source: Tanzania Economic Surveys, 1999-2007.

Figure 1.2 Trends of gold exports (in tons) and value, 2001-2006 (US$ million)



Note: Numbers 1, 2, 3, 4, 5 and 6 on the X-axis represent years 2001, 2002, 2003, 2004, 2005 and 2006, respectively.
Source: Tanzania Economic Surveys, 1999-2007.

Socio-economic issues

Between 2000 and 2008, the economy grew faster than the population, from 4.0% to around 7.0% GDP real growth rate while per capita GDP increased from US$ 550 to US$ 1,100. The inflation rate has remained in single digits, gradually falling from 8.8% in 2000 to 7.0% in 2008 (Table 1.4).

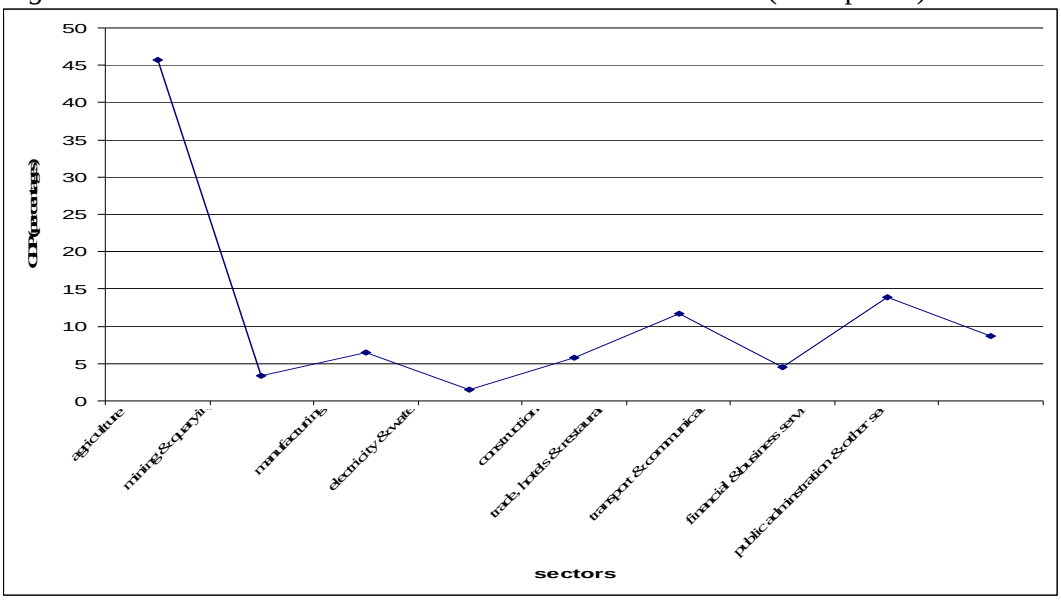
Tanzania's economy is heavily dependent on agriculture, which accounts for about 66% of merchandise export and is a significant portion of GDP (over 45% in 2008) (Figure 1.3). At the same time, it employs between 75% to 80% of the rural population; they cultivate the land by hand using crude tools (Mbelle 2007). However, the impressive growth of the economy is not enough to reduce poverty. It is marred by high levels of poverty at household level, both in urban and rural areas (Maliti & Mnenwa 2008). Nearly 40% of the population fall below the poverty line for basic needs and 19% fall below the poverty line for food (NBS 2002). Ninety percent of the citizens live with less than US$ 2 per day (*Ibid*.). In 2008, life expectancy at birth was a modest 51.4 years and the HIV prevalence rate stood at 8.8% (Table 1.4). As economic growth is central to poverty reduction and social development, it is essential to understand how FDI in the gold mining sector (which accounts for a large portion of export and GDP) contributes to poverty reduction at grass root level.

Table 1.4 Economic and demographic trends, 2000-2008

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Population (million)	35.3	36.2	37.8	35.9	36.6	36.8	37.4	39.3	40.2
Population growth rates (%)	2.57	2.61	2.6	1.73	1.95	1.83	1.83	2.09	2.07
GDP real growth rate (%)	4.0	5.2	5.0	5.2	5.2	5.8	6.8	5.8	6.9
GDP per capita (PPP, US$)	550	710	610	630	600	700	700	800	1,100
Population living below poverty line (%)	51	51	51	36	36	36	36	36	36
Inflation rate (%)	8.8	6.0	5.0	4.8	4.4	5.4	4.3	5.9	7.0
Life expectancy at birth (years)	52.2	51.9	51.7	44.5	44.3	45.2	45.6	50.7	51.4

Sources: NBS (2002), BOT (2007), Madulu *et al.* (2007).

Figure 1.3 Sectoral contribution to overall GDP at factor cost (2010 prices)



Source: URT (2007).

Demographic characteristics

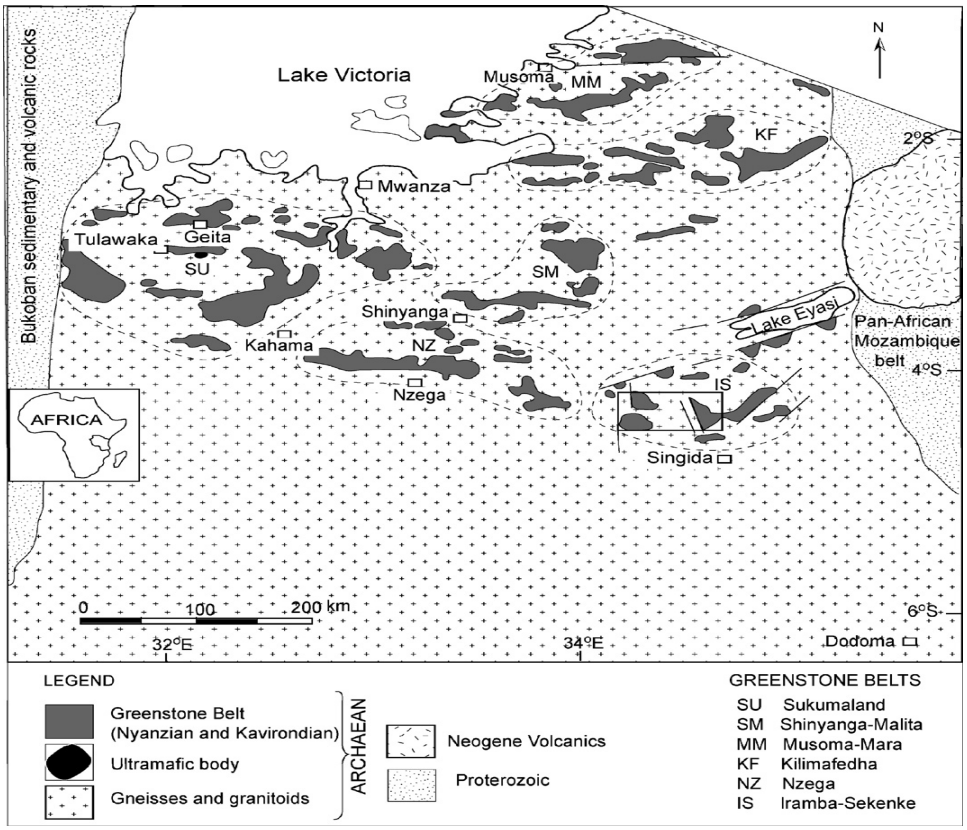
Estimated at 35.3 million in 2000, Tanzania's population was projected to rise to 40.2 million by the year 2008 (Table 1.4). Population density had increased from 26 people per square kilometre in 1990 to 39 people per square kilometre in 2008, a 50% increase. The population distribution is influenced by a number of factors, such as access to social services, climate, availability of land and access to reliable economic activities.

Population growth rates have been consistently high in Tanzania for over 40 years, with greater fluctuation in the last decade. From 2.6% in 1967, they reached an all time high of 3.2 in 1978, gradually declining to their lowest 1.7% in 2003, and then starting along another upward trend reaching 2.1% in 2008 (Table 1.4). This population growth rate is high compared to the international average (Madulu *et al.* 2007).

The Lake Victoria Greenstone Belt and selection of the study area

The Lake Victoria Greenstone Belt forms a granite-greenstone terrain of the Tanzania craton (Barth 1990; Borg *et al.* 1990). It stretches from the north-west to the central part of the country. The belt comprises six greenstone belts of the *Archean* type known for their high potential for gold in Australia, Canada and South Africa (Borg *et al.* 1990). These are the Shinyanga-Malita (SM), Kilimafedha (KF), Musoma-Mara (MM), Nzega (NZ), Iramba-Senkenke (IS) and Sukumaland (SU) greenstone belts (Manya & Maboko 2008; Map 1.1).

Map 1.1 Geological map of the Lake Victoria Greenstone Belt (adapted from Borg & Shackleton 1997)



This study focuses on the Sukumaland (SU) Greenstone Belt which consists of an inner arc and outer arc of volcanic origin (Davidson 2001). The two arcs are bound and intruded by granites. The inner arc is made up of a mixture of mafic and felsic volcanic rocks, hosting rich gold deposits they are the sites of the Bulyanhulu and Tulawaka mines respectively. The banded iron formation and sediments dominate the inner arc and hosts deposit for the Geita and Golden ridge mines (*Ibid*.). SU Greenstone Belt is the subject of this study because it hosts Bulyanhulu Gold Mine Limited (BGML) and Geita Gold Mine Limited (GGML).

The name Sukumaland Greenstone Belt comes from the Sukuma ethnic group which resides in this area (Borg *et al.* 1990). The SU Greenstone Belt is situated to the south of Lake Victoria between Mwanza and Kahama. Its high gold mining potential has attracted extensive research, prospecting and exploration work in the area (Borg & Shackleton 1997; Manya & Maboko 2003; Messo 2004; Mtoro 2007). This was followed by the opening of large-scale mining activities and several gold rushes by small-scale miners. The influx of mining activities has significantly altered the living conditions due to changes in land use regimes, displacement of communities and population surges. This study seeks to explore these changes in living conditions in the wake of increasing mining activities in the SU Greenstone Belt. BGML and GGML are chosen because they pioneered in large-scale mining in the late 1990s. Moreover, there are extensive experiences, initiatives and effects that have accumulated between 1999 and 2007 and can now be explored.

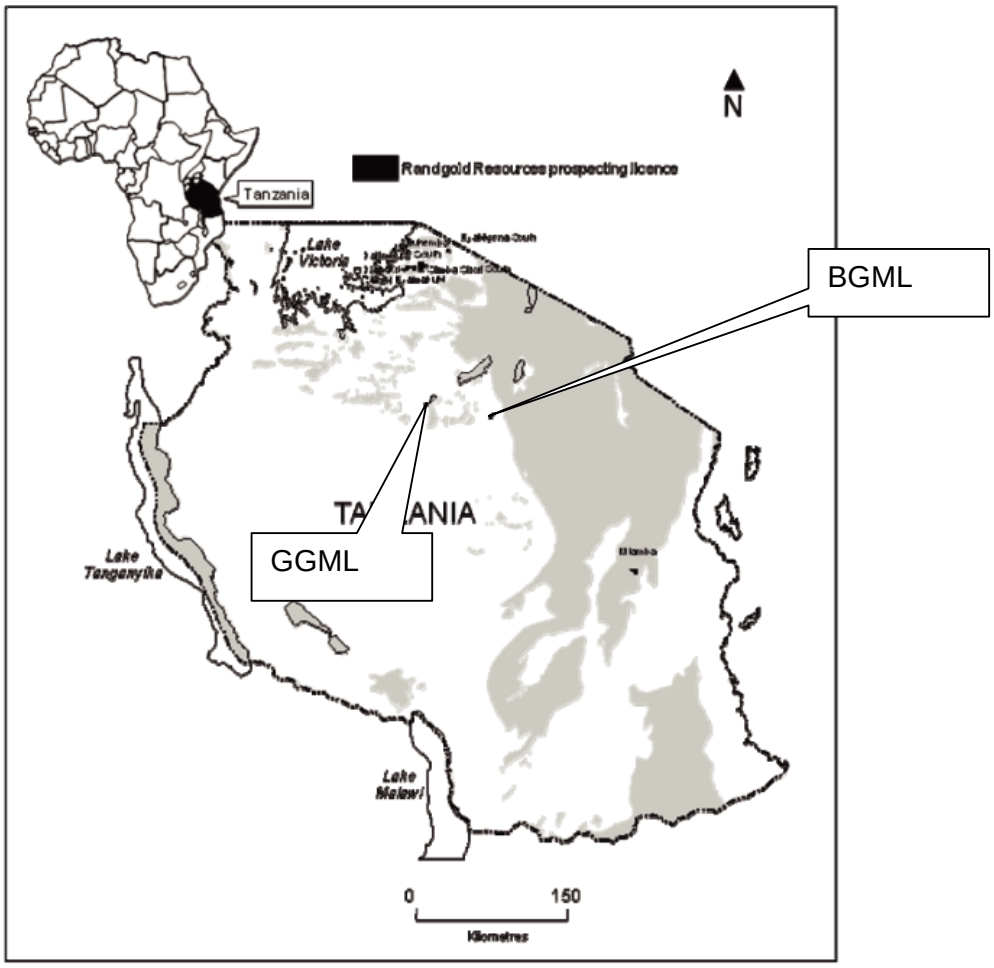
Bulyanhulu Gold Mine Limited (BGML)

The Bulyanhulu Area of Kahama District (western part of central Tanzania) is located 153 kilometres from Mwanza and about 56 kilometres from the southernmost point of Lake Victoria (Map 1.2). It is the home of Bulyanhulu Gold Mine Limited. Established in 2001, it is Tanzania's largest underground gold mine fully owned by Barrick Gold Corporation of Toronto, Canada (van Campenhout 2002). Valued at US$ 280 million during construction, it is insured by the World Bank Private Sector Insurance, the Multilateral Investment Guarantee Agency (MIGA) and the Canadian Government's Export Development Corporation (EDC) They issued about US$ 345 million in political risks guarantees to commercial banks and operators of the mine (Lissu 2001). According to Kabelwa (2003), Barrick's investment in the mine is estimated at US$ 610 million. The majority of its 1,913 employees are Tanzanian (1,710 or 89%). It has gold reserves of 13.2 million ounces with an annual production capacity of 300,000 ounces of gold, in addition to other minerals like silver and copper (URT 2008a). Its lifespan is estimated at 30 years.

Geita Gold Mine Limited (GGML)

Geita is situated in north-western Tanzania, 25 kilometres from the southern shore of Lake Victoria (Map 1.2). Mining in Geita began many years ago; the previous major operation was the Geita Underground Mine, which operated between the 1930s and 1960s (Stephen & Kamugisha 2004; Joukoff *et al.* 2004). It is the site of Geita Gold Mine Limited (GGML), an open pit large-scale mine established in 1999 and owned by AngloGold Ashanti Limited (AGAL). AGAL is the result of the merger between AngloGold Limited (50%) of South Africa and Ashanti Goldfields Company Limited (50%) of the United Kingdom (van Campenhout 2002). GGML's gold resources are estimated at 16.95 million ounces, with a projected annual output of 560,000 ounces. The AGAL investment was estimated at US$ 450 million in 2004. The mine employs 2,296 people; the vast majority (2,222 or 97%) are Tanzanian (URT 2008b). The mine has an estimated lifespan of 15 to 20 years (Yager 2004).

Map 1.2 Locations of Bulyanhulu (BGML) and Geita (GGML)



Structure of the book

This thesis is organised into eight chapters. Chapter 1 presents the background of the topic and the evolution of economic policy in Tanzania and its effect on FDI. It has also accounted for the historical trend of FDI during the pre-independence, post-independence and economic liberalisation periods. Chapter 2 presents the theoretical overview and analysis of data related to FDI, poverty, corporate social responsibility (CSR) and the change in living conditions in Tanzania, specifically looking at the mining neighbourhoods around BGML and GGML. Chapter 3 provides the research design and methods used in the fieldwork. It also presents the practical issues and challenges encountered during site selection, sampling, data collection, analysis and presentations. Chapter 4 provides insight in the legislative framework that governs Tanzania's mining sector. It analyses the Mining Code in relation to FDI performance. The Mining Acts, mineral policy, Land Acts and tax regimes are also covered in this chapter. Chapters 5 and 6 discuss the socio-economic impact of mining investments on local communities near the mining sites under scrutiny. They also provide details on health and environmental impacts. Chapter 7 describes the CSR policies of the BGML and GGML mining companies, including their initiatives and delivery approaches and the challenges they encountered in meeting CSR goals. Chapter 8 provides the concluding remarks of this thesis as well as lessons, research suggestions and policy recommendations.

2

FDI, poverty, corporate social responsibility and changing livelihoods

Foreign direct investment (FDI)

According to Eatwel *et al.* (1987), FDI is defined as the acquisition of assets outside one's home country, usually by securing ownership over the means of production – for example, factories or equity shares (particularly if they provide ownership or control over the firm and/or its resources). It includes equity purchases, reinvestment earnings and intra-company loans and debt transactions (Madete 2000). The country where the FDI originates from is known as the 'home' country; inward FDI accrues to the recipient or 'host' country.

Studies revealed that outward FDI enhances the economic performance of home countries through increased market access, income generation and increased competitiveness (UNCTAD 1995; Kumar 1995). Increased market access is achieved by removing host country tariff and non-tariff barriers (thus preventing rivals and potential rivals from taking over these markets); by obtaining host country guarantees that forbid other companies to produce or import similar products; and by enabling successful and efficient provision of goods and services that require close proximity between suppliers and customers. Income for home countries is generated through the repatriation of incomes earned by the factors of production transferred to the host country (profit, dividends and interests). Other sources include royalties and licensing fees for the technology and know-how transferred to those countries. Increased competitiveness is achieved from the combination of a number of factors: relocating production closer to cheaper resource bases (providing lower wages and proximity to raw materials); freeing domestic factors of production for other uses; circumventing distortions

introduced by exporting agencies to host countries; and strengthening innovative capacity by maintaining intensive research and development efforts to keep up with changes in technology (UNCTAD 1995; Kumar 1995). Theoretically, FDI is an economic activity that belongs to the trade section of balance of payments accounts.

The concept of poverty

Poverty is a multidimensional and multifaceted concept (Mitlin 2003; van Vuuren 2003). It is characterised by eight main types of deprivations: inadequate and unstable incomes; inadequate, unstable or risky asset bases (such as lack of education and housing); inadequate provision of public infrastructure (running water, sanitation, drainage, roads and sidewalks); inadequate provision of basic services; limited safety-nets for those unable to pay for services; inadequate protection of vulnerable groups through laws and rights; and powerlessness of vulnerable groups within political and bureaucratic systems (Baud *et al.* 2007).

Looking at these multiple deprivations it is apparent that poverty is not only defined by limited income. It is a manifestation of collective 'structures of constraint', which make it difficult for poor households to meet their needs and gain access to collective provisions of services (*Ibid.*). There is a cause and effect relationship that deepens poverty for individual households: deprivation in one area hinders households from meeting their needs in the other areas (*Ibid.*; Sen 1999). For instance, deficiencies in housing, drinking water and sanitations can lead to poor health. This in turn prevents the afflicted from working effectively and reduces their ability to earn income (Baud *et al.* 2007).

Hence, poverty is both a 'state' of being and a 'process' that narrows the individual's choices and well-being (Owuor 2006). In the classic debate, poverty is defined as unidimensional, i.e. poverty of income (Pradham & Ravallion 1998). From the income point of view, one may refer to poverty as either 'absolute poverty' or 'relative poverty'. Absolute poverty is based on estimated costs to satisfy minimal expenses for basic food and other necessities needed to sustain human life. According to the World Bank (2000), this minimum is estimated at US$ 1 per day in 1993 purchasing power parity. Relative poverty refers to a minimum level of consumption as proportion of total or average consumption (Owuor 2006; Rakodi 2002a). Households or individuals are considered poor when the resources they command do not enable them to consume sufficient goods and services to achieve a reasonable minimum level of welfare (Rakodi 2002a). Therefore, poverty is associated with situations where a person is deprived of certain basic needs, such as an economic state in which lack of income or consumption prevails. This so-called welfare approach depicts poverty in terms of income vs. expenditures and nutrition/consumption deficiencies.

Other forms of poverty are chronic and transient poverty (OECD 2001). Chronic poverty refers to those who are permanently incapacitated – usually due to physical or mental disability, long-term illness and/or old age – and thus cannot work or earn income. They remain poor for much of their lives and likely will bring up their children in poverty (CPRC 2004). On the other hand, transient poverty refers to those people who experience poverty for a limited time during which they are unable to provide for themselves, because they lost their job or are facing seasonal food shortages.

The literature deals with other forms of poverty in addition to income poverty: poverty of access and poverty of power. Poverty of access refers to the inability of the poor to access basic infrastructure and services, for example, communities in rural areas with unsanitary and insecure neighbourhoods lack basic necessities: adequate health facilities, safe drinking water, housing etc. At the same time, the poor also lack tenure security, their personal safety is endangered, and they are vulnerable to diseases and natural and man-made disasters. They have limited or no certainty that they can maintain their level of consumption if their income is reduced (Mitlin 2003). Poverty of power refers to the poor not having the ability to influence decisions in their settings and the abuse of their human and citizen rights. Because they are voiceless and powerless within their political systems and bureaucratic structures, their opportunities to access the entitled benefits are reduced (Odhiambo & Manda 2003).

The concept of poverty has been widening; today it includes additional aspects, such as deprivation, vulnerability, entitlements and exclusion. These concepts have been instrumental for analysing what makes one fall into poverty or why one remains poor. They have influenced the understanding and measurement of poverty as well as poverty alleviation policies. Poverty is associated with various deprivations that introduce insecurity in one's living and social environment. Deprivation occurs when it is no longer possible to reach a certain level of functioning or capability; therefore, defining a household as poor in terms of consumption may not cover all deprived households and individuals (Rakodi 2002a). Deprivation has physical, social, economic, political and psychological dimensions (van Vuuren 2003).

The widely accepted definition of vulnerability identifies it as increased insecurity of well-being for individuals, households or communities in the face of changing conditions in their environment (van der Geest & Dietz 2004). Vulnerability is closely related to access and control of resources or assets (described in the livelihood analytical framework). The more assets people have, the less vulnerable they are. It is linked also with survival (Frayne 2004). Therefore, poverty is not only characterised as lack of assets and inability to accumulate a portfolio of assets, but rather lack of choice with respect to coping strategies. Poverty also

implies susceptibility to crises, stress and shocks without the capacity to recover. In some cases the poor are forced to adopt strategies that enable them to survive but do not improve their welfare (Rakodi 2002a).

Entitlement refers to the complex ways in which individuals or households command resources; they vary between people and through time and are used to respond to shocks and stresses (Sen 1981, 1999). Availability of resources or means of subsistence does not automatically entitle an individual or household to use them. Entitlement must be enforced and an individual's or household's capacity to do so determines their control over resources or means of subsistence. Therefore, poverty can be defined as failure to exercise certain capacities that are important for the individual's or household's well-being. These failures can be dependent on social, cultural, political or environmental conditions and are location specific.

Exclusion is a state of ill-being and disablement or disempowerment and inability that individuals or groups experience. It is the lack of access to social security, employment, personal security, human rights and decent living (de Haan 2000). Not all members of society have equal access to social security and other safety nets – in particular the poor tend to be excluded (Kaag *et al.* 2004). Exclusion from social, political and economic institutions is part of a vicious circle in which exclusion limits the power to act, which in turn reduces the prospects for escaping from poverty and the ability to assert one's rights. Social inclusion is necessary for securing a sustainable livelihood (de Haan 2000).

Corporate social responsibility (CSR)

Defining CSR

In developing countries, FDI can potentially make an important contribution to the development of local economies (Ite 2004). By investing in resource-rich countries, multinational mining companies (MNCs) can bring a positive impact, especially through CSR initiatives that focus on sustainable development together with civil society organisations and the local communities. However, experience indicated that CSR is more often an outcome of public pressure arising from MNCs' violations of human rights, environmental pollution and labour infractions (Reynard & Forstater 2002). Jenkins (2004) has noted that CSR is the response to widespread and increasing criticism of the mining industry, calling it to pay serious attention to its environmental and social impacts.

CSR is a helpful conceptual framework for exploring the companies' corporate attitude towards stakeholders (Wheeler *et al.* 2002), i.e. how to strike a balance between the need to make a profit and diverse community demands, as well as the imperative to protect the environment. In this discussion, they recognise newly empowered stakeholders (e.g., local communities), identify their interests,

concerns and objectives and also recognise the need to balance or accommodate these different interests (Guerra 2002). CSR is a means for enabling companies to set their attitudes and strategies towards and relationships with stakeholders – be it investors, employers or communities – within a popular and acceptable concept. For example, CSR may include advancing cleaner production technologies and establishing foundations and trusts to provide social services to communities affected by mining operations, with mining profits providing the necessary funding for these activities.

CSR strategies to improve social impacts of multinational mining companies are also expected to positively affect profit margins, at least in the medium- to long-term (Holiday *et al.* 2002). Therefore, the International Council of Minerals and Metals (ICMM) has taken direct steps to secure commitments from its members to support sustainable development as a tool for enhancing shareholder profit. The quest for a win-win solution – achieving both the objectives of companies and the other stakeholders – is epitomised in the concept of partnership.

According to Fox (2004), CSR is an ambiguous phenomenon within the international development field. Some see it as a vehicle through which the private sector can contribute to poverty reduction and other social objectives; something that cannot be achieved by the government alone. The concept has attracted criticism for being insensitive to local priorities and potentially harmful to prospects for sustainable livelihoods. Civil society organisations view CSR as a voluntary activity. Also the European Commission (2002) described the concept as voluntary integration of social and environmental concerns in MNCs' business operations and their interaction with stakeholders. Others assert that CSR is often embedded within legal and regulatory environments, particularly when minimum standards are prescribed as good practice. Therefore, CSR is the enterprise's overall contribution (both positive and negative) to sustainable development as reflected by the World Bank's (2001) working definition:

> CSR is the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families, as well as of the local community and society at large (...).

Enabling environment for CSR

Fox (2004) observed that the CSR agenda is overwhelmingly shaped by actors from the north (often FDI home countries). It emerged in the globalisation discussion of the 1990s, fuelled by reports of environmental, labour and human rights abuses within operation and supply chains of large, high profile MNCs, usually based in the north but often operating in or sourcing from the south. The CSR agenda is entirely focused on large enterprises and is driven by NGOs, investors and regulatory authorities (Fox 2004). The practice does not look at

small- and medium-sized enterprises (SMEs), either as suppliers to large companies or beneficiaries of CSR initiatives. The literature suggests that there are three pillars necessary for providing a good enabling environment for CSR practices: the drivers for responsible business operations; the human and institutional capacities necessary to generate and respond to the drivers; and the tools of CSR (RING 2003; Fox 2004).

Carroll (1991) structured the different social responsibilities into a four-strata pyramid model (with economic, legal, ethical and philanthropic responsibilities) commonly known as 'Carroll's pyramid of CSR responsibilities'. The pyramid is set in a way that one kind of responsibility cannot be achieved in absence of those below it in the pyramid, thus emphasising the role of all stakeholders and corporations (Carroll 2004). 'Economic responsibilities' means doing what is required by global capitalism; 'legal responsibilities' refer to the legal requirements that the corporation has to fulfil before global stakeholders; 'ethical responsibilities' imply that the corporation follows what is broadly expected by global stakeholders as ethical behaviour; and finally 'philanthropic responsibilities' means to "do what is desired by global stakeholders" (Visser 2005: 489). According to Carroll (1991), the emphasis falls first on economic and legal responsibilities, followed by ethical and philanthropic responsibilities: "Economic performance undergirds all other responsibilities although the components are not mutually exclusive; it helps the manager to see different types of responsibilities are in constant tension with one another" (*Ibid*.: 490).

Empirical studies suggest that culture plays a key role in shaping perceptions of CSR responsibilities. Therefore, the ranking of priorities may differ from Carroll's framework, depending on geographic locations (Burton *et al.* 2000; Edmonton *et al.* 1999). Visser (2005) realised that CSR strata in the African pyramid are different from Carroll's pyramid: the economic responsibilities are the foundation, followed by the philanthropic responsibilities and then by legal and ethical responsibilities, respectively. According to Visser (2005), economic performance is given the highest priority because Africa suffers from a shortage of FDI and has only recently gained access to substantial FDI. Moreover, many African countries have high rates of unemployment. For example, only 43% of the African labour force is participating in the (formal) economy (ADB 2004). Poverty is also widespread: an estimated 70% of the population lives on less than US$ 1 and most countries are plagued by exorbitantly high external debt (*Ibid*.). Therefore, the economic contribution of FDI to economic growth is essential; hence, in most countries, both governments and communities highly appreciate this contribution of the business sector (Visser 2005). Crane & Mattens' (2004) remark that the economic responsibilities in the USA are strongly focused on profitability and returns to stakeholders also holds true for Africa.

Philanthropic responsibilities are the second priority for CSR in Africa (Visser 2005), for three main reasons. First, socio-economic needs in African societies are so large that philanthropy is a broad cultural norm. Second, it is considered the right thing to do by businesses. Companies realise that they cannot succeed in societies that are faltering, so philanthropy is seen as the most direct way of helping the communities in which businesses operate. The third reason is the foreign aid dependency syndrome of most African countries. For example, in 2002 sub-Saharan Africa received around US$ 19 billion in official development assistance (ODA), equal to US$ 28 per capita or more than double the average of US$ 11 for the rest of the world (ADB 2004). An ingrained culture of philanthropy persists in Africa. There are various activities that corporations can do as philanthropic gesture (Genest 2005). These are donations to charity institutions and working with non-profit institutions. Other activities include supporting educational programmes, medical interventions and development of infrastructures, such as roads, bridges and alternative energy sources (beyond the immediate needs of their direct stakeholders, i.e. labourers).

Legal responsibility in Africa scored a lower priority compared to the developed world. This is due to a poor legal infrastructure and the absence of independence, resources and administrative efficiency. Also, many African countries lag behind in incorporating human rights and other social issues into their legislation (Mwaura 2004). The weak influence of the law is clearly seen in widespread unethical practices, such as fraud and corruptions (Visser 2005). Ethical responsibilities have the least influence on CSR in Africa, attributed to the low level of corporate governance, widespread corruption and the lack of transparency in reporting revenues.

There are two main CSR tools: the Global Compact and Global Reporting Initiatives (GRI), which are discussed now.

The Global Compact

The Global Compact is a partnership between the United Nations, the business sector, the International Labour Organization (ILO) and major civil society organisations. Contrary to popular opinion, it is not a code of conduct; instead, it seeks to engage companies in the promotion of certain UN principles within the corporate domain (Ruggie 2002). The principles themselves are drawn from the Universal Declaration of Human Rights, ILO's Declaration on Fundamental Principles and Rights at Work, and the Rio Declaration on Environment and Development. Companies are encouraged to move towards 'good practices' as defined through multi-stakeholder dialogue and partnerships, instead of using their often superior bargaining position vis-à-vis national authorities (especially

in small or poor states) to secure more beneficial arrangements for themselves (*Ibid*.).

The Compact employs three instruments to achieve its aims. The first is the 'learning forum'. It is designed to generate consensus based on the understanding of how the company's commitment to the nine principles can be translated most effectively into corporate management practices. The idea is for the UN to publicise these norms, thereby providing a standard and putting pressure on industry laggards that are slow to comply.

The second instrument concern 'policy dialogues': the Compact generates shared understandings of the corporation's social responsibility when operating in countries afflicted by conflicts. This particular dialogue has explored how companies can conduct an impact assessment and reduce the risks that they contribute to fuelling such conflicts, achieve greater transparency in their financial transactions with the parties in conflict, and devise revenue-sharing regimes that benefit local communities. These dialogues play a normative role in the broader public arena and they directly inform the UN's own conflict prevention and peacemaking activities.

The third instrument is implementing 'partnership projects' in developing countries. The Compact contributes to capacity building through micro-lending, investment promotions, HIV/AIDS awareness programmes for employees in sub-Saharan Africa, sustainable alternatives to child labour, as well as various eco-efficiency actions and other dimensions of environmental management.

Global Reporting Initiative

The Global Reporting Initiative (GRI), established in 1997 and funded by the Coalition for Environmentally Responsible Economies (CERES), seeks to create measurable indicators for sustainability, in the same way that one can measure financial performance. The belief is that a system of measurable indicators will force companies to issue regular sustainability reports, as a tool to maintain the trust of their customers and society at large. GRI was successful in recruiting a wide variety of firms, and in 1998 GRI expanded from mainly dealing with environmental factors to working with economic (non-financial) and social sustainability indicators. As it develops, in order to remain up-to-date and relevant, GRI is continually being redefined (Willis 2003).

CSR and poverty alleviation strategies

Corporations tend to use two main types of poverty alleviation strategies. The first one is the 'profit strategy'. This strategy enables the company to explore the untapped market of low-income consumers by creating affordable goods and services with the expectation to realise profits by selling to these new low-income

consumers (London & Hart 2004). Using their resources and capabilities as a base, companies develop innovative products and/or services to match the needs of low-income consumers. The poor then will bring the wealth back to the company. For example, Hindustan Lever Limited (HLL), an Indian subsidiary of Unilever, has been extremely successful with this strategy in reaching out to the lowest level of the consumer pyramid (Ellison *et al*. 2002). HLL was not afraid to experiment with new types of distribution, using different partners to distribute its product, and also to support their efforts to acquire additional capacities (Balu 2001). The company has been able to generate over US$ 1 billion in revenues by serving this low-income market in India alone (Ellison *et al*. 2002).

The second strategy is a 'CSR strategy'. This is where the company has a social mission. This strategy uses the problems and challenges faced by low-income consumers as a starting point. The problems are critically analysed and solved with both parties reaping the benefits. The starting point of this strategy is the poor. The poor offer challenges and opportunities; subsequently, a social strategy is created to solve these problems. The products and services will bring wealth to the low-income consumer and then transfers back to the company that supplies it. The difference with the profit strategy is that problems and challenges for low-income consumers are solved while both can benefit from the relationship. These types of companies combine the passion of a social mission with an image of business-like discipline, determination and innovation (Clayton *et al*. 2006). The central criterion for success of CSR is the company's mission-related impact, not simply pure profit (Dees *et al.* 2001a). By working with low-income consumers as partners in problem solving, the company can focus on and tackle the problems' root causes, not just the symptoms. Understanding the dynamics of poverty is necessary for devising effective poverty alleviation strategies. Although an increasing number of studies have explored economic opportunities for the poor, there is scant information on CSR strategies in Tanzania's mining sector. Chapter 7 explores and analyses the CSR practices of mining companies in more detail.

Theoretical links between FDI and poverty

Gold mining as a sub-sector of mining can be linked theoretically to poverty alleviation by identifying its contribution to the development of local economies by means of, for instance, supply and distribution chains, trading, and outsourcing (Blomström & Kokko 1997, 1998; Markusen *et al.* 1997; Kabelwa 2006). The resulting income and employment opportunities may help reduce poverty levels, particularly income poverty of local communities. The extremely poor who participate in these activities can directly reduce their poverty. In addition, the poor can reduce their non-income poverty if the earnings from gold mining activities

are used to support health and education services, thus improving their well-being and capacities.

Also, gold mining provides an important opportunity for diversifying local economies. It can develop poor and marginal areas, which have limited export and diversification opportunities. Remote areas are particularly attractive for business activities because of their cultural, wildlife and landscape values. In addition, poverty may be reduced as gold mining creates new employment opportunities and income-generating activities. Sometimes the earnings from mining activities are used to build new infrastructure and social service facilities or to improve existing facilities, which improves the social well-being and enhances the capacities of the poor.

Compared to other non-agricultural activities, gold mining offers a plethora of labour-intensive and small-scale opportunities, employing a large proportion of the local population. Thus, gold mining offers opportunities in terms of employment creation and income generation and can address the needs of vulnerable groups (e.g., women and rural poor communities).

On the other hand, there are also potentially negative economic effects from gold mining. These include large-scale transfer of revenue out of the host country and exclusion of local businesses, inhabitants and products. The result is loss of income for the displaced (Kabelwa 2006; Luvanga & Shitundu 2003). Generally, it is possible that the poor gain little direct economic benefit from FDI (gold mining) while bearing many of the costs and hence fail to experience a reduction of their poverty. Previous FDI development plans tended to ignore the potential negative impact. In the FDI planning process in most Southeast Asian countries in the 1970s and the 1980s, it was assumed that any economic gains to local communities would more than compensate any losses inflicted by FDI. Little attention was given to the impact that the diversion of natural resources for FDI would have on local communities or the environment (while the benefits accrue outside of that environment) (Shah & Gupta 2000). Currently, most FDI plans include environmental impact assessments (EIAs) to avoid or minimise adverse impacts on the environment. The underlying idea is to mitigate costs while maximising the economic benefits to the poor and the community as a whole.

It is theoretically possible to reduce poverty by engaging in FDI activities. However, due to processes of globalisation, modernisation and information technology diffusion, the poor may not automatically reduce their poverty through foreign investment activities (gold mining). Comprehensive impact assessments are generally neither well developed nor methodologically sound. It is also worth noting that gold mining is a complex industry driven by the private sector and often by multinational companies. These actors may have little or no interest in ensuring that poverty is alleviated among the local population. There are also

leakages: importing skilled labour and luxury products, repatriation of profits by multinational companies, and largely using marketing, transport and other services based in the home country. From a poverty alleviation perspective, it is crucial to determine how much profit is retained in the host country and whether it is spent on goods and services for poor communities. This leads to the following research questions to be considered in this thesis:

(a) What is the contribution of the gold mining sector in Tanzania?
(b) What are the effects of gold mining on livelihoods in LVGB?
(c) What are the links between gold mining and local economic development?

3 Research methodology

This chapter presents the research design employed during the fieldwork and the data sources used to achieve the research goal of analysing the direct and indirect impacts of FDI in gold mining on local livelihoods and the regional economy. The data-gathering methods included semi-structured interviews, focus group discussions, key informants, reviewing existing mining legislation, and informal conversations.

Livelihood analytical framework

A better understanding of the impact that gold mining FDI has on local livelihoods can be gained through the livelihood analytical framework (LAF). Livelihoods are understood as a collection of activities performed on a daily basis with the goal of meeting basic needs, such as food, housing and securing monetary income. These activities include production of crops, rearing livestock, making handcrafts, seasonal and permanent wage labour as well as remittances. In other words, it is the interaction of livelihoods strategies with the natural environment in a particular spatial identity called region (de Haan 2000a).

Livelihoods are secured through a set of assets and resources called capitals; multiple capitals are combined in different strategies, thus generating different types of livelihoods. The actual combination differs for each case, but there are several commonly distinguished types: human capital (labour, also including skills, experience, creativity); natural capital (land, water, forests, pastures and minerals); physical capital (food, stocks, livestock, jewellery, equipment, tools and machinery); financial capital (money in a savings account at a bank, loan or credit); and social capital (referring to the quality of relations among people and institutions, such as government, NGOs, CSOs and mining companies). Following the concepts of entitlement (Sen 1981), claims (Chambers & Conway 1992)

and access (Blaikie *et al.* 1994), it is important for actors to have the ability to use capitals at reasonable costs, when needed and desired. Land can be rented, water and forests can be communally owned; a plough can be borrowed or hired; food can be obtained – but the main issue is securing access to capital.

According to Blaikie *et al.* (1994), each social group, household and individual has a unique capitals access profile, which depends on the rights granted by tradition or law and the way these are exercised. The actors – social groups, households and individuals – decide on the basis of their access profile. The capitals access profile is not set in stone and may change over time.

Livelihoods can be considered sustainable when the outcome of the processing of different capitals is meaningful in terms of providing adequate well-being and viable in terms of protecting people against shocks and stresses. Shocks are violent and occur unexpectedly (e.g., flood or earthquake), while stress is less violent but lasts longer (e.g., drought or seasonal shortages). Both impact the five forms of capital. Shocks and stresses can result from economic hardship, war, diseases and rapid population growth. Livelihoods do not only depend on access to capitals but also on how the use of these capitals is framed in the wider social, economic, political and cultural contexts (Dreze & Sen 1989).

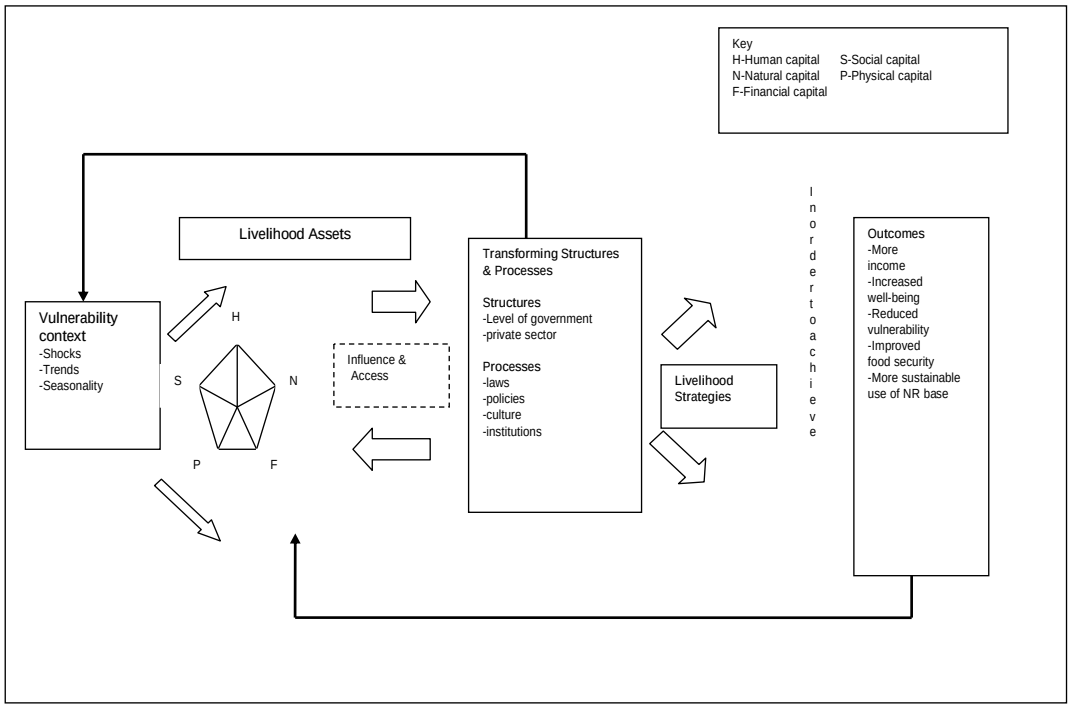
Livelihoods are becoming increasingly diverse, as individuals and households pursue multiple occupations, also in multiple areas (de Haan & Zoomers 2003). Livelihoods analysis enables exploration of the social-ecological systems or the relationship between people and their environment (Ingold 2000; Davidson-Hunt & Berkes 2003). Such an analysis relates to choices and strategies, capacities that people have to enhance their quality of life and their capabilities to confront their social-ecological conditions and improve their well-being. The analysis sheds light on the limitations that households and individuals may face in realising their livelihood choices in changing contexts. Further, it helps to highlight the diversity and heterogeneity of livelihood strategies at local level and illuminates their relations with macroeconomic policies.

It is understood that the gold mining industry is complex and dominated by multinational companies. This does not mean that it automatically causes disruptions of livelihoods and non-sustainable pathways of local livelihoods. Rather, the mining benefits can be harnessed and utilised to improve community's abilities to cope with and shape appropriate livelihoods strategies. For example, by providing employment opportunities and implementing CSR initiatives, gold mining companies can enhance community access to better health services, education, safe water supply and improved infrastructure. This ultimately improves household income and thus diversifies rural livelihoods. This complex web of assets, access, capacity and capability offers the households and local institutions layers of resilience that enable them to deal with waves of adversity (Glavovic *et*

al. 2002). Resilience implies the capacity of a system to deal with disturbances, ultimately reorganising in order to retain the same functions, structure, identity and feedbacks prior to the disturbance (Walker *et al.* 2004).

Ellis (2000) summarised livelihoods as a set of assets (natural, physical, human, financial and social), activities, and access (mediated by institutions and social relations). The combination of assets, activities and access enables (or hinders) household to develop various livelihood strategies and each has different outcomes (Figure 3.1). A livelihood strategy refers to plans or techniques for securing means for living, and it is influenced by a given cultural context. Livelihood strategies include nurturing social networks and engaging in community-level work, which builds social capital and enables diversity to be secured and sustained (Bebbington 1999; Sen 1999).

Figure 3.1 Livelihoods framework



Source: Adapted from Ashley & Carney (1999).

The household as unit of research and analysis

Scientific research on Africa often considers the household as the basic unit of social analysis. However, as the ongoing scientific debate indicates, the concept of the household is rather complicated and difficult to combine into one clear definition (van Vuuren 2003). Variations between communities make it more

complex (Corbett 1988). Van Vuuren, Corbett and also Chant (1998) questioned whether the search for a universal definition of household was feasible or desirable. Households are not 'natural' units with fixed forms and meanings across space and through time but are socially constructed and inherently variable (*Ibid*.). The term 'household' covers a wide range of residential forms, groupings of people and functions, thus making it impossible to devise a universal definition of 'household' (Beall *et al.* 1999).

Evolving through multiple life cycles, households change shape and form over time. Conventionally, households are defined as spatial units characterised by shared residence and daily reproduction, primarily cooking and eating. Madulu (1998) described the household as a unit comprising a person or group of persons who live together in the same compound/homestead (but not necessarily in the same dwelling unit), have common housekeeping arrangements and answer to the same head of the household. The head of the household is a person living in the same household that is acknowledged by the other members as its head. This person holds primary authority and responsibility for household affairs, primarily economic and cultural (*Ibid*.). However, in the context of mining neighbourhoods, the above definition of household is not really satisfactory because some members may spend significant amounts of time in other areas far away from the mine (e.g., cultivating crops, going to school or simply residing at another location). Such households are more fluid than the standard household, and to determine membership one would have to take into consideration where various members live most of the year and how they themselves define their primary household (Potts 1997). In this context, Foeken & Owuor (2008) speak of 'multi-spatial households' and 'multi-spatial livelihoods'.

What constitutes a household? In an attempt to capture the spatial dimension highlighted above and to answer to the needs of this study, a household is defined as a unit comprising (1) all individuals who at the time of the survey were considered to be resident in the same house or compound as the head of the household, and (2) the family members living in the rural area/home or in the city in as far as they had an impact on the household's activities (production, consumption, reproduction and livelihood). Despite changes in lifestyles and living arrangements resulting from mining investments, the household is still an important socio-economic unit. The household is an important unit of analysis in livelihood, poverty, vulnerability and social security research (Dietz & Mulder 2005).

Research design, sampling and operationalisation

The research was conducted in two mining sites within the Lake Victoria Greenstone Belt, the GGML and BGML neighbourhoods, located in Geita and Kahama districts respectively. The mining sites were purposively selected from the Su-

kumaland *(SU)* Greenstone Belt (see Chapter 1 and Map 1.1). BGML is located in Bugarama Ward and is surrounded by seven villages, while GGML is located in two wards, Kalangalala and Mtakuja, and harbours 13 villages. The villages considered in the study were those within a 20 kilometre radius from the mining sites; four villages were sampled from each site: Nyakabale, Nyamalembo, Nyankumbu and Ihayabuyaga in GGML, and Ilogi, Bugarama, Igwamanoni and Kakola in BGML) (Table 3.1).

Table 3.1 Districts, wards and villages involved in the study (%)

District	Ward	Village	% of households in the survey (N=322)
Geita	Kalangalala	Nyankumbu	20.5
		Ihayabuyaga	13.0
	Mtakuja	Nyakabale	10.9
		Nyamalembo	6.5
Bugarama	Bugarama	Ilogi	6.2
		Bugarama	14.6
		Igwamanoni	15.8
		Kakola	12.4
Total			100

Source: Survey data, 2008.

The respondents at GGML were selected through stratified random sampling. An equal number of respondents were chosen from each of the four villages involved in the study, whereby the households were categorised in three groups according to prosperity (high, medium and low income), as identified by community members in focus group discussions at the beginning of the survey. Each income category had an equal number of respondents (60). Thus, the total pool of respondents who participated in the survey for GGML is 180. The same type of selection was used for BGML.

In both locations, respondents were identified based on the level of prosperity of their household (Table 3.2). A high-income household was defined as a household having a substantial capital for conducting business (shop, renting house[s], pub and/or large herd of livestock). A low-income household was defined as one depending on casual labour, does not own a house and works for food (locally known as ‘hand to mouth’ or *kijungu jiko* – meaning that if they do not work they cannot eat that day). A medium-income household was character

Table 3.2 Criteria for respondent income categories

Criteria	Low income	Middle income	High income
Capital (business scale)	Petty business (50,000-500,000 TZS)	Medium scale (500,000-5,000,000 TZS)	Large capital (5,000,000-10,000,000 TZS)
Labour	Casual labourers (selling labour to other groups)	Hiring low-income persons	Hiring both low- and middle-income persons
Assets	Few	Moderate	Many
Land tenure	No land or very small plots of land	Own small plots of land	Have larger plots of land
Housing	Live in makeshift or temporary houses	Permanent housing and/or renting	Permanent houses and own rental houses
Employment	None or informal petty activities	Employed in companies or own medium-scale business	Self-employed and own a large business
Political influence	Less influential	Moderate	Influential
Social services	Inadequate access	Moderate access	Adequate access

Source: FGD, October 2007.

ised by an average income and most of such households are made up of employees of the mining companies (FGD, October 2007).

The ward executive officers and respective village executives were instrumental in providing guidance in and information on locations within their areas of jurisdiction. At the end of the survey, 322 respondents were successfully interviewed, whereby 21.7% were from the high-income group, 34.8% from the medium-income group and 43.5% from the low-income group. Observations indicated that in some villages – especially in BGML (Ilogi, Bugarama and Igwamanoni) – members of the high-income category refused to participate in interviews, stating that they had participated in several similar interviews in the past but have yet to see any practical use from the results. This incident did not harm the overall results, as similar responses were captured through key informants and focus group discussions (Table 3.3).

Research questions and operationalisation

The overall research goal is to analyse the direct and indirect impacts of gold mining FDI on local livelihoods and the regional economy. To achieve this goal, the thesis aims to answer three major research questions, which are further subdivided into subquestions (see Table 3.4 and also Annex 1).

Table 3.3 Household distribution in income categories by village (%)

Village	High income	Medium income	Low income
Nyakabale (N=35)	8.6	68.6	22.9
Nyamalembo (N=21)	33.3	61.9	4.8
Nyankumbu (N=66)	33.3	15.2	51.5
Ihayabuyaga (N=42)	81.0	11.9	7.1
Ilogi (N=20)	0.0	10.0	90.0
Bugarama (N=47)	0.0	51.1	48.9
Igwamanoni (N=51)	0.0	31.4	68.6
Kakola (N=40)	10.0	45.0	45.0
Total (N=322)	21.7	34.8	43.5

Source: Survey data, 2008.

Table 3.4 Research questions

Research questions	Sub-research questions	Question variables
(a) What is the contribution of the gold mining sector in Tanzania?	(i) How does gold export fare as far as national income is concerned? How much foreign exchange trading is realised from the sector compared to other sectors of the economy?	- Gold export versus other export products - Export trends between 1999-2008 - Other intangible benefits
	(ii) **Taxation**: What are the minerals related tax systems and revenues in Tanzania?	- Types of taxes for gold - Tax policy agreements for mineral resources - Royalties - Corporate taxes - Land taxes - Lease rental - Comparative analysis of pre-reform and post-reform mining legislation
	(iii) **Revenue**: How much revenue accrues from gold mining and from what sources?	- Estimates of revenue - Sources of revenue - How are the revenues administered - Public perceptions of gold mining revenue
	(iv) **Employment**: How much opportunity does the sector offer, in contrast to small-scale mining? What is the nature of the employment opportunities generated by the sector?	- Skills and technology transfer - Direct and indirect employment

>>>>

Research questions	Sub-research questions	Question variables
	(v) **Income**: What are the income differences between large-scale and small-scale mining?	- Income differences between LSM and SSM
(b) What are the effects of gold mining on livelihoods in LVGB?	(i) How is the livelihood of the community in the LVGB?	- Perception of livelihood among the local communities - Attributes of livelihoods of local communities - Perception of poverty
	(ii) What are the perceived socio-economic impacts of gold mining on local communities?	**Local communities and migrants** - Income (employment or unemployment) - Housing - Family organisation (relocation/networks) - Prostitution - Crime rates - Drug abuse - Migration - Change of land use.
	(iii) How has gold mining changed local livelihoods?	- Accessibility to livelihood assets - Livelihoods strategies - Land use - Crop choices - Land alienation
	(iv) What shocks and stresses are associated with mining activities in LVGB?	**Environmental** - Land degradation - Loss of vegetative cover - Land conflicts - Shortening of agricultural fallow systems - Bio-diversity (birds, animals and plants) - Water pollution - Dust (palatability to livestock and people) - Chemical/gases/fumes - Black smoke - Noise (blasting, drilling etc.) and vibration (abortions in livestock, cracking of walls, stress and discomfort) - Vehicle and machine movements - Heap leaching - Ore and waste rock handling **Health** - Respiratory diseases (asthma, silicosis, tuberculosis, bronchitis, lung problems) - Eye diseases >>>>

Research questions	Sub-research questions	Question variables
		- Skin diseases (rashes) - Occupational hazards - Diarrhoea - Sexually transmitted diseases (in particular HIV/AIDS) **Socio-cultural and economic** - Prostitution - Income disparities (access to housing, food and other amenities) - Child labour - School leavers - Crime - High populations density - Land alienation
(c). What are the links between gold mining and local economic development?	(i) What are the mining companies' CSR strategies, delivery approaches and practices?	- Improvement of settlements (water, health, education, transport, sanitation) - Basic service delivery (private or commercial, public utilities, latrines, waste management, etc.) - Stimulate local economy (individual, micro-, meso- and co-operative development) - Business development services - Skill developments (training and vocational centres) - Warehouse facilities - Freight infrastructure - Local governance (land use conflicts, environmental control, balanced land use and maximising spill-over effect of mining investment, community participation)
	(ii) What is the state of public-private partnerships?	- Corporate social responsibility (practices, perceptions & its management) - Planning development and management of physical infrastructure (education, health, water, energy, roads, finance and credit, housing)
	(iii) How strong is mining companies' 'crowding effect' on other institutions in LVGB?	- Linkages between local government, community based groups and private sector in managing existing resources, jobs and promoting the economy of the area - Local control of resources - Human resource development - Institutional and physical capacities

Data sources, data collection and data analysis

Secondary sources

The majority of secondary sources for the literature review were found on the internet, specifically on websites dedicated to community development, CSR, corporate citizenship, FDI, and sustainable mining development. Some key websites include the Mining, Minerals and Sustainable Development (MMSD) project sponsored by the Institute for Environment and Development, AngloGold Ashanti and Barrick Gold Corporation. Also literature from the Ministry of Minerals and Energy, the Tanzania Chamber of Minerals and Energy, the University of Dar es Salaam, NBS, ESRF, REPOA, IRDP and the Parliament of Tanzania (BUNGE) was used. Tanzania's mining legislation was downloaded from the website of the Government of Tanzania.

Primary sources

Primary data was gathered through 322 semi-structured individual interviews and 10 focus group discussions. For each mining area, five focus group discussions were held, with six participants per group (in total 60 respondents). The respondents included representatives of the mining community, district officials, NGO representatives, ward executive officers, village executive officers and villagers.

Interviews

The semi-structured interviews – the primary data collection tool in my research – were based on a set of core questions, but allowed for some deviation from these questions in order to explore relevant sub-topics that emerged during the interview process. This approach allowed for efficient collection of qualitative data. The benefit of semi-structured interviews is that, in addition to a formal questionnaire, additional questions are derived during the interview from a series of core guiding questions (Table 3.4). Furthermore, semi-structured interviews enable the collection of identical bits of data and thus triangulation of data.

The question order proved to be very important for obtaining quality responses. Generally, the interview started with a general introduction of the person's background, including such details as profession and region of origin. Within the communities and the representatives of the mining corporations, the vast majority of respondents were very accommodating and provided carefully thought-out answers (except for select cases at Ilogi, Bugarama and Igwamanoni). Often, difficult topics – related to the effects of gold mining on the livelihoods of local communities – were introduced by the respondent themselves, indicating that it is an important subject that weighs on their minds.

However, several respondents employed in the mining companies and ministries were not so co-operative, refusing to meet face-to-face. On two occasions I

was asked to leave a written copy of the questions. The responses to the questions were poor, either left incomplete or entirely blank. On another occasion, I was given a copy of the 1998 mining legislation and instructed that I could find all answers to my research within. Fortunately, these were only a few isolated instances, and I was able to conduct interviews with other respondents in similar positions to compensate.

Key informants

According to Valadez & Bamberger (1994: 81), "[A] key informant is an individual who, as a result of his or her education, experience, or physical or social position in a community, has access to information about the functioning of society, the habits of its people, or their problems and requirements". Also in my research, key informants – teachers, village executive officers and former small-scale miners – were an essential element of the research process. As active members of the community, they could provide information on issues of concern to the Sukuma, including the impact of large-scale mining on their neighbourhoods. In the beginning phase of the research process, the contribution of other key informants from the district authorities in Kahama and Geita district headquarters helped me set the cornerstone for the thesis.

Case studies

Recording individual experiences of older members of the community was central to my analysis of the influence of large-scale gold mining on rural livelihood of LVGB residents. I intended to locate persons who were small-scale miners prior to the recent reforms as well as other community leaders who were involved in community relations with mining companies. Initially, I expected to interview older respondents; however, through the course of the research I discovered that most respondents (and therefore most adults) had some experience in mining activities. These case studies enabled me to ascertain the dynamics of large-scale mining and how communities were affected by this new environment.

By selecting the case study approach, I could uncover the history, everyday activities and relationships between different actors in mining neighbourhoods. I employed different interview techniques and analyses to construct the cases. Smith (1997) has argued that analysis of interviews should focus not only on motivations and reasons, but also social identities and how these are constructed within the social settings in which people live and work. Case studies of aspects of everyday life reveal social dynamics and the complexity of ongoing social processes. They highlight how everyday life is patterned by social relationships and the networks to which people belong (Vijfhuizen 1998). According to Yin (1989), case studies are generally a preferred strategy for 'how' and 'why' ques-

tions, when the researcher has little control over events, and when the focus is on contemporary phenomena within a real-life dynamic context, which are constantly changing – even while conducting the research. Techniques used in case studies include gathering of life histories (biographical and oral history interviews), such as analysis of crucial life experiences (Plummer 1997), as well as analysis of social networks (Mitchell 1969). Also, focus is placed on how networks (especially in the web of kinship) evolved over time and how different households, state agencies and relationships interlock.

The approach of this study focuses on changing lifestyles (which is part and parcel of reforms in the mining sector) and how they affected livelihoods in GGML and BGML neighbourhoods. I also sought to establish close daily contact with people from these neighbourhoods, in order to have a better context for the data gathered from interviews (Spradley 1997). The thesis also focuses on taking account of events associated with large-scale mining development and the typical daily realities in mining neighbourhoods, which was accomplished through the in-depth interview approach (as described by Bolding [2005]).

Focus group discussions (FGDs)

I organised several focus group discussion sessions with a variety of stakeholders: youth from Bugarama village, former small-scale miners, local business persons, individuals involved in community politics and management as well as employees of large-scale mining companies. Gathering participants for focus groups was easier than I originally anticipated. In Kakola village, it was a matter of sitting down with the businessmen for evening coffee. Six men formed the discussion group, but others who were listening from a distance also contributed their views from time to time providing a valuable contribution (their interruptions sometimes clarified a point that was exaggerated or underemphasised). I met with youth in Bugarama village at the local shop where they often gather. After a few minutes, several young persons agreed to participate in the group discussion, and over 40 other youths listened in. When visiting Ilogi and Igwamanoni villages, group discussions included members of the community that had raised various community issues in the village chairman's office. This included village leaders, farmers, mine employees, former small-scale miners, and *mama lishe* (women food vendors).

At first, I was apprehensive about the venue – the village chairman's office – for the focus group discussions, but in both cases I found that the respondents felt comfortable expressing their opinions on sensitive subjects. (This can be explained by the fact that the village chairman acts more as elected facilitator than as an authority figure.) The same strategy was used in GGML, arranging meet-

ings and discussions in coffee places, local pubs and village offices at Nyakabale, Nyankumbu, Ihayabuyaga and Nyamalembo.

Field experiences

Prior to my departure in the field I anticipated several limitations that potentially could hamper my research effort: the language barrier (I do not speak Sukuma), obstacles inherent to being an outsider, the minimal budget, transport difficulties and the reluctance of representatives of the mining industry to meet with me. For the most part, the above concerns were overcome or proved unfounded. The language barrier did not prove to be a major obstacle. Having lived in Sukumaland (Mwadui Mine Shinyanga) during my primary schooling, I had prior knowledge and experience with the community, which made it easier to communicate ideas in a simplified manner. However, it was my hosts (former IRDP students working in Geita and Kahama district councils) that proved to be invaluable in facilitating communication. They acted as Sukuma language and cultural interpreters during interviews and assisted me in finding transport and accommodation. With regards to overcoming the obstacle of being an outsider, my assistants introduced me to the local government authorities, who in turn introduced me to the community members and helped organise meetings.

Means of transport included public minivans, hired motorcycles and local *dala dala* bicycle transport. Arriving on bicycle proved quite amusing to local residents and served as icebreaker upon arrival. Staying in local guesthouses also proved useful as it allowed me to stay among the communities and engage in informal discussions at the nearest pubs and evening coffees in the village centres. Mining and government officials were reluctant to meet because during the fieldwork period (from October 2007 to January 2008) mining was a hot topic in the public domain and in parliament. This was due to the signing of a new contract for the Buzwagi mining project in London by the Minister of Mining and Energy. This was contrary to the promise given by the ruling party's presidential candidate during the 2005 electoral campaign that no additional mining contracts would be signed until existing mining legislation was reviewed, in order to assure win-win solutions. Thus, the mining agenda was dominated by critics of the government, including opposition members of parliaments. I was in a difficult situation and I even thought of changing my research subject: every official I approached for my study seemed to shy away. I decided to remedy my approach by starting to work with the community instead of officials and mining company representatives, until the discussion calmed down. This strategy worked well, and by late January 2008 it was easier to approach the same people who ignored me during my first visit for fear that my study was politically motivated.

Data analysis

The quantitative data was analysed using the programme Statistical Package for Social Sciences (SPSS) (Griffith *et al.* 1998), to generate the descriptive analysis of the situation of households. This data was supplemented with content analysis of information gathered through focus group discussions, key informant interviews, press clipping, desk reviews and observations. The descriptive analysis was explicitly developed in the context of applied research with the aim of presenting specific information needs and to highlight outcomes and offer recommendations (Lacey & Luff 2001). On the other hand, the qualitative data analysis provided clear and systematic responses by respondents on key concepts. It also helped identify the stages when a particular result was obtained from the data, which allowed me both to analyse the concept under scrutiny and to examine the new ones that emerged in the course of the research.

Changing livelihoods in Sukumaland

This section provides information on the livelihoods in Sukumaland as background to the rest of the study carried out. The Sukuma belong to the Bantu group of peoples who migrated to the area from around Lake Chad centuries ago. Trekking through the Congo River basin and across Lake Tanganyika, they finally settled south of Lake Victoria (Madulu 1998). At the beginning of colonial rule, the Sukuma had already started to intensify agricultural production due to population pressure (Meertens *et al.* 1995). Before independence, about 30,000 Sukuma had already settled in Geita and many others moved to the neighbouring districts of Kahama, Bariadi, Maswa and Meatu (Malcolm 1953; Meertens *et al.* 1995). The migration was motivated by the search of new agricultural land and pastures for livestock, a trend that continues to this day. Currently, the Sukuma agro-pastoral families occupy large areas of land in Kagera, Tabora, Rukwa, Mbeya, Pwani and Mtwara regions (Kikula *et al.* 1996). Because they are the dominant ethnic group in the Sukumaland Greenstone Belt, some knowledge of the social and political organisation of the Sukuma is instrumental to understand the changes in livelihoods in this area.

According to Gottfried & Lang (1961), the Sukuma preferred extensive agricultural methods to intensive, although the situation did change due to population pressure and growing awareness of market opportunities, especially for cotton. Until the Second World War their largely lived in a subsistence economy. Their lifestyle changed with exposure to improved transport, communication and the development of the local markets. The peasants used to grow millet, cassava (during periods of famine), groundnuts, sweet potato, maize, sorghum, rice, legumes, grams, sesame, sugarcane and vegetables. The literature recorded cattle populations of between 8 and 40 heads per household (Cory 1953). Goats, sheep and donkeys were also kept. Donkeys were used for transportation before the ad-

vent of modern means of transportation. Communal ownership and grazing of land combined with unrestricted individual or family ownership of stock resulted in low productivity and land degradation (Gottfried & Lang 1961).

The Sukuma were organised into chiefdoms, which were further grouped into districts. The chiefship was a hereditary office, although after the Second World War a system of elected chiefs was introduced. These elected chiefs came from a lineage of immigrant non-Sukuma families (Cory 1953). These outsiders were selected for their objective arbitration of Sukuma affairs and were thought to perform this function better than local Sukuma. The chief's powers rested in magical-religious functions and position as supreme judges. The chief also enjoyed considerable social status from his wealth as well as from his ability to administer the affairs of the people. He commanded wealth of resources from the cash income derived from crops and cattle. The chief's wealth was important for provision of services to his subjects and for entertaining functionaries and guests at his residence.

During British colonial rule, the chief's functions were administrative and judicial at the local chiefdom level, where he presided in courts and levied taxes. Initially he also served as liaison with the central government, but this was disbanded after the creation of the African Native Council, which took over many of the chief's deliberation and taxing function (Cory 1953). The chief had an advisory board consisting of members of a few important families, which were hereditary posts. The board had the important role of electing the chief's successor among the sons of the chief's sisters, but became less important after the introduction of the African Native Council. Sub-chiefs, on the other hand, increasingly gained in importance as the link between villages and their headmen. This post was created by the chiefs in order to have a man of authority between chief and headmen. The subchiefs could hold court in their subvillage; appeals could be carried higher up to the court of the chief.

The village or *gunguli* used to consist of scattered homesteads, rather than a closed village, and was ruled by a headman. In the Sukuma tradition these were sons of the chiefs who under rules of the matrilineal succession could not succeed their fathers. As the population surged these headmen were helped by assistant headmen. Also the headmen lost their jurisdiction after the establishment of the African Native Councils, even though they still had considerable influence in their villages. The headmen were assisted by elders (*ihane*), one of the major factions in the village the other faction being the youths (*elika*). The elders controlled the internal affairs of the village and even the headmen, but they were not elected representatives of the people. They exercised consultative roles during disputes and other matters concerning the village.

The *elika* were principally supporting each other in agricultural pursuits and were controlled by a leader, *nsumba ntale.* He was of great importance for anyone who wanted to have work done in the village. Just like the other local traditional functions, the role of the *nsumba ntale* also diminished due to political reforms introduced by the colonial government. However, the *nsumba ntale* could join the village council and coordinate his activities with the youth groups. In the past, the *nsumba ntale's* office was responsible for allocating agricultural land and organising social activities in the village (e.g., dances, funerals, weddings or mobilising for communal work). It was, therefore, important that the *nsumba ntale* was elected and did not inherit his post. He was elected by the village council or by members of various societies, after consultation with village elders.

At the household level, individual members cultivated grains, tobacco, cotton and other cultures (Cory 1954; Gottfried & Lang 1961). No one owned land outright, but all members of a household had the right to the harvested fruits of the land they cultivated (Gottfried & Lang 1961). Elders hinted that men had customary rights to harvest cassava and millet, while women had the rights to maize, sweet potatoes, groundnuts and beans. In polygamous households each wife had her own plot for growing food for her family, although she also helped her husband in the cotton fields. Agriculture was the mainstay of the family and the symbol of social identity.

According to Abrahams (1989), even after independence the Sukuma continued to live in well-organised neighbourhood groups, in order to help each other with work and maintaining law and order. The neighbourhood groups are commonly known as *nzengo* in Sukuma. They are organised at village or sub-village level and constitute an important source of labour. Neighbours collaborate in agricultural production in local cultivation or threshing teams which do the work for individual members in the team. Sometimes the team members also help each other during hardships and emergencies. The neighbourhood groups are under the *nsumba ntale,* who continues to exercise the function of organising assistance, agricultural work and social activities (Madulu 1998). Given the fact that Sukuma agriculture was both land extensive and labour intensive, the neighbourhood groups became very important institutions.

Agro-pastoralism continues to be the main mode of securing livelihood among the Sukuma, i.e. engaging in extensive agriculture and keeping large herds of livestock (Kikula *et al.* 1991). The hand hoe is the dominant agricultural tool, although ox ploughs and tractors are increasingly being used. The most important food crops are maize, millet, sorghum, cassava, paddy, sweet potatoes, various types of legumes and vegetables. The main cash crop is cotton, although it has not been very successful in recent years, due to declining prices and inefficient marketing (Mwaipopo *et al.* 2004). Recently, rice has been slowly supplanting

cotton as the cash crop of choice. Trade in agricultural products is flourishing, primarily by selling rice and purchasing maize.

The traditional land tenure system still dominates life in Sukumaland. Traditionally, all land belonged to the chiefs; subjects had right of use and enjoyed considerable security of tenure (Abrahams 1967). There are five ways to acquire land: (1) through clearing land and uncultivated areas of former forests; (2) by allocation of all relinquished land holding; (3) through inheritance from one's father or close kinsman; (4) by allocation of the land control authority (village council) in a cultivated area; and (5) through the land market (Madulu 1998).

The most common strategy for acquiring land is through inheritance. According to tradition the eldest son is granted the entire property, to prevent the fragmentation of the original holding (Wilemski 1994). Even with this type of inheritance, no one in the family is denied the right to use the land: the eldest son serves as primary custodian in absence of the elders. Inheritance procedures in Sukumaland are based on social solidarity that holds together the family and the community at large. It plays a substantial social role as system of economic security for the family (Madulu 1998). However, several factors strained the traditional land tenure system and consequently made it inadequate. These factors include population pressure, dwindling land reserves, scarcity of land and the market economy. Each factor had its unique influences, which conflicted with the traditional land tenure system (*Ibid*.).

According to Madulu (*Ibid*.), the 'villagization policy' gave village councils the authority to allocate land. This is the reason for the emergence of new subvillages with people moving back to their traditional farmlands. There are two forces at work: first, the desire of people to stay close to their farms, and, second, the intention of the original owners of the land to recover confiscated land. These forces were manifestations of population pressure on land allocation.

Madulu (*Ibid*.) observed that villagization increased population density and distance to the farms. This had re-shaped people's dependence on agriculture and farming practices, such as declining and/or abandoning land fallowing as a method of restoring soil fertility. People also acquired land through buying, hiring or borrowing from friends. Similarly, farmers who owned inherited land acquired more land by seeking land elsewhere through new forest and public land clearing (Madulu 1996). Most public land formerly used for grazing had been transformed into farmland due to high demand for land. Under these conditions peasants were not motivated to invest in intensive land use and land conservation, due to ambiguous land use rights (Madulu 1998). Fisher (2008) found that the severity of land scarcity in Sukumaland depended on the extent of population pressures and land use competitions between different social and economic activities. This is attributed to the lack of available arable land, poor land use plan-

ning, and land alienation to private and large-scale mining companies. This left peasants with an uncertain future as much of the arable land was being confiscated for mining purposes (Mwaipopo *et al.* 2004).

Traditionally, wealth differentiation was centred on agricultural performance. Large families were common – when food was ample – and many poor families sold their labour in exchange for food. Madulu (1998) observed that among the Sukuma life centred on the cultivation of cereals. Given the level of technology and type of tools, having a large family was important as it provided the labour required for producing sufficient quantities of food and also producing surplus for the cash market. However, in recent years, the literature indicates that many Sukuma are not comfortable with the conditions for agriculture and see no future in it (*Ibid*.). This is because of lack of capital, shortage of labour, land scarcity and old age as older people cannot afford the hard labour to earn living in agriculture. Ownership of assets – primarily referring to owning land, cattle and a house – has become an important indicator of personal success (*Ibid*.). In the Sukumaland, rich people are those who own large tracts of land and many head of cattle. Owning cattle offers enough capital for purchasing additional land or the possibility of hiring labour. Other measures of success include building a modern house or having a shop. These norms are a clear shift away from communal indicators of wealth and towards individual indicators.

It is apparent that the Sukuma are fast expanding into non-agricultural activities (Fisher 2008). There was some non-agricultural activity in the past, but only for a short period. Increasing scarcity of land and additional exposure of youth to the outside world (through education and travel) have contributed to the development and diversification of non-farm activities (Mwaipopo *et al.* 2004). There is clear competition between non-farm activities and farming for the available labour resources. The fact that labour availability is an important constraint on agricultural development in an environment of large families is enough to attest to growing competition between farming, livestock keeping, trading, education and mining (Madulu 1998; Mwaipopo *et al.* 2004). Transport and accessibility are additional preconditions for the development of non-farming activities (Mwaipopo *et al.* 2004). According to Madulu (1998), population growth has accelerated land fragmentation and diversification of activities. The demand for basic needs within the family also encouraged people to adopt non-farming activities (*Ibid*.).

Common non-farming activities include brewing beer, providing services (milling, retail shops, tearooms, selling firewood), selling second-hand clothes (*mitumba*), selling fish and vegetables (sometimes water), trading in livestock and livestock products (meat, milk, hides and skins, chickens, eggs etc.), and small-scale mining. In some cases, trading foodstuffs (maize, rice, cassava, millet

and groundnuts) is also considered a non-farm activity. Mining is an important non-farming activity for those with no other resources than their own labour. Most people who participate in mining are young primary and secondary school leavers and those who have extensive experience travelling to urban areas. Women also participate in non-farming activities, though often in traditional family roles, such as cooking, collecting firewood and fetching water. The non-farming activities related to those traditional roles are brewing, selling firewood, pottery, sewing, canteens, and providing food. Mining is done by migrants. Elders reported that the majority of youths now prefer to engage in trading rather than agriculture. Investment in livestock is declining while investment in housing improvements and trading is on the rise.

Large-scale mining companies are relatively new to the Sukumaland Greenstone Belt and are an important source of labour opportunities. Most miners are migrant men from other parts of the country and villages outside Mwanza and Shinyanga regions. Mining activities are considered destructive and have already resulted in serious environmental problems. The continual expansion of mining activities is depriving more persons of land, forcing them to shift from agriculture into small-scale mining, trading or provision of services to mining communities. Others migrate or work as labourers for other farmers.

Multinational mining companies, business entrepreneurs as well as many thousands of persons seeking a better life and riches are looking to profit from Sukumaland's mineral wealth (Fisher 2008). This process has transformed local market dynamics and is straining the country's governing capacity. Mining localities are associated with very mobile populations who connect distant regions with each other as well as make links between rural and urban areas, through mining, trade and consumption. The ethnic diversity of mining locations is a clear indicator of this connection (Table 2.1). The entry of multinational companies transformed the dynamics of mineral sector development and also increased pressures on land and mineral resources claimed by small-scale miners and on land inhabited by local communities. These processes continue to stir controversies and conflict: there is ripe tension over the distribution of revenues between central and local government and divisions between sections of local government. This tension has exasperated the already weak capacity of domestic governance structures and has contributed to poor governance processes. These changes have profoundly transformed the livelihood landscape in the Sukumaland Greenstone Belt.

Table 3.5 Ethnic diversity by mining neighbourhood (%)

Ethnicity	GGML (N=164)	BGML (N=158)
Sukuma	51.8	25.3
Muha	7.9	10.8
Mhaya	7.3	13.3
Chaga	7.3	16.5
Nyiramba	4.3	2.5
Zinza	3.7	5.7
Nyamwezi	3.0	6.3
Masai	2.4	5.7
Sambaa	1.8	3.8
Ngoni	1.8	1.3
Nyakyusa	1.8	0.6
Jita	1.2	2.5
Kurya	1.2	1.3
Luo	1.2	1.3
Gogo	1.2	n/a
Pare	0.6	1.9
Zanaki	0.6	0.6
Hehe	0.6	0.6
Total	100	100

Source: Survey data, 2008.

Population, livelihood and poverty in mining neighbourhoods

In analysing livelihoods and poverty issues in BGML and GGML neighbourhoods, it is important to understand the demographic structure of the household, because precisely the household is the nucleus of production and consumption in the community.

Demographic structure

According to the survey of the two selected mining neighbourhoods, average respondents' family size was 4.6 persons, with a standard deviation of 2.1 (Table 3.6). However, the neighbourhoods of GGML have a slightly smaller family size of 4.4 persons compared to the 4.7 persons of BGML neighbourhood. These figures fall slightly below the national average family size of 4.9 persons for mainland Tanzania (NBS 2002).

Table 3.6 Average family size by mining neighbourhood

Statistics	GGML (N=164)	BGML (N=158)	Total (N=322)
Mean	4.41	4.73	4.57
Standard deviation	2.232	1.842	2.053

Source: Survey data, 2008.

As Table 3.7 shows, the gender composition ratio was 1:0.18, i.e. 85% males and 15% females, which is contrary to expectations if one takes the 2002 census into account. This is because mining work is labour intensive and usually attracts young male migrant labourers (also some women engage in mining related activities).

Table 3.7 Gender distribution and highest education level of respondents (%; N=322)

Gender distribution	Male	85.1
	Female	14.9
Education level	None	0.3
	Primary	58.4
	Secondary, O-level	26.7
	Secondary, A-level	5.6
	College	5.9
	University (graduated)	3.1

Source: Survey data, 2008.

Almost two-thirds (58.4%) of the respondents were primary school leavers. Twenty-six percent had attended ordinary level secondary school, while very few advanced to secondary school (5.6%), college (5.9%) or graduated from university (3.1%) (Table 3.7). Three percent were illiterate, which is far below the national average of 25% (NBS 2002). This is attributed partly by the fact that the Household Budget Survey was six years prior to my 2008 survey and there have been some policy changes (namely, the national campaign for compulsory and free education for all school age children) as well as the fact that migrant workers travel extensively and have more knowledge and experience.

Characteristics of houses and housing facilities

The physical characteristics of houses provide an impression of the living conditions in mining neighbourhoods, while they also offer an indication of the income

that is invested in housing and infrastructure, such as water and electricity. Observations indicated that the proportion of houses with corrugated iron sheets, tiles and asbestos was 58.4%, while the rest were grass thatched. GGML neighbourhood faired better, as 68.9% of houses had corrugated iron sheet roofs and roughly a third (31.1%) had grass thatched roofs. BGML neighbourhoods were almost evenly split down the middle, 53.5% had corrugated iron sheet roofing and 47.5% had grass thatched roofing (Table 3.8). The apparent affluence of GGML residents compared to BGML residents can be explained by the urban nature of Geita Town and its vicinity. Inhabitants of Bugarama Ward (the location of BGML) seek to provide for their necessities from other towns: Geita, Kahama, Shinyanga and Mwanza. Thus, economic activity remains concentrated in GGML as more transactions and reinvestment are carried within it. The opposite is true for BGML; the residents earn money in the neighbourhood but spend it in other places including GGML. Yet, both neighbourhoods were above the national average of 43% for corrugated iron sheet roofing (NBS 2002).

Table 3.8 Housing characteristics by mining neighbourhood (%)

				'Modern'[1]	'Traditional'[2]
Mining neighbourhoods	BGML	House roofing materials	N=163	69.3	30.7
		House floor materials	N=162	32.3	67.7
		House wall materials	N=162	37.9	62.1
	GGML	House roofing materials	N=158	47.8	52.2
		House floor materials	N=155	34.6	65.4
		House wall materials	N=153	69.1	30.9

Notes: 1) Roof: iron sheets, tiles, asbestos; floor: cement, concrete, tiles; wall: bricks.
2) Roof: grass, mud; floor: earth; wall: mud and poles.
Source: Survey data, 2008.

In terms of wall building materials, 53.1% of houses were made of bricks while 46.9% were made of mud supported with poles. Also, these numbers are above the national average of 25% (NBS 2002). However, there was big difference between the two: the GGML neighbourhood had a majority of brick wall houses (69%), while the BGML neighbourhood picture was opposite, the majority of houses (62%) being constructed with mud and supported with poles.

About 40% of the population used water from unprotected sources, such as wells, springs, a dam or a lake. This is of particular concern in mining neighbourhoods due to risks from mercury and cyanide poisoning (Table 3.9). These figures are below the national average of 45% (NBS 2002). Again BGML neighbourhoods are worse off: nearly half of its population relies on unprotected water sources, compared to 24.4% in GGML neighbourhoods. In both communities, the overwhelmingly dominant source of fuel for cooking was firewood and charcoal (Table 3.10).

Table 3.9 Major sources of water by mining neighbourhood (%)

	GGML (N=164)	BGML (N=158)
Piped water in/outside the house	13.4	1.9
Piped water in the community	23.2	10.1
Private well (protected)	2.4	4.4
Public well (protected)	36.6	28.5
Unprotected source (well, spring, dam, lake, etc.)	24.4	50.1
Total	100	100

Source: Survey data, 2008.

Table 3.10 Major sources of energy for cooking by mining neighbourhood (%)

	GGML (N=164)	BGML (N=158)
Firewood and charcoal	95.1	96.8
Paraffin	0.6	2.5
Electricity	4.3	0.6
Total	100	100

Source: Survey data, 2008.

Regarding access to electricity, the figures are slightly higher than the national average of 12% (NBS 2002), with 16% of the population connected to the grid. No large difference was noted between GGML (15.8%) and BGML (16.5%) neighbourhoods. A few respondents indicated using diesel generators and solar panels. Electricity is mainly used for lighting and operating domestic appliances, such as refrigerators, radios and television sets.

Livelihood activities at the mining neighbourhoods

In both mining neighbourhoods people earn their livelihood in different ways, with mining-related work but also with crop farming, livestock keeping, beekeeping, remunerated employment, food services, shops and bars and other business activities. Apart from the BGML neighbourhood where employment in other sectors was reported at 23%, the majority of the population are farmers or peasants (36%) (Table 3.11). Residents of GGML neighbourhoods were observed to primarily depend on agriculture (54%) for their livelihood, with a preference for crop farming. The percentages for other non-agricultural activities were much lower; only business was more substantial with 15%, the rest falling under 10% (employment in mining 6%, food service 3% and small-scale mining 7%). Observations indicated that Livestock keeping is done in both neighbourhoods; however, the survey recorded only tiny percentages, 4% in BGML and 2% in GGML neighbourhoods. Generally, employment in the mining sector is less than 10% because the population lacks the necessary skills and the required higher level of education.

Table 3.11 Major economic activities in large-scale mining by mining neighbourhood

	GGML (N=135)	BGML (N=96)
Crop farming	54.1	36.5
Livestock keeping	2.2	4.2
Beekeeping	0.7	-
Employee in large-scale mining	5.9	3.1
Small-scale miner	6.7	2.1
Employee other than mining	3.7	22.9
Food service	3.0	3.1
Shopkeeper	3.7	5.2
Other business	14.8	10.4
Schooling	1.5	2.1
Disabled	-	1.0
Others	3.7	9.4
Total	100	100

Source: Survey data, 2008.

In crop farming, there was some diversification regarding both subsistence and cash crop generation. Food crops included maize, rice, sorghum, millet, potatoes, groundnuts and beans. The cash crops were cotton, sunflowers, sesame and tobacco. Rice and maize were increasingly becoming dual purpose crops, grown both for cash and food. Types of livestock included cattle, sheep, goats, poultry

and donkeys. Irrespective of the main declared occupation, people tended to identify themselves according to their main activity during a particular period. Observations indicated that the people's identity was influenced by such characteristics as economic activity, age and gender.

The Mining Code and FDI performance in Tanzania

The evolution of Tanzania's Mining Code

Tanzania is endowed with various kinds of minerals, such as metals (gold, iron, nickel, copper, cobalt and silver), gemstone (diamond, tanzanite, ruby and garnet), industrial minerals (limestone, gypsum, potassium, sodium, phosphate and kaolinite), energy-based minerals (coal and uranium), as well as gravel and sand. Despite these mineral riches, the sector was not making substantial contributions to the country's economy, which is commonly blamed on the absence of a business-friendly environment (starting from independence in 1961 and lasting up to early 1990s. During this period, the sector was not attractive to FDIs due to Tanzania's choice to pursue a state-led socialist economy. During the mid-1980s and late 1990s, the government reformed its policies and recognised the potential contribution of the mineral sector to economic growth and the role of the private sector in mining development. The chief goal of the reforms was to open the door to private investment in Tanzania's mining sector. Other objectives included putting in place modern mining practices, luring foreign investors to introduce cutting-edge technology into Tanzania's mining and to invest capital to finance development of the mineral industry.

The literature suggests that the reforms of Tanzania's economy occurred while IMF and World Bank imposed preconditions for debt relief (Butler 2004; Campbell 2004). These structural adjustment programmes (SAPs), the preconditions for debt relief, entailed a myriad of measures: privatisation of state-owned enterprises, emphasis on export-led growth, removal of subsidies, lowering or abolition of tariffs, dismantling of state marketing boards, liberalisation of foreign exchange regimes and reductions in public expenditure, to mention a few. Tanzania has been trying to adjust and liberalise its economy according to IMF and World Bank prescriptions since the mid-1980s. With huge external debts, Tanzania was highly dependent on multilateral aid and had little bargaining power with regard to debt relief conditions. Policy statements emphasised the government's commitment to create a disciplined and conducive environment for attracting FDI,

which should stimulate private sector-led economic growth (Campbell 2004). Mining was identified as the lead sector for FDI, with an anticipated growth of 10% of GDP (URT 1998). The SAPs introduced economic liberalisation in Tanzania. The privatisation of public sector industries effectively prepared the way for further liberalisation, which Tanzania had to implement to become a WTO member (WTO 2000).

According to Butler (2004), the World Bank played a major role as catalyst in the privatisation and reform of Tanzania's mineral sector. With the World Bank's Strategy for African Mining in place, there was an appropriate 'regulatory framework' (mining codes, mineral rights and licenses, mining development agreements), economic and fiscal policy, and institutional reform (introducing institutions such as the Ministry of Mines, the Geological Survey and the Environmental Office) (World Bank 1992). The World Bank had already indicated that African governments should primarily focus on securing long-term (10 to 20 years) tax revenues from private mining companies, also recommending that foreign and domestic companies receive the same treatment (*Ibid*.). The paper advised governments to specifically refrain from using mining as a potential source of employment creation and "should not be required to use or be offered incentives to use employment-increasing techniques" (World Bank 1992: 270). Rather, tax revenues from mining should be invested in employment-creation initiatives in other sectors of the economy.

The World Bank (2003) also diagnosed absence of accurate and up-to-date geological information and systems for managing this information, inadequate or non-existent environmental regulations and standards, and insufficient human skills and capacity to effectively administer the sector as the major bottlenecks that impede private investment in most resource-rich African countries.

According to the Bank, Tanzania's 1979 Mining Act was problematic on the following grounds. It did not offer private investors a risk-free investment climate. Furthermore, 'security of tenure' over mineral rights was not adequately protected within a legal framework. There was too much discretionary latitude vested to the Minister of Mines; this latitude created a climate of uncertainty, perceived arbitrariness, and the potential for bureaucratic delays. The act also contained national welfare-related 'performance requirements' for private mining companies, i.e. explicit commitments to employ Tanzanians and locally source goods and services, which were tied in prospecting or mining license. Other shortcomings included that the United Republic of Tanzania had the right to acquire a stake in private mining ventures and to make this right a precondition for granting prospecting licenses. There was no dispute resolution mechanism independent of the Minister of Mines; companies received inadequate services by the ministry, for example, inadequate geophysical data and environmental regula-

tions and standards that were not clearly defined. The 1979 Mineral Act was drafted as part of the state-led development strategy – outdated and inadequate for the changing political and macro-economic realities of the twenty-first century market-led economy (URT 1997; Butler 2004; Campbell 2004).

Further diagnosis of the mineral sector prior to the reforms revealed lack or absence of appropriate and consistent macro-economic policies that could provide an enabling environment for the private sector to invest in mineral development. Also diagnosed was a lack or absence of appropriate and consistent mineral sector policies oriented towards promoting private sector participation (URT 1997). It was also learnt that the competition among developing countries for private foreign investment implied offering 'competitive' incentive packages (in particular, tax relief) to attract investment. The 1979 policy statement gave priority to 'rationalising' and 'modernising' the small-scale or artisanal mining sector and diverged from World Bank prescriptions to harnessing the mining sector primarily as motor for economic development.

The World Bank's *Review of Legal and Fiscal Frameworks for Exploration and Mining and Mining Sector Reform and Investment* in 2001 set out precise details on country-specific legal and fiscal information to be used by foreign investors (World Bank 2001a). The documents pushed several resource-rich 'developing' countries (Chile, Peru and Mexico) to adopt a model framework – essentially a template for mining sector policy. The World Bank financed, as part of its structural adjustment lending, a number of country-level mineral sector reform projects, designed essentially to implement the reforms suggested in the Strategy for African Mining (World Bank 1992). The Bank implemented a five-year Mineral Sector Technical Assistance Project in Tanzania (initiated in 1993), worth US$ 14.5 million.

The project was designed to "introduce a legal, regulatory and fiscal framework" that could provide a conducive environment for private investment in mining (World Bank 2001a: 52). It included assistance in rewriting relevant national legislation, such as the new 1997 Investment Act and the new 1998 Mining Act, in order to 'harmonise' Tanzania's legislation with the requirements of the market-led economy. In this context the Government of Tanzania passed into law the new 1998 Mining Act, which replaced the 1979 Mining Act. The new mining legislative framework offered lucrative terms to prospective investors, such as a 3% royalty rate on minerals (5% on diamonds), a 30% income tax and no additional profits tax, indefinite carry forward of losses, no import duty or value added tax (VAT) on mining equipment, withholding tax on dividends of 10% and on expatriate salaries of 3%, mining rights transferability and mortgage-ability, and titling on a first-come, first-served basis (Butler 2004).

The 1998 Mining Act responded to the expressed need to create an enhanced 'enabling environment' for private investment, but did not do much to advance the broader development objectives that are mentioned theoretically in the mineral policy statement. Butler (2004) noted that both the 1998 Mining Act and the 1997 Investment Act were externally influenced; they were introduced as part of the five-year World Bank financed sectoral reform project (1993/94-1998/99). This was the same period in which Tanzania was struggling to qualify for the World Bank's HIPC (Highly Indebted Poor Countries) debt relief scheme. HIPC conditionality included macro-economic reforms with additional shifts towards a market-oriented, export-oriented and liberalised economy. These motivations are crucial for understanding the general context in which the Government of Tanzania moved to reform its Mining Code. Butler (2004) observed that certain foreign diplomats encouraged Tanzania to adopt investment and mining laws that would respond more closely to their own national corporate interests. Thus, the orientation of the 1997 Mineral Policy and the 1998 Mining Act were not influenced by input and comments from within Tanzania but rather associated with leverage pressures, such as aid packages and support for debt relief from diplomats and officials of Western countries that had vested interests in mining policies of mineral-rich African countries.

Comparison of the 1979 and 1998 Mining Acts

The most significant change from the 1979 Mining Act to the 1998 Mining Act is the entitlement of private license holders to use their mineral rights as collateral and to transfer mineral rights to banks or financial institutions without requiring ministerial approval or consent (Butler 2004). This practically enables foreign financial institutions to acquire mineral rights in Tanzania. This is a favourable legislative change because it offers foreign investment houses a new level of protection. At the same time, this legislative change can be regarded as a significant erosion of Tanzanian sovereignty over its mineral sector. Such an alienation had already happened in many other mineral-rich countries implementing reforms: Angola, Botswana, Madagascar, Mali, Ghana, Zambia, Mozambique and the D.R. Congo. The sovereignty of the state over its mineral resources had to take into account the economic and political realities of the neoliberal world (Kumar 1990).

In the 1979 Mining Act, the minister was the only authority in disputes and his decision was final. In the 1998 Mining Act – regarding Mine Development Agreements (MDA), Section 10 – there is a provision for "settlement of any such dispute by international arbitration" (i.e., the International Convention for the Settlement of Investment Disputes – ICSID). Under the terms of the 1998 Mining Act, the minister cannot take a decision concerning the inclusion of – or the

terms of – any MDA. Rather, any such decision must be referred to the mining advisory committee. Further, the 1998 Mining Act represents a shift to a 'rule-based' system of managing the mining sector: it greatly reduced the discretionary latitude of the minister and the manoeuvring space to interpret the 1998 Mining Act based on national interest. Most significantly for the private mining industry, Section 12(1) of the 1998 Mining Act establishes the principle and practice of 'first come, first served' regarding the granting of mineral rights.

Provision of state services to private mining industry

The World Bank's Strategy for African Mining prescribed that the state must shift from being 'owner and operator' of mining ventures to acting as 'regulator, promoter and service-provider' to private-led development of the mining sector. To this end, the 1998 Mining Act contains a section detailing how the Ministry of Mines is to be organised and administered and is much more explicit concerning the tasks and duties of various officials. The 1979 Mining Act contained only a few obligations for the Ministry of Mines to provide services to the mining industry. Inversely, it was private industry that was to provide geological data and information to the state. The 1998 Mining Act effectively reversed this arrangement. Section 21 states that "no information furnished or information in a report submitted by a holder of a Mineral Right shall be disclosed, except with the consent of the holder of the Mineral Right". Moreover, under the new law the Ministry of Mines is charged to "undertake the geological mapping of Tanzania", to "provide data concerning the geology and mineral resources of Tanzania", to "assist members of the public seeking information concerning geological matters", and to "maintain laboratory, library and record facilities as may be necessary for the discharge of these functions" (Section 18). These services can be regarded as public subsidies given to the private mining industry in the context – as noted above – of Tanzania surrendering considerable discretionary power over the development of its mining sector.

The Mine Development Agreement (MDA)

The Mine Development Agreement is a new feature (Section 10) in the 1998 Mining Act (Box 4.1). The concept of a MDA is called "a model investment contract for mining ventures, which was introduced in the Mining Code and comprises a new fiscal regime as well as other provisions". It provides a number of legislative provisions favourable for mining companies: a legislative loophole for mining companies to negotiate fixed tax rates throughout the life of the project, even if the tax laws change (e.g., due to change of government); opportunities to negotiate a variety of other incentives and special guarantees; it may entail a waiver of company liability for environmental problems; and, as noted above, it

may override and/or limit the discretionary authority of the ministry's officials (URT 2008a).

Box 4.1 The Mine Development Agreement (MDA)

Between 1994 and 2007 six MDAs were signed for large-scale mine development in Tanzania. These include Bulyanhulu Gold Mine Limited (BGML) in Kahama, Golden Pride Gold Mine (GPGM) in Nzega; Geita Gold Mine Limited (GGML) in Geita; North Mara Gold Mine (NMGM) in Tarime; Tulawaka Gold Mine (TGM) in Biharamulo and Buzwagi Gold Mine (BGM) in Kahama. According to Section 10(1) of the Mining Act, the Minister of Minerals and Energy is authorised on behalf of the government to sign MDAs with mining investors. The most important features of the MDAs can be found in Section 10(2) of the *1998 Mining Act*, where it reads that an MDA:

- guarantees a fiscal stability system for the entire lifespan of the mine, with regard to royalties, corporate tax, custom duties and various levies,
- relates to circumstances or manner in which the Minister or Commissioner can exercise discretion (granted by the *1998 Mining Act*) to implement the MDA and its by-laws,
- stipulates the responsibilities of the investor to conserve the environment,
- details the manner for resolving conflicts,
- allows mining companies to open and operate offshore company bank accounts;
- sets a ceiling amount for local government authority levy up of US$ 200,000 per year, and finally
- It is a top secret agreement between the government and the investor. It is not accessible to legislators and the public in general.

Source: URT (2008a).

The favourable position of the private sector is particularly evident in the section that sets out the terms for 'special mining licenses', which is the 25 year license issued for major capital-intensive mining ventures. The MDA may limit the minister's discretion in approving special mining licenses for 'non-entitled applicants' (i.e., persons or companies not already holding prospecting or retention licenses); may prevent the minister from rejecting an application for renewal of a special mining license or limit the grounds for refusal; and may limit the ability of the minister to reject an amendment submitted by a company regarding the terms of their special mining license (including terms such as the details of the environmental management plan and plans for training and employing Tanzanians).

In effect, while the 1998 Mining Code is more a 'rule-based' legislation, the MDA allows some rules to be suspended or modified in favour of private corporate mining interests. Provisions established under the MDAs are "binding on the United Republic" (Section 10[2]), suggesting that they may be subject to litigation.

State interest in mining ventures

Section 32 of the 1979 Mining Act provided the United Republic of Tanzania with the right to acquire "on stipulated terms or on terms to be agreed, an interest in any mining venture which may be carried on in relation to land in, or which constitutes, the prospecting area". This stipulation may be included in the prospecting license. In the 1998 Mining Act, this right disappears. At the same time, while the 1979 Mining Act expressly prohibited Ministry of Mines' officials from holding shares in mining companies or mining licenses, this prohibition is dropped from the 1998 Mining Act. This seems to open the door for ministry officials to act with private, rather than state or public interests in mind. It also creates an additional avenue for private mining companies to try to influence or even directly bribe public officials.

Mineral rights

Under the 1979 Mining Act, there were officially three (effectively four) categories of mineral rights: reconnaissance license (12 months), prospecting license (3 years) and mining license (maximum 25 years). There was an additional 'prospecting right' (12 months, renewable) specifically for small-scale miners, enabling them to stake claims in areas designated for prospecting and mining for prescribed minerals without requiring "substantial expenditure and the use of specialist technology" (i.e., artisanal mining areas).

In the 1998 Mining Act, there are seven categories: prospecting license (5 years, renewable), retention license (5 years, renewable once), special mining license (25 years, renewable), mining license (10 years, renewable once), gemstone mining license (10 years, renewable), primary prospecting license (12 months, renewable) and primary mining license (5 years, renewable). The two categories of primary licenses are essentially designed for artisanal and small-scale mining, while the special mining license (for minerals other than building materials) and the mining license (for minerals other than gemstones) seem to be designed for large-scale, technologically complex and capital-intensive mining operations. It is worth emphasising that a primary (artisanal) mining license can be converted, upon request, into a mining or special mining license, usually by entering into a joint venture with a company that is able to meet the annual expenditure requirements. What this suggests, however, is that tracts of land originally designated for artisanal prospecting and mining (by Tanzanian citizens) may with time gradually become areas under exclusive jurisdiction of private (foreign owned) companies and investors.

National developmental benefits

In the 1979 Mining Act, general developmental benefits (e.g., employment and spill-over effects) were treated as part and parcel of mining ventures and were taken in account in the approval and licensing process. The 1979 Mining Act required applicants for prospecting and mining licenses to indicate their plans for employment and training of Tanzanians. Further, the 1979 Mining Act required mining license applicants to indicate a plan for goods and services to be procured in Tanzania, also including some 'infrastructure requirements' (Butler 2004). Environmental concerns were not given high priority. With the 1998 Mining Act, there are several significant shifts in how national developmental – or sustainable development – objectives are conceptualised. Sustainable development became focused, to a large extent, on environmental protection and standards. Employment creation and poverty alleviation are addressed primarily in relation to the small-scale mining sector, although this sector does not enjoy many privileges under the Act. The law was primarily designed to attract foreign investment; the deliberate enhancement spill-over economic effects through local procurement requirements disappears.

Environmental regulations

The 1998 Mining Act has much more stringent regulations, mandating compliance with international standards regarding protection and rehabilitation of the environment in mining areas. Applicants for mining licenses, special mining licenses and gemstone mining licenses are all required to submit an independent environmental impact assessment and an environmental management plan. In addition, while applicants for primary mining licenses (small-scale mining licenses) are not required to submit an environmental impact assessment, renewal of primary mining licenses is partially determined by their 'close' compliance with environmental and safety regulations.

The 1998 Mining Act contains a clear paradox: on the one hand, it introduced greatly enhanced environmental regulation, while, on the other hand, it reduced the capacity of the state to monitor the same. One can only speculate about the reasons for including such paradoxical environmental provisions. Beyond the genuine concern for the environment, an additional explanation is the desire of large mining multinationals to placate an activist public, which is highly concerned and vocal regarding environmental risks in mining. Furthermore, the environmental discourse is increasingly used by large mining companies to enhance their own CSR status and highlight the superiority of their environmental practices against the inadequate and irresponsible practices of small-scale peasant miners (e.g., mercury pollution resulting from artisanal gold processing). The environmental critique of artisanal mining became an additional rationale for regu-

lating and containing the activities of the small-scale sector, ultimately creating a paternalistic relationship between large mining companies and local artisanal mining groups.

Employment

Tanzania's 1997 Mineral Policy identifies the creation of employment opportunities in the mineral sector and the sector's role in the diversification of the rural economy as key challenges addressed by the policy (URT 1997). Under the 1998 Mining Act, only Tanzanian citizens are eligible to obtain primary (i.e. small-scale) mining licenses. It was estimated that between 450,000 and 1,500,000 Tanzanians worked as artisanal miners (ILO 1999; Chachage 1995).

Both the 1997 Mineral Policy and the 1998 Mining Act seek to address issues related to quality of employment in the artisanal mining sector. In other words, they seek to secure improved training opportunities, credit facilities, extension services, and formal regulation, thus enhancing the capacity of the sector to alleviate poverty and improve social and economic development in rural areas. Such goals are strongly promoted by international agencies (UNDP, ILO and World Bank) as well as by the corporate mining industry, to a certain extent. However, the companies' primary motivation is to minimise potential conflicts between industrial and artisanal mining, and enhance the industry's own public profile through CSR gestures.

Modern industrial mining is very capital-intensive compared to the small-scale labour-intensive sector. As the long-term effects of the 1998 Mining Act begin to take shape, large tracts of land in mineral-rich regions of the country are being licensed to companies involved in industrial (as opposed to artisanal) mining. It is expected that this will significantly reduce the total number of persons employed in the mining sector as a whole. Many provisions of the 1998 Mining Act favour larger, 'experienced' companies and foreign investors that demonstrably possess the capacity to efficiently and profitably exploit the country's mineral resources. The small-scale mining sector lost out to large, capital-intensive operators. The total number of jobs in mining has been greatly reduced with the onset of large-scale mining, which employs a total of 8,733 workers (Table 4.1).

Maximising broader economic benefits from mining

The 1997 Mineral Policy of Tanzania makes a number of references to the importance of linking the mining sector to broader economic development objectives. For instance, economic diversification is to be partially realised through value-added processing of minerals. Tanzania should become 'the gemstone centre of Africa' with the establishment of a 'well-developed gemstone cutting and

Table 4.1 Employment in the large-scale mining sector in Tanzania

Name of mine	Tanzanian	non-Tanzanian (experts)
Bulyanhulu Gold Mine Ltd	1,710	203
North Mara Gold Mine	923	80
Tulawaka Gold Mine	481	27
Buzwagi Gold Mine	630	66
Geita Gold Mine Ltd	2,222	74
Golden Pride Gold Mine	604	15
Tanzanite One	579	20
Mwadui Diamond Mine	959	8
El-Hillal Diamond Mine	220	0
Buhemba Gold Mine	405	33
Total	8,733	526

Source: Extracted from URT (2008b).

jewellery industry'. However, a closer look at the 1998 Mining Act uncovers little if any legislative support for any of these ambitious visions for mineral policy.

Most significantly, there is no mention anywhere in the 1998 Mining Act of any requirement for local sourcing of goods and services. International trade and investment agreements increasingly treat such measures as illegal 'performance requirements'. In this regard, Tanzania's mining legislation was reformed to make it compatible with the 1994 Trade Related Investment Measures (TRIMs) Agreement which considers certain performance requirements – such as local sourcing and local content – violations of GATT Article III National Treatment provision. The WTO's *Trade Policy Review of Tanzania* (2000) states that "The authorities indicate that Tanzania does not have any local content requirements". These external policy pressures proved stronger than Tanzania's national policy objectives to secure direct economic benefits through enhancing the local and national economic impact of the large-scale mining sector. It appears that, despite its visionary policy statement, in order to attract FDI the Tanzanian government has been forced to abandon key development objectives.

Compensation for persons vacated from their land due to mine development

According to the 1997 Mineral Policy, the mining company is responsible for administering a social impact assessment and determining the possible effect of their activities on the community and the environment surrounding their projects. Section 3.3.12 (iii) of the Mineral Policy states that the company should have a sustainable system for cultivating good relationships with neighbouring villages.

The 1999 Land Act, Sections 4.2.19 and 4.2.20, states that land appropriated for projects of national interest (including mine development) should be compensated according to market value and the loss of the benefits that the owner previously obtained from that piece of land. Other factors to be considered include disturbance and relocation costs, lost revenue, the value of the homestead/-household, previous cost of acquiring that particular piece of land, and the interest that would be paid if compensation is not effectuated within the agreed upon time period and according to market prices.

The 1999b Land Act and 1999c Village Land Act are the two major laws that principally govern land, including compensation; however, there are additional laws that also regulate land use practices, including mine development. The 1998 Mining Act, Section 96, stipulates that the land right given in a license to prospect minerals or mine should be used rationally without causing harm to the persons who own this land or the environment. Section 96(3) states that landowners should be compensated at market prices, honestly and adequately. Under Section 96(5), the law stipulates that in case of conflict regarding compensation for land surrendered for projects of national interest (in accordance with Section 96[3]), the parties should take up the matter with the Commissioner of Mining for arbitration, in accordance to the authority granted by Chapter VIII of the 1998 Mining Act.

Despite its extensive elaboration in policy and acts, the situation on the ground is quite different when it comes to implementation. Observations revealed that the timeline for payment is not respected: villagers wait for up to ten years for reimbursement. The villagers confirmed that they are not aware of their compensation rights and who should compensate them: the government or the mining companies. Further, investors are given large tracts of land regardless of the actual prior and subsequent use by communities or mining companies. The special mining licenses are offered to companies on ‘first come, first served’ basis and their ability to make the required payments for the land – regardless of other economic activities on this land.

Evaluation of land for compensation is carried out by the government in collaboration with the mining companies. The local communities are not engaged. This lack of participation has led to low understanding of the criteria used to evaluate land and determine payment levels. Further, the local communities do not know how to defend their rights and secure due compensations. The land officer evaluates the land and sets the reimbursement rates, while payment is actualised at the district commissioner’s office. In most cases the criteria for compensation are not followed. Sometimes villagers are evicted without receiving any compensation or alternative land for relocation.

Various overlapping laws and acts that govern compensation

There is a multitude of laws and acts that deal with land appropriation for various land uses: the general Land Act, Village Land Act, Mining Act and Wildlife Conservation Act, to name a few. The two land acts conflict one another and lead to disputes during compensation, especially regarding ownership. For instance, the 1999b Land Act indicates that land is public property vested in the president, existing occupation and customary rights are recognised and secured, an equitable access of land by all citizens with regulated amount of land occupied is guaranteed, ensuring that land is used productively and full, prompt and fair rules of compensation are defined. Inversely, the 1999c Village Land Act indicates that land is village property: the village council detains some powers to decide on the use of land according to the regulations defined in the Village Land Act. The largest possible area is allocated to families, individuals or groups and the community ownership of villages is recognised. Land is also defined and differentiated from minerals under the 1998 Mining Act; however, primary defining legislation for land are the 1999b Land Act, the 1974 Wildlife Conservation Acts, and the 2002 Forests Act. The resulting legal conflicts are a common source of disputes over land.

Tax regimes in Tanzania

In an important step for implementation of the 1997 Mineral Policy, the government amended several financial laws and acts (Miscellaneous Amendments, 1997a). The intention was to encourage the private sector, especially FDI, to take charge of mining development in Tanzania. The government proposed the 1998 Mining Act and reformed the 1992 Foreign Exchange Act, aligning them with the current needs of the mining sector and the 1997 Mineral Policy. According to the reforms, the tax regimes provided several incentives to investors. For instance, Section 15(3) of the 2004 Income Tax Act allows mining companies to recover the funds they spend on environmental rehabilitation, after fulfilling the prerequisites stipulated by the Income Tax Commissioner.

Section 83(1) (a) directs the mining companies to deduct the withholding tax from all payments for management services and technical services rendered by resident or non-resident companies. The withholding tax stands at 5%, as stated in Section 4(c) of the first table of taxes in the 2004 Income Tax Act. The withholding tax for non-resident companies is calculated as per Section 83(1) (b) at 15% of services rendered to the mining company.

The depreciation rate for machinery and other mining equipment is set at 20%, as shown in the fourth class of table three of the 2004 Income Tax Act. The field study did show that some sections of the old 1973 Income Tax Act are still being

used, despite the fact that it was repealed by Parliament and replaced by the new 2004 Income Tax Act. For example, Section 145 of the 2004 Income Tax Act allows the use of the third section of table two of the 1973 Income Tax Act. Several important clauses are still being applied:

(a) The investor is granted exemption of 100% capital allowance per year for expenditures.
(b) Mining companies that signed MDAs before 1 July 2001 (others are not eligible) can recover 15% of investment capital unrecovered (it is called Additional Capital Allowance on unredeemed qualifying capital expenditure). This exemption of 15% is given to the mining company every year until it has taxable output (i.e. starts making profit). The companies in question receive an additional compounded interest. This clause significantly prolongs the time period when mining companies finally start paying taxes.
(c) The tax exemption given to mining companies in computing income tax allows the companies to recover investment expenditures and operational costs in all mining projects, regardless whether the project contributed to income during that particular year, i.e. there is no 'ring fencing'. If the company has two or more mine projects, the company is allowed to recover all the expenditures and costs for all mining operations.
(d) The rates of withholding taxes for companies (with or without MDA signed by 1 July 2001) are shown in the 2004 Income Tax Act. Observation confirmed that in some cases, the withholding taxes are charged under the old regulation of the 1973 Income Tax Act. For example, under the 2004 Income Tax Act, the rate of withholding taxes for all services is 5% for resident companies and 15% for non-resident companies – however mining companies with signed MDAs are charged 3% withholding tax. In some situations the rates stipulated in the 1973 Income Tax Act are not used, for example, the tax on interest from credit extended to the companies from their subsidiary or close associates.

Value added tax (VAT)

Value added tax is charged for all goods and services sold in Tanzania. VAT is governed by the 1997b VAT Act and, according to Section 11, individuals and institutions listed in the third table of 2004 Income Tax Act (which includes all mining companies) are eligible for VAT exemption. Section 11 reads as follows: "the importation by or supply to a registered licensed exploration, prospecting, mineral assaying, drilling or mining company, of goods which if imported would be eligible for relief from duty under custom laws and services for exclusive use in exploration, prospecting, drilling or mining activities". According to Section 8, mining companies are not eligible for VAT exemption for goods and services which if imported are not liable for customs duty. Thus, mining companies usually pay custom duties but recover these taxes through VAT exemption. Since mining companies export most of their product (minerals) they are charged 0% VAT. All mining companies recover their VAT from Tanzania Revenue Authority (TRA).

Customs duties

Mining companies and their contractors receive relief from customs duties, dependent on the development stage of the mine. For example, during prospecting (before production begins in the first year) the companies and their contractors

are allowed to import goods and services related to mining activities without paying customs duties. Such goods and services include explosives, plants and equipment, spare parts, vehicles, fuels and lubricants. The relief is granted by the Custom/Tax Commissioner, in consultation with the Minister of Minerals and Energy. After the first year of operation, the companies and their contractors are liable for customs duties for plants, equipment, spare parts, vehicles, explosives, fuel and lubricants. However, this rate does not exceed 5% and is half of the 10% prescribed for such materials in the Common External Tariff (CET) for East Africa.

Excise duties

Mining companies are exempt from paying excise duties for all goods and services imported or bought within the country (according to the *Government Gazette number 480 of 25 October 2009*).

Fuel levy

The fuel levy is charged under the 1985 Road and Fuel Act, Chapter 220. According to the *Government Gazette number 99 of 15 October 2005* (which nullified the government instruction of the *Government Gazette number 22 of 5 February 1999a*), companies that work in gold mining and have signed MDAs are eligible for fuel levy relief (commonly known as road toll) that exceeds US$ 200,000 per year and this relief is for all mine life span or MDA duration. This is contrary to *Government Gazette number 22 of 5 February 1999a* that granted fuel levy relief only for the first year of production. Companies dealing with other minerals and small-scale miners are not entitled to fuel levy relief.

Stamp duties

Mining companies with MDAs pay stamp duties, as stipulated in the MDAs, but these are less than the rates stipulated by Section 189 in the first table of the 1972 Stamp Duty Tax Act.

Local government levies

The 1982 Local Government Finance Act states that all companies – including mining companies – within the jurisdiction of particular local government area are required by law to pay a local government levy set at 0.3% of their turnover. However, the MDAs stipulate that all companies pay US$ 200,000 per year. It is not clear how this amount was reached.

FDI performance prior to the reforms

When Tanzania became independent in 1961, political power was restored but, like many other African countries during this period, the command of the economy remained mostly in the hands of foreign investors. This gave rise to the political tension and dissatisfaction that eventually gave the post-independence socialist government the impetus to announce the Arusha Declaration (AD) in 1967. The AD was an important strategy for Tanzania to take command of its economy; the government claimed direct responsibility for the economy and introduced a wide range of economic controls.

The most important mechanisms included centralised control over investment planning, with restrictive codes for private and foreign investment; administrative allocation of foreign exchange and import licensing along with price controls administered by the National Price Commission; regulated/controlled interest rates and credit rationing according to the annual financial plan; as well as state control on wholesale trade for some import and domestic commodities to specific parastatal organisations.

With the AD, the government enacted a number of acts and directives that directly or indirectly discouraged private (both foreign and domestic) investment. Among other things, these acts nationalised all means of production, distribution, and exchange, prohibiting private ownership of small industrial enterprises in villages and cracked down on ‘economic saboteurs’ (entrepreneurs who had started small-scale enterprises despite these prohibitions). ‘Means of production’ refers to physical, non-human inputs used in production (the factories, machines, and tools used to produce wealth) and both infrastructural capital and natural capital. The result was an institutional and policy environment that was very hostile towards the private sector.

As a result of this policy environment, prior to the reforms Tanzania attracted very little FDIs, compared to neighbouring countries such as Kenya. During this period, FDI inflow in Tanzania averaged about US$ 4.4 million, almost eight times less than Kenya’s US$ 32 million. In fact, among the three East African countries, Kenya was the leading destination for FDI before 1990 because of its non-restrictive policies towards foreign investors. From 1970 until 1990, East African countries received some US$ 757 million of FDIs, the lion’s share (90%) going to Kenya, nearly 10% to Tanzania, while Uganda hardly received any (UNCTAD 2002). Tanzania’s policies of public investment proved to be failures: many of the state-controlled investments underperformed and instead became an unbearable burden for the government.

FDI performance after the reforms

Because of the poor economic performance in the early 1980s, the government adopted the Economic Recovery Programme (ERP), which called for a deliberate and systematic removal of regulatory controls, structures and operational guidelines in the administration and pricing systems in the economy. Thus, the ERP policy package was bound to impact private investment. The package aimed at improving the balance of payments, reducing inflation, and improving fiscal and monetary policies, supplemented by a devaluation of Tanzania's currency. Consequently, Tanzania now offers a favourable investment climate with sound macro-economic foundations. This positive trend of economic stability gives confidence to foreign investors, putting them in a good position to foresee future returns on their investments and in turn stimulating them to introduce technological innovations (an important element for accelerating economic development).

The introduction of the first market-oriented investment code in June 1990 was a deliberate effort to attract both local and foreign private investors by opening up the economy. Due to poor response by private investors in the early 1990s, the government amended the code in 1997, enacting the modernised 1997 Tanzania Investment Act (shortly after the launching of the 1996 New Investment Policy of Tanzania). The 1997 Tanzania Investment Act provides the basic investment framework for Tanzania, with new and modern legislation that reflects both world economic conditions and Tanzania's domestic realities.

As a result of these reforms, FDI inflows rose from US$ 12 million in 1992 to US$ 260.2 million in 2004, peaking at US$ 516.7 million in 1999 (Monthly Economic Reviews 2000). This upsurge can be attributed to changes in the domestic as well as the intentional economic environment and the adoption of a more dynamic and pragmatic approach to attracting FDIs. The accelerated inflows between 1992 and 1999 considerably improved Tanzania's FDI performance compared to its neighbours, giving it a competitive edge for certain types of FDI. Its share of the total FDI inflow into the least developed countries (LDCs) doubled from 2.7% in 1991-1995 to 5.3% in 1996-1999, while its share of inflow into sub-Saharan Africa more than doubled during the same period, increasing from 1.5% to 3.3%. The Tanzania Investment Centre (TIC) played an instrumental role in accelerating FDI growth. The TIC has within a short period transformed itself into a modern investment facilitation centre – an efficient one-stop shop for investors. Through the TIC, the government has managed to create an investor-friendly environment, helping overcome many of the constraints that existed prior to 1996 (Kabelwa 2006).

Tanzania has put in place a number of proactive measures to help foreign investors: promotion and investment incentives given for FDIs, efforts aimed at reducing corruption and improving administrative efficiency, after-investment ser-

vices, and the provision of social amenities like education, health, housing, water and recreation. The business environment for foreign investors has been improved through various initiatives: cutting bureaucratic 'red tape' and reducing state interference in private sector operations, improving the facilitation of investments and establishing of investment promotion agencies. The government's privatisation programme of the early 1990s also contributed to attracting foreign investors. The government's trade liberalisation policy and its easing of control over foreign exchange transactions were reinforced by legislative reform. The 1992 Public Corporations Act (PCA) aimed to promote the private sector in the economy as well as encourage Tanzanians to own shares in privatised state-owned enterprises.

Distribution of FDI in Tanzania's economy

It was difficult to obtain accurate FDI data, especially for recent years. The most current investment report (Tanzania Investment Report, 2004), published by the Bank of Tanzania in collaboration with the Tanzania Investment Centre and the Bureau of Statistics, provides the latest data on FDIs only up to 2001. In order to obtain a realistic picture of FDI distribution, this study relied on FDI *stock* rather than the heavily fluctuating FDI *flows*. According to the Tanzania Investment Report (2004), the largest share of foreign private capital flows is attributed to FDIs, which also include foreign portfolio investment and long- and short-term loans. In 2001, the FDI stock contributed about 88.6% of foreign private capital stock. This shows the importance of FDI for Tanzania's economy. Looking at FDI components, direct equity investment is a major portion of FDI in Tanzania: about 76.3% of FDI stock in 2001.

The largest recipient of FDI is the manufacturing sector (33.5% of total FDI stock in 2001), while the second largest sector is mining (28% of total FDI stock for the same year) (UNCTAD 2004). Much of FDI in manufacturing went to the food and beverages industry, while in mining the largest single sub-sector is the gold mining industry. Thanks to its mineral resources, Tanzania is in a prime position to attract mineral explorations and investment. During the 1990s, these natural riches were enhanced by revised, investor-friendly investment regulations and the 1998 Mining Code – all well received by international investors. There has been a dramatic growth in the mining sector since the 1990s. In 1998, Tanzania was the leading country in Africa in terms of the number of exploration activities, just behind the traditionally strong mining countries of South Africa and Ghana.

5

Socio-economic impacts of mining industries on local neighbourhoods

Mining projects are usually located in remote rural areas, so companies have to make considerable investments in physical and social infrastructure, such as roads, schools, hospitals, power lines and water supplies. Mining communities enjoy the benefits from some of these facilities, but also suffer the negative consequences due to air and water pollution, as well as other forms of environmental degradation. Mining also requires considerable land alienation. Therefore, while mining projects may have weak links with the national economy, they have a decisive impact on surrounding communities. This chapter discusses the perceived gains and losses from mining FDI in local communities, based on multiple data gathering approaches: informal interviews, focus group discussions, conversations with key informants, analysis of existing documents, a questionnaire survey and observations. The cost-benefit analysis of the impact of mining sector investment on local communities includes the consideration of both economic and social effects. The analysis compares the economic gains and losses since the introduction of neoliberal reforms (net foreign exchange earned, extent of linkages with other sectors) and the negative social and cultural impact of mining investment in the Lake Victoria Greenstone Belt (in particular GGML and BGML).

Economic impact

According to the September 2009 joint survey by Oxford Policy Management (OPM), conducted on behalf of the International Council on Mining & Metals (ICMM) and the World Gold Council (WGC), Tanzania has recorded significant macroeconomic growth in terms of FDI inflow. The literature places Tanzania in

the upper-middle ranking for African countries according to FDI inflows. Before the reforms and the accompanying gold mining development of the 1990s, Tanzania was at the bottom of FDI recipients. With the exception of South Africa, all countries currently ranked higher are oil and gas producers. UNCTAD data showed that nearly two-thirds of the surge in FDI flows after 1998 can be credited to investments in gold mining, with FDI stocks increasing from US$ 2.78 billion in 2000 to US$ 5.94 billion in 2007 (UNCTAD 2007).

Foreign exchange earnings

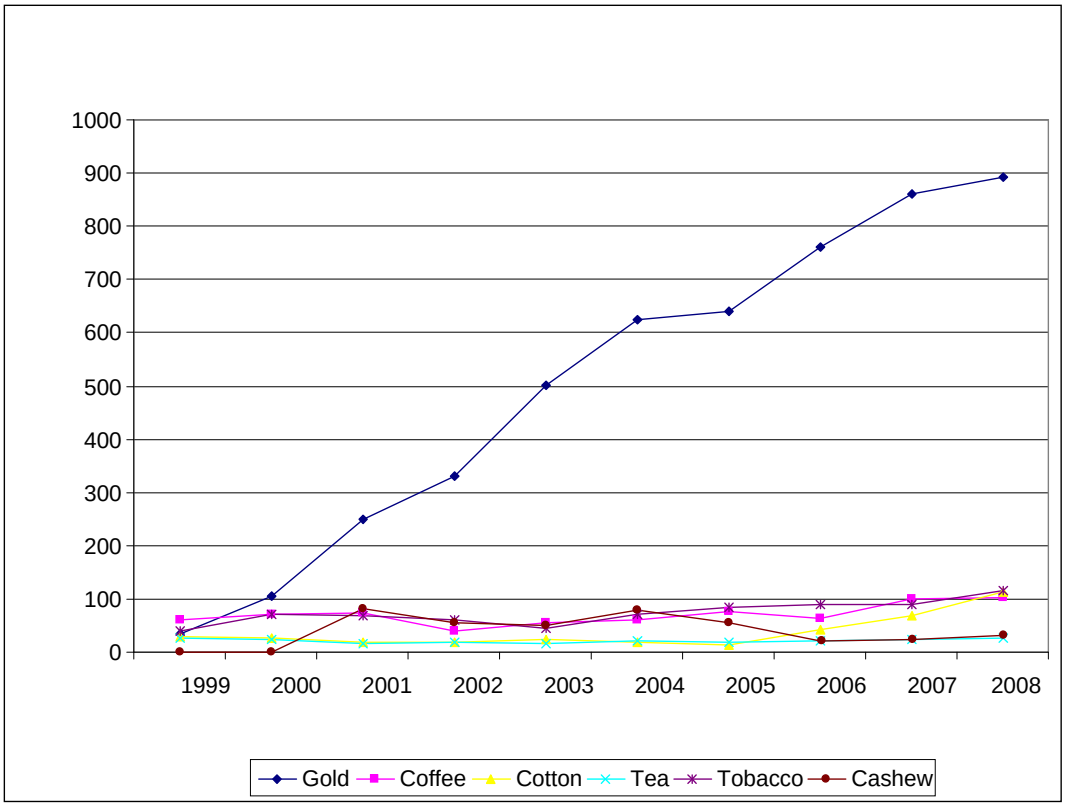
Increased investment in the mining sector also increased output and the total export value of all major minerals, with gold enjoying the strongest growth. The sector's contribution to foreign exchange earning progressively increased between 1999 and 2008. Tanzania's exports after independence were dominated by agricultural products: coffee, tea, tobacco, cashew and sisal. This pattern continued up to 1999 when gold exports exploded; today they greatly surpass agricultural exports (Figure 5.1). Between 1999 and 2008, agricultural crops grew by 4% annually while non-agricultural exports (such as mined products and manufactured goods) grew by 31% per annum. According to OPM (2009), gold exports outpaced all other manufactured goods by eight to one in the peak year of 2004 and still do so by a factor of two to one. Without gold earnings Tanzania would have lost an estimated US$ 750 million per year in foreign exchange earnings – more than total annual aid flows into Tanzania prior to 2006 and higher than the value of Heavily Indebted Poor Countries (HIPC)[1] debt relief in most years.

Generating government revenue

The mining sector generates revenue for the national economy through the following sources: salaries, wages and other payment made to employees and contractors; corporate income taxes, royalties, concession rents, services, customs and harbour duties; taxes on salaries of employees and social security contributions from employees and their employers; dividends to shareholders; and locally purchased equipment and consumables. Other sources include import duties and

[1] Heavily Indebted Poor Countries **(**HIPC**)** are a group of 40 least-developed countries with high levels of poverty and debt overhang which are eligible for special assistance from the International Monetary Fund (IMF) and the World Bank. The HIPC programme was initiated by the International Monetary Fund and the World Bank in 1996. It provides debt relief and low-interest loans to cancel or reduce external debt repayments to sustainable levels. To be considered for the initiative, countries must face an unsustainable debt burden which cannot be managed with traditional means. Assistance is conditional on the national governments of these countries meeting a range of economic management and performance targets.

Figure 5.1 Foreign exchange earnings from gold and traditional export crops, 1999-2008 (US$ million)



Source: Extracted from OPM (2009).

purchase taxes on vehicles; electricity and water charges as well as sale of state mining companies and sale of government shares. Tanzania's economy has accrued about US$ 1,636.1 million in ten years (1997-2007) from the mining sector, of which US$ 428.5 million were statutory taxes and other contributions (Sebastian [2009] quoting the government's chief secretary, Mr. Philemon Luhanjo). The breakdown of government revenue is indicated in Table 5.1.

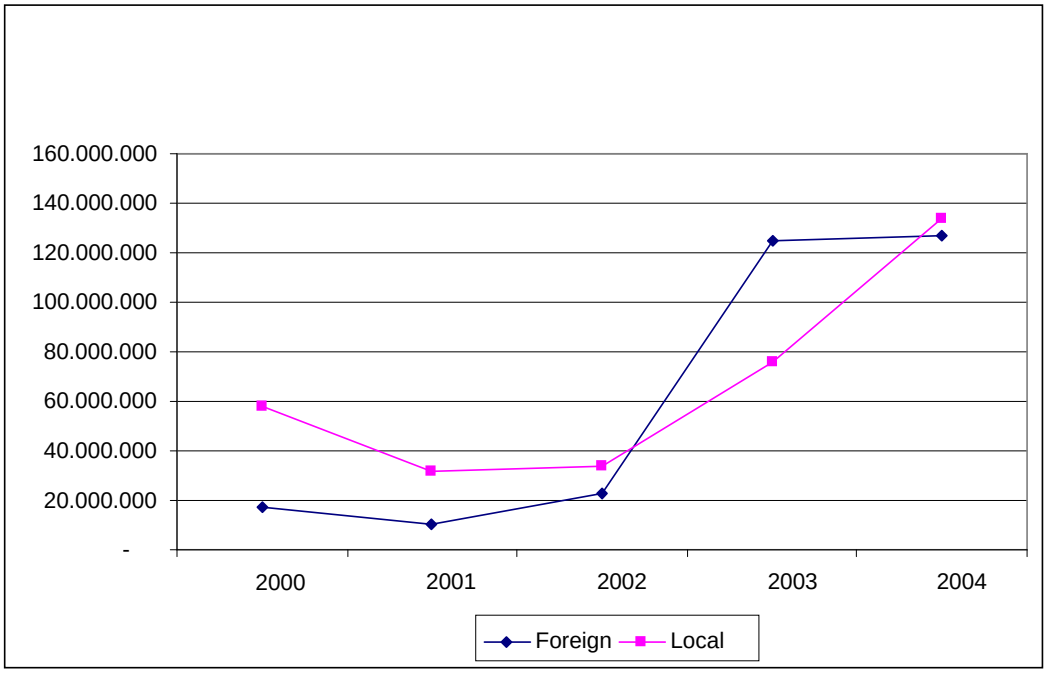
Table 5.1 Government revenue accrued from the mining sector, 1997-2007 (US$ million)

Statutory tax	428.5
Salaries	394.0
Training of personnel	21.0
Infrastructure	15.6
Local procurement	741.0
CSR	36.0
Total revenue	1,636.1

Source: Sebastian (2009), *The Guardian*, Thursday 11 June 2009.

The mining industry is increasingly turning towards local supply chains, procuring various services and equipment from local suppliers and contractors (Figure 5.2). These contractors include Caspian (Tanzania), Prime Fuels (Tanzania), Tanzania Railways Authority, Tanzania Harbours Authority, shipping agencies, various cargo freighters and food supply agents, such as ATS and Sodexho (and in turn employ many Tanzanian men and women around mine sites).

Figure 5.2 Value of mining services and equipment procurement, 2000-2004 (US$)



Source: Tanzania Chamber of Minerals and Energy.

Foreign exchange and generating government revenue

In gross terms, mining is the country's leading foreign exchange earner, even though its net foreign exchange contribution had been minimal before 1999. Critics argue that investment incentives and tax breaks given to investors – compounded by the fact that mining companies retain a large share of their export earning in offshore accounts – are major reasons behind the sector's minimal contribution to net national foreign exchange receipts (Curtis & Lissu 2008; SARW *et al.* 2009). Similarly, the sector's contribution to government revenue has been minimal, despite the fact that it had attracted significant FDI stocks. The mining sector's contribution to overall national GDP is still less than 5%, despite the sector's impressive growth (Table 5.2). This minimal contribution is attributed to the capital-intensive nature and relatively low workforce needs in the

large-scale mining industry. The contribution to gross national product (GNP) is likely to be even smaller compared to the GDP because of the outflows of the mining companies' dividends and interest on debts, which represent part of the difference between GDP and GNP.

Table 5.2 Mining sector contribution to overall national GDP, 2000-2008

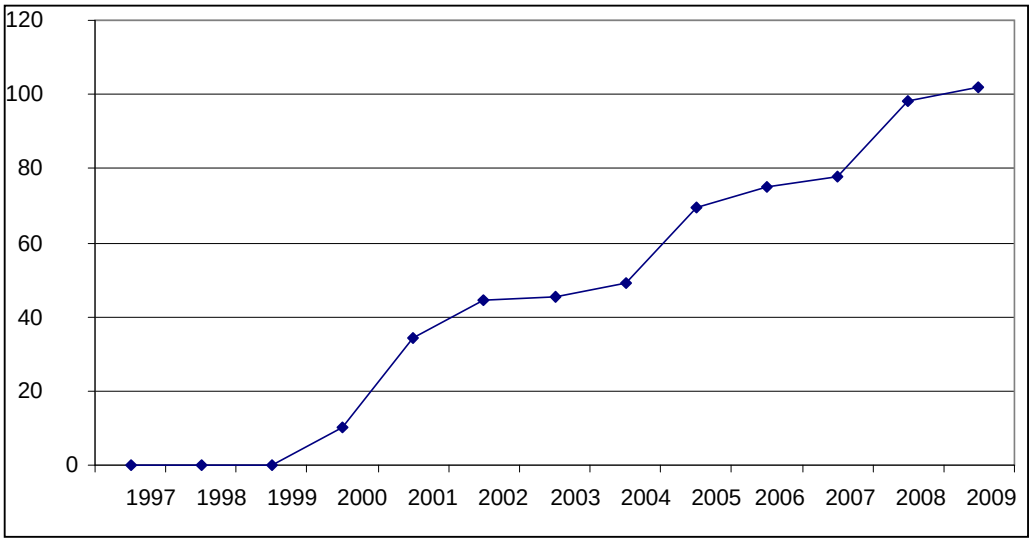
Details/year	2000	2001	2002	2003	2004	2005	2006	2007
Mining sector contribution to GDP (%)	1.5	1.6	1.8	2.1	2.5	2.8	3.2	3.6
Mining sector growth rate (%)	13.9	13.5	15.0	18.0	15.4	15.7	16.0	18.4

Source: Economic Surveys (2000-2007).

The bulk of mining revenue is expected to accrue from royalties and income taxes collected from local employees. Due to the typical pattern of large-scale mining development, tax payments are lower early on, as companies depreciate the extensive capital equipment purchases and construction costs. As the depreciation unwinds, government revenue from the mine increases. Gathering accurate tax collection data for Tanzania is problematic, but this situation is expected to improve with the country's entry (from February 2009) into the Extractive Industries Transparency Initiative (EITI).

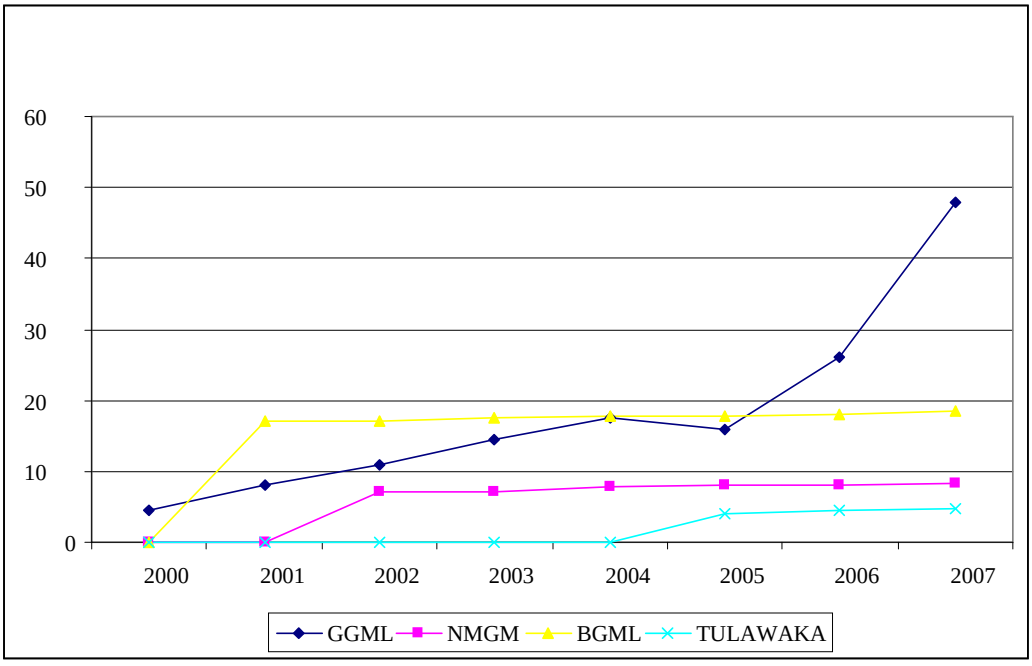
Data from the Ministry of Finance does not indicate any revenue from large-scale mining for 1997/98; however, by the 2003/04 budget this revenue increased to US$ 44 million. Despite this amount being relatively small compared to other sectors (the mines are all at early stages of exploitation), it already accounted for 3.7% of all domestic revenue. Despite the absence of up-to-date tax collection records, OPM's (2009) conservative estimates indicated that Barrick Gold Tanzania (owner of BGML) and AngloGold Ashanti (owner of GGML) paid in total US$ 76 million in taxes in 2007, with the possibility of surpassing US$ 100 million in 2009 (Figure 5.3). Furthermore, the IMF country report for 2006/07 put the revenue paid by major gold mining companies in Tanzania at US$ 2,490 million, which is 3.1%-4.3% of total tax revenues. This is approximately equal to one-third of all receipts from import duties and more than HIPC debt relief. Thus, Barrick Gold Mines (BGML, NMGM and Tulawaka) and AngloGold Ashanti's GGML are recognised as the highest single tax payers in Tanzania (Figure 5.4). It should be emphasised that both companies have mines in early stage of mine exploitation and thus still enjoy substantial tax breaks. Their major contributions to tax revenues are yet to materialise.

Figure 5.3 Total mining taxes paid to the Government of Tanzania, 1997-2009 (US$ million)



Source: Extracted from OPM (2009).

Figure 5.4 Taxes paid to the Government of Tanzania by four major mines, 2000-2007 (US$ million)



Source: Extracted from OPM (2009).

Social impact

The social organisation of every community is guided by defined principles. The introduction of large-scale mining operations in remote rural areas, such as Geita and Bulyanhulu, has substantial adverse effects on social organisation and cultural values. The expressions of these impacts include inadequate housing, youth unemployment, disturbance of the family unit as well as prostitution and drug abuse. Large-scale mining operations have triggered substantial in-migration: the population growth rate is above many urban places and could be even twice the national average. According to URT (2002), Geita is the third most populated district, after Kinondoni and Temeke. Apart from the mining and exploration companies, other mining support companies have also swarmed the area: contract miners, security companies, catering and restaurant services, transporters, explosives experts, equipment leasing groups as well as road and construction contractors.

Inadequate housing

Mining companies induce relocation and the growing displacement of communities and persons has led to increased migration of youth to the towns in search of alternative forms of employment. The massive influx into townships has created major problems with housing and rising living costs. For example, rents have doubled (20,000-40,000 TZS per month, an equivalent of US$ 15-30 per month) in Geita and Kahama towns and unemployed youths and job seekers (*wasoteaji*) cannot afford rooms in the township. Residents of mine neighbourhoods face additional problems. The majority is living in makeshift houses (Photo 5.1), and overcrowding gives rise to multiple social ills, such as prostitution, drug abuse and crime.

Photo 5.1 Makeshift shelters at BGML neighbourhood (Kakola village)

Prostitution

A major social ill made worse by large-scale mining operations is prostitution. In informal communication, a majority of the persons complained about the increase in prostitution and cited it as a sign that the social values of the Sukuma people were eroding. A majority of the respondents (70%) perceived prostitution as the number one social ill (Table 5.3). In the words of Masanja Ndaki (age 56, from Kakola village),

> There are both mobile and resident sex workers in the mining neighbourhood. The mobile sex workers commute to and from Mwanza, Shinyanga, Kahama, Nzega, Geita, Biharamulo and Musoma, targeting mainly expatriate staff of the mining companies and some well-to-do business operators. The resident sex workers service mostly local miners of large-scale mining companies as well as small-scale miners and the local communities.

Table 5.3 Perceived ranking of social ills (%, N=304)

	Rank				
	1	2	3	4	5
Prostitution	70.1	20.1	6.6	0.0	3.3
Drug use	26.6	47.0	19.7	6.6	0.0
Crime	6.6	13.2	53.9	16.4	9.9

Source: Survey, 2007-2010.

"Some of these sex workers migrated into mining neighbourhoods with an intention of trading or getting a job in the mine. Failing to achieve their objective, they resorted to prostitution; an easy but risky survival strategy", asserted Masala Kulangwa (36 years old, focus group discussion, Nyamalembo village). There was also a sharp increase in reported cases of sexually transmitted diseases (STDs) and HIV/AIDS in the BGML and GGML neighbourhoods in the past decade (see Table 6.7). It is believed that the growing incidence of HIV/AIDS and STDs in large-scale mining neighbourhoods is to blame on the increases in prostitution.

Drug abuse

Observations revealed a strong culture of drug addiction in the mining neighbourhoods. Table 5.3 illustrates the perception of drug use as the number two social ill in mining neighbourhoods, preceded by prostitution and followed by crime. It is particularly common among miners and sex workers who migrate to these areas. The drugs most commonly used are hashish, marijuana (*bhang*) and other addictive substances like alcohol. Drug use is on the increase due to superstitious beliefs: miners think that it gives them stamina to work hard and for longer hours, while sex workers feel that it boosts their confidence in dealing

with customers. Drug abuse has a direct relationship with other types of social ills and crime.

Disruption of family unit

The relocation and compensation measures implemented by the government in collaboration with the mining companies had adverse effects on the family, disrupting its value as a closely-knit social unit. New settlements for the communities also disrupted long-established social networks, commonly known as *nzengo* among the Sukuma. As the Bomani Commission reported,

> [I]n many instances the compensation process is neither clear nor fair. Valuation for compensation is usually done without heeding key issues identified in the law [i.e., disturbance, transport and the value of the properties depending on location]. Many people have been displaced without receiving compensation or being allocated alternative places.

The focus groups also confirmed that the failure to provide adequate compensation was seen as a key government weakness (Box 5.1).

Box 5.1 Governance weaknesses concerning compensation for land allocated for mine development

Mzee Mganga (48 years old and long-time staffer on the district council) explained how the compensation process was carried out:

[G]overnance weaknesses at regional and local level are behind the tensions and endless cries about compensation … first before the establishment of GGML activities in 1990s … there was a team of GGML workers that were visiting the area of potential mining sites in Geita … the team offered an option to the people … local community to elect some delegates to represent them in Ghana to learn how the compensation exercise was carried out in that country … with a proposition that each family which is to be shifted to be compensated a house and a goodwill amount of money to enable them to start afresh [amount not specified] … so they called a community meeting together with the District Commissioner and other District Council delegates…the community at first elected their representatives that could go on their behalf…but on actual implementation those that went to Ghana were the district officials; party leaders and some few influential members of the community [party cadres] and none of the targeted people …

The outcome of this visit went well, but the new delegates were scheming how they could become part of the compensation exercise…When they arrived from Ghana … they start convincing the community that neither of the plans proposed by GGML was good for them … The good option for the peoples' properties was to be valued and paid accordingly, i.e. tree by tree, stone by stone, grass, house and everything on that land … After a successful campaign the community agreed with their representatives … Then other people in Geita town, mostly businessmen and district officials, started buying land/plots from the local communities in potential mine areas…and developing the plots by planting permanent crops and constructions … so the targeted people were left with small plots and during compensation … they were paid peanuts … Those that benefited were those that came later and bought plots of land either under false names or with new identity … The local communities did not benefit from the exercise …

High living costs

Mining neighbourhoods have been hit with high living costs. All necessities (e.g., food, accommodation, garments, health and water) have a price tag beyond the reach of the average person. At the same time, all sources of recreation and livelihood of the people are seriously impaired by mining activities, a situation that aggravates other social problems. Observations revealed two major causes for high living costs in mining neighbourhoods (GGML and BGML). First, the salaries of the local staff (miners) working in large-scale mining companies are too high (minimum monthly wage starts at US$ 1,160, equivalent to 1,546,300 TZS) compared to their counterparts working in the public service (with monthly salaries of less than US$ 200, most fall between 80,000 and 160,000 TZS). In addition, the expatriate staff of the mine are paid internationally competitive salaries ($6,000-$8,000 per month, equivalent to 8,000,000-10,000,000 TZS), which further widens the income gap in most mining neighbourhoods. This group of high-income earners has had an inflationary effect on prices for goods and services, such as housing, food and other amenities.

However, several groups of mine workers expressed dissatisfactions with their monthly pay. For instance, security guards are highly valued and paid high salaries, compared to dump truck drivers, technicians, operators and other employees. The feeling of unfairness is expressed through petty crimes, such as *kupiga nyoka* – the act of siphoning fuel from machines and dump trucks for resale in the neighbourhood (October 2008, focus group discussion with mine workers). Also, the mining industry has removed a significant portion of the labour force from agriculture and other income-generating activities, by taking farmland and small-scale mining squares/plots away. The fall in food production in these mining areas, which are densely populated and suffer from high unemployment, are another key cause behind high prices for foodstuffs and other goods and services. According to the 2007 HBS findings, average expenditures per household in BGML and GGML neighbourhoods are higher than in rural areas in Tanzania's mainland and even higher than in Dar es Salaam and other urban centres (Table 5.4).

These harsh conditions have pushed children to participate in child labour by peddling petty commodities (water, cigarettes and bread), which has increased truancy and dropout rates in primary schools in both neighbourhoods (BGML and GGML). Similar findings were reported by George (2003): 12.5% of the workforce in mining areas of Geita consisted of children and most of them expressed their readiness to work in small-scale mining. The children were between 14 and 18 years of age and blamed the lack of alternative sources of income-generating activities as the compelling factor.

Table 5.4 Mean expenditure per capita by category of item (nominal figures, 28 days, TZS)

Category	Dar es Salaam	Other urban	Rural	BGML/ GGML*
Food expenditure	19,149	14,367	10,556	25,518
Durables	2,738	2,090	767	14,537
Medical expenditure	816	490	286	15,238
Education expenditure	2,387	1,059	248	20,500
Other non-durables	14,003	8,217	4,368	26,930
Telecommunications	2,980	877	194	-

Source: NBS (2008) and *Survey, 2007.

6

Environmental and health impacts of mining operations on local neighbourhoods

With each passing year, the environment in the mining areas is rapidly degrading and its economic value is diminishing. Agricultural lands were not directly degraded, but the decrease of total land available for farming has reduced arable land and shortened the fallow period. The traditional bush fallow system, which allowed for adequate recycling of nutrients and improved the productivity of subsequent planting cycles, cannot be practiced in Sukumaland any longer: there is not enough land and there are too many people (see Chapter 2). Large-scale mining operations continue to reduce vegetation in the area, pushing it to levels negative for biodiversity. The principle assets of the environment – land, water and air – have been severely affected by mining operations. It is questionable whether they can continue supporting adequate well-being and development of rural dwellers in mining neighbourhoods. This chapter considers the impact of mining on the physical environment, land and vegetation, air and water pollution. It also looks at the health impact on inhabitants of the GGML and BGML neighbourhoods as well as more broadly the LVGB and its environment.

Degradation of land and vegetation

Considerable areas of land and vegetation in large-scale mining areas have been cleared to make room for mining operations. Surface mining operations in GGML have consumed considerably more land than in the underground mining taking place at BGML. It is estimated that at mine closure the mining companies would have consumed about 40-60% of their total land areas for activities such

as siting mines, heap leach facilities, tailing storage facilities and open pits, mine camps, constructing roads and arranging resettlement for displaced communities. This has an adverse effect on land and vegetation, the major sources of livelihood for rural inhabitants of the area. According to the GGML's Annual Environmental Reports (2007, 2008), the company operates under a Special Mining Licence (SML 45/99), granted in June 1999, pursuant to Section 39 of the 1998 Mining Act. In total, the SML area covers 17,509 hectares of land. GGML has also been granted permission to mine in the Geita Forest Reserve (permit issued in October 1999) by the Ministry of Natural Resources and Tourism, specifically the Forestry and Beekeeping Division. As more than 70% of the SML area falls under the Geita Forest Reserve, it clearly threatens the biodiversity in the area (Box 6.1). The Geita Forest Reserve is comprised of six forest reserves (Geita Hill, Rwamgasa, Usindakwe, Mienze, Ruande and Sinde Hill forest) and home to several rare species. The total land area allocated under the SML and Prospecting License (PL) is 33,387.5 hectares (Table 6.1).

Box 6.1 Forest clearance for mining activities threatens biodiversity

… The villagers and GGM workers confirm regular sightings of wildlife in the area: lions, elephants, leopards, monkeys, antelopes and birds. The current pace of clearing forest land for mining activities is very high – around 78% of the forest has already been cleared – and threatens these rare species of fauna and flora with complete annihilation.

Source: Kapondya (2008).

Table 6.1 Land managed by GGML

License category	Estimated area
Land owned by the mine (SML)	17,509 ha
License enlargement requests (Geita Hill, Katoma and Nyamonge East Extension)	2,377 ha
Land owned under Prospecting License (PL)	13,502 ha
Total land managed (licensed area)	33, 388 ha

Source: GGML Annual Environmental Report 2007, 2008.

Land disturbance is monitored and managed through a Permit to Clear System and Disturbed Land Register. In 2007, 14 permits were issued, earmarking almost 297 ha land for clearing. The majority of permits were related to road construction and exploration activities. By early 2008, there were 2,978 hectares of disturbed land, which is about 9% of the total of 33,387 hectares (SML and prospect areas; Table 6.2).

Table 6.2 Areas with different categories of disturbed land

Category	Estimated area
Open pits	308.25 ha
Waste rock dumps	741.30 ha
Tailings storage facility	289.20 ha
Infrastructure (housing, roads, offices, plant etc.)	1,642.24 ha
Total disturbed land	2,977.70 ha

Source: GGML Annual Environmental Report 2007, 2008.

Deforestation from surface mining has long-term effects, which persist even after the soil is replaced and trees are planted once the mine is decommissioned. The new species that will be introduced can potentially influence the composition of the top soil and subsequently determine soil fertility and the duration of fallow periods for some crops. In addition to soil erosion due to destruction of surface vegetation, there is a significant reduction in the available arable land and loss of habitat for birds and other animals (Box 6.1). Observations indicated that the tailing storage facility at GGML consumed 289 hectares of arable land (Table 6.2). Given an estimated maize yield per acre (1 acre = 0.404 hectares) of 5-14 bags (500-1,400 kg), this means the tailing dam has deprived farmers of at least 680,000 kg of maize per annum. The tailing storage facility, plant site and feed stockpile of GGML have endangered income and food security for 300 farming households.

Water pollution

Mining operations are major sources of both surface and ground water pollution, and four major pollution problems have been observed in GGML and BGML mining areas. These include chemical pollution of ground water and streams – especially mercury and cyanide – and dewatering effects. Also other pollution, such as air pollution and noise, has been recorded.

Chemical pollution

Cyanide, mercury and other dangerous chemicals are used during ore processing and they are major pollutants of surface and ground water. Chemical pollution can also occur through the misuse, mishandling and poor storage of explosives. Sulphur dioxide (SO_2) fumes emitted by mining operations are a source of extensive chemical pollution. In addition to chemical pollution, high levels of heavy metals can be fatal to human health and the environment, particularly aquatic life. For instance, Bitala (2008) revealed that heavy metal contamination in both soils and plants at Nyakabale village near GGML has increased beyond the permissi-

ble standard limits prescribed by the World Health Organisation (WHO). Table 6.3 shows the dangerously high levels of heavy metals (well above permissible standard levels in soils): chromium (Cr) exceeded by 60 times, silver (Ag) by 36 times, copper (Cu) by 182 times, zinc (Zn) by 42 times, mercury (Hg) by 6,060 times, lead (Pb) by 153 times, and cadmium (Cd) by 232 times (Fifield & Haines 2000). Bitala (2008) also observed that heavy metal levels in plant samples taken from Nyakabale village were above permissible standard levels for plants (Table 6.4). The results indicated Cr levels 5,682 times above standard, Ag 480 times, Cu 420 times, Zn 40 times, Hg 9,067 times, Pb 927 times and Cd 3 times above permissible standard levels (Fifield & Haines 2000).

Table 6.3 Comparison of concentration of heavy metals at Nyakabale with standard concentrations in surface soils

	Observed* (mgkg-1)		Number of times above standard	Standard** (mgkg-1)	
Trace element	Range	Mean		Range	Mean
Cr	200.000 - 19,790.000	3,620.000	60	5.000 - 1,100.000	60.000
Ag	139.000 - 760.000	90.000	36	0.400 - 70.000	2.500
Cu	1,150.000 - 8,585.000	2,726.000	182	6.000 - 60.000	15.000
Zn	107.000 - 5,555.000	2,519.000	42	17.000 - 125.000	60.000
Hg	280.000 - 3,750.000	303.000	6,060	0.004 - 0.700	0.050
Pb	64.000 - 14,945.000	3,064.000	153	1.500 - 80.000	20.000
Cd	12.500 - 520.000	58.000	232	0.010 - 2.5000	0.250

Source: *Bitala (2008) and **Fifield & Haines (2000).

Table 6.4 Comparison of concentration of heavy metals in sampled plants from Nyakabale with standard concentrations in plants

	Observed* (mgkg-1 dry weight)		Number of times above standard	Standard** (mgkg-1 dry weight)	
Trace element	Range	Mean		Range	Mean
Cr	1.000 - 6,380.000	1,136.314	5,682	0.020 - 0.200	0.200
Ag	1.500 - 144.000	72.750	480	0.009 - 1.500	0.150
Cu	18.500 - 5,120.000	2,097.571	420	1.000 - 12.000	5.000
Zn	110.000 - 4,105.000	1,185.814	40	12.000 - 60.000	30.000
Hg	1.000 - 270.000	90.667	9,067	0.001 - 0.040	0.010
Pb	325.000 - 695.000	927.043	927	0.300 - 10.000	1.000
Cd	1.400 - 4.200	2.800	3	0.020 - 0.500	0.100

Source: *Bitala (2008) and **Fifield & Haines (2000).

The picture for heavy metal levels in BGML could not be established as there is no independent study of the pollution in this area. There have been extensive media reports – between May and July 2009 – on severe toxic leakages from BGML's sister project in North Mara Gold Mine (NMGM) in Tarime (eastern part of LVGB) into the Teghite River, claiming 46 human lives and 200 dead livestock (Box 6.2). According to these media reports, NMGM is polluting the environment in the villages and water bodies that surround the project. The levels of heavy metals and cyanide in the water and sediments of the Teghite River are manyfold higher compared to the permissible standard levels (Fifield & Haines 2000). For example, Ni was 260 times, Pb 168 times and Cr 14 times higher. These pollutants are said to originate from potential acid forming (PAF) waste rocks of NMGM's tailing dam (*ThisDay*, Thursday 9 July, 2009).

Box 6.2 Background to mass poisoning of North Mara villages

The human and animal tragedy in the area surrounding the North Mara Gold Mine began unfolding several years ago, when people living around the area started complaining about the effluents from the tailing dam released into the nearby Teghite River had serious health effects on nearby residents. The communities witnessed mass destruction of the environment – caused by mining activities. As the elders shared, "there is a tailing pond whose liquid oozes and pollutes water sources, the grasses are burnt by corrosive fluid which flow from the tailing dam … while cattle are grazing within the unfenced upstream side of the tailing dam at Matongo Village. This is dangerous as both animals and humans may be at risk from improper tailing material containing cyanide and heavy metals". Independent environmental experts indicated that heavy metal and cyanide levels around the North Mara Mine were higher than the permissible levels and were thus a threat to both flora and fauna. A report issued by the ward executive officer for Kibasuka, listed the names of persons that died in the ward since May 2009: 18 persons in Nyakunguru Village, 18 persons in Nyarwana, 10 persons in Weijita. Their deaths are blamed on contact with the contaminated water. In total, 46 persons (24 men and 19 women) perished, and 200 heads of cattle were lost.

Source: *ThisDay*, Thursday 9 July 2009.

The accumulation of heavy metals in soil and water leads to increased bio-concentration and bio-accumulation in plants, fish, livestock and humans (Cunningham & Saigo 2001). Bio-concentration and bio-accumulation of heavy metals in plants, fish and livestock poses a health risk to humans, as they are at the end of the food chain (higher trophic level). Consumption of food and water polluted by heavy metals has been connected to many health problems that endanger human life, including a wide range of carcinogenic pathogens (skin, liver and kidneys), teratogenic effects;], mutagenic effects as well as brain damage (Weitzel 2006; Nicholas 2004; Turkdogan *et al*. 2003; WHO 1996, 2001). In addition, intoxication from a higher concentration of metals, such as cadmium and lead,

may weaken the immune system, making the victims susceptible to diseases (Iyengar & Nair 2000; WHO 1996). The WHO's (1996) prescribed upper limits for safe dietary intake of trace elements for humans (65 kg body weight) are presented in Table 6.5.

Table 6.5 The upper limits of a safe dietary intake of trace elements

Trace element	(mgday-1 safe limit)*
Cr	0.250
As	0.139
Cu	12.000
Zn	45.000
Hg	0.046
Pb	0.232
Cd	0.065

Note: * limit per 65 kg body weight.
Source: WHO (1996).

Despite the fact that mine workers are provided with protective gear (e.g., masks, gloves, helmets and safety boots), there are widely reported cases showing the detrimental effects from using cyanide and mercury in gold extraction. Kapondya (2008) noted the existence of water pollution, skin irritation and deaths of livestock that drank contaminated water (Boxes 6.3 and 6.4).

Box 6.3 Water pollution due to mining activities

As an elderly woman of Mtakuja village (Kabula, 58 years) attests,
"[T]he water that comes from the remnant rocks is poisonous and cannot be used for domestic use and livestock … we are now told not to use even the rain water we collect on our rooftops because the dusts washed from the tops of our houses have traces of the remnant rocks … and when this water is taken and stored for a period of time it turns blackish/greenish … caution had been given not to use it … the water from these remnant rocks also trailed down to our local wells … when women go to fetch water they have to look if there are some dying frogs … for fear of poisons."

Dewatering effects

Mining operations have direct dewatering effects. In addition to consuming large quantities of water, mining operations also excavate large tracts of land and pile large mounds of earth along water courses, thus preventing sources of water from

Box 6.4 Livestock deaths blamed on suspected cyanide poisoning of Mtakuja River

Mzee Majiyatamu Kufungulia (61 years old) from Nyakabale village shares his story:

My sixteen cattle and two sheep died after drinking the suspected poison which has trailed down the river Mtakuja-this was in 2000. The GGML people are very clever … they rushed on the scene … took samples and paid 70,000 TZS per head of cattle and they buried them … but the results never been relayed back … people are eager to know the cause of death of animals and the chemical status of the river … I would have taken the samples myself but I did not know where to start and where to take them, so the GGML took charge of the process and promised to send the results to the community … which is not yet done … I asked the GGML staff … and he answered cleverly that … "we are condemned to cause death of the animals so what did you expect us to do?" I now recognise they do have the results … so I am supposed to make follow up myself?

recharging from ground water sources. This ultimately may reverse the direction of the ground water flow and lead to active dewatering. Many boreholes and hand dug wells now provide less water or have completely dried up. As reported by a Geita District employee, 'mining activities have caused intense geo-morphology alterations such that water is now flowing from the points of intensive excavation closer to mining sites and boreholes in most human settlements have dried up, while seasonal rivers are flowing throughout a year'(focus group discussions, Geita District engineering staff, May 2008).

Air pollution and noise

Mining operations and mining support companies release particulate matter into the ambient air; pollution concerns are primarily focused on airborne particulate matter, black smoke emission, noise and vibration.

Airborne particulate matter

Airborne particulates are of major concern in mining neighbourhoods. These include sulphur dioxide (SO_2), nitrogen dioxide (NO_2), carbon monoxide (CO) and black smoke. They are usually produced by site clearance and construction, open pit drilling and blasting, loading and haulage, vehicular movements, ore and waste rock handling as well as heap leach crushing by large-scale mining companies. Other sources include fumes from the roasting of sulphide ores by assay laboratories and refining processes. The release of airborne particulate matter in the environment – particularly minute dust particles of less than 10 microns – is a big health threat to human and animals living close to large-scale mining operations, especially open-pit mines. High levels of exposure to all types of fine dust have the potential to cause respiratory diseases and disorders and can worsen chronic conditions, such as asthma and arthritis. The dust arising from gold min-

ing operations has a high silica content, known to cause silicosis and tuberculosis. Medical reports have confirmed increasing rates of tuberculosis, while silicosis has not yet been reported in either BGML or GGML.

Dust deposits on vegetation make it unpalatable for both people and livestock. Observations revealed the consumption of green vegetables had fallen in both mining neighbourhoods among the households that have become aware of the deleterious effects of dust. This has severely reduced the nutrition value of their sustenance, especially pregnant women and children. The black smoke from burning fuel, fumes from assay laboratories and ore roasting at mines are additional sources of airborne pollutants.

The other particulate matter is sulphur dioxide (SO_2), which is produced by roasting sulphide ore by mines and assay laboratories, vehicle emissions and domestic energy sources (such as liquefied petroleum gas and kerosene). High concentration of SO_2 may lead to increased acid formation in the atmosphere, subsequently producing sulphuric acid (H_2SO_4) which in turn causes breathing difficulties and discomfort. According to Park (1987), toxicity levels between 0.5-1.0 g/l have no visible effect on health, but toxicity levels greater than 1.5 g/l can result in breathing difficulties and at 200 g/l and above can cause notable breathing discomfort. Some of the harmful effects of sulphuric acid include heart disorders, asthma, bronchitis, lung problems and other respiratory disorders.

Noise and vibration pollution

Common sources of noise and vibration in large-scale mining areas include mobile equipment as well as air blasts and vibration from blasting and other machinery. Noise – especially high pitched noise – is a health hazard (prolonged exposure injures the auditory system). It also causes structural damage to buildings (cracks), stress and discomfort. Further, noise can frighten animals and interfere with mating by suppressing their libido and causing abortions – thus shrinking both domesticated and wildlife populations. Observations confirmed widespread and deafening noises emanating from open-pit mines. Communities have lodged their complaints with the district council authorities, blaming the frequent blasting in the mines and the resulting ground vibrations for the considerable structural damages of their houses (e.g., walls cracking) (Photos 6.1 a & b). Documenting the impact on the residents of the area, medical reports indicated increasing frequencies of ear ailments in both BGML and GGML mining neighbourhoods (Figure 6.3b).

Photo 6.1 a-b
Structural damage due to increased mining operations: (a) Nyakabale (near GGML) and (b) Kakola (near BGML)

a b

Health impact

Mining accidents and increased rates of illness cause major adverse effects on the health of the population as a whole. The effects of some of the pollutants manifest themselves immediately (e.g., cyanide) but others (e.g., mercury) take a long time to become visible. According to medical reports from the district medical offices in Kahama and Geita as well as from respective regional offices in Shinyanga and Mwanza, common mining related diseases observed during the 2002-2006 period include but are not limited to vector borne diseases (e.g., malaria), respiratory tract diseases (especially pulmonary tuberculosis), skin diseases, eye diseases and physical injury to small-scale miners.

Malaria

Malaria is a major public health concern for all Tanzanians, especially for pregnant women and for children under the age of five. It is the leading cause of morbidity and mortality among out-patient and in-patient admissions and accounts for up to 40% of all out-patient attendances (MOH 2006). Many parts of the country, including the uplands, report malaria transmission throughout the year, although it is more common during and after the rainy season. Persons with insufficient immunity to malaria after previous exposure suffer the worst cases of the disease. Children under the age of five are at the highest risk, followed by pregnant women because of their reduced natural immunity. Pregnant women are four times more likely to experience malaria-related complications than non-pregnant women. Malaria also causes miscarriages, low birth weights, and neonatal mortality (Jameson 1993).

Malaria is the cause of many societal and economic burdens, from school absenteeism to low productivity in the workplace. In the short term, widespread malaria reduces agricultural production and other economic outputs, while in the long term, the cumulative effect may decrease national economic capacity and development. It is the leading cause of child and maternal mortality in the mining neighbourhoods, with an average annual crude mortality rate of 399 per 100,000 in Geita and 348 in Kahama (national annual average is 141 per 100,000). Geita

and Kahama districts recorded the highest incidence of malaria in terms of morbidity, with an annual incidence of 553 per 1,000 in Geita and 524 per 1,000 in Kahama (national average stands at around 500 per 1,000). The inhabitants blamed the mining operations for the high incidence of malaria. The mining operations promote environmental modifications that favour malaria vector development (mosquitoes). The activities created open pits and altered the course of flowing water, thus producing bodies of stagnant water, which serve as perfect mosquito breeding sites. Also, large-scale mining companies had attracted large numbers of migrant workers, some of whom are carriers of malaria parasites. Not only do they themselves suffer under the infliction, but they also increase the risks of malaria epidemic breakouts.

HIV/AIDS

HIV/AIDS prevalence is on the rise with each subsequent year, according to data extracted from voluntary counselling and testing (VCT) centres and from monthly blood donor reports. GGML and BGML have an exceptionally high and rising HIV prevalence; in 2002 it was 8.1%, while in 2006 it had increased to 18.3%. The prevalence rate in mining neighbourhoods is higher compared to the national average of 8.8% recorded in 2008. The trend in terms of number of patients and percentages indicate an increasing pattern in both mining neighbourhoods (Table 6.6). GGML has a much higher number of reported cases, as its population is four to five times larger than BGML's (Figure 6.1).

Table 6.6 HIV/AIDS prevalence and new reported cases, 2002-2006 (%)

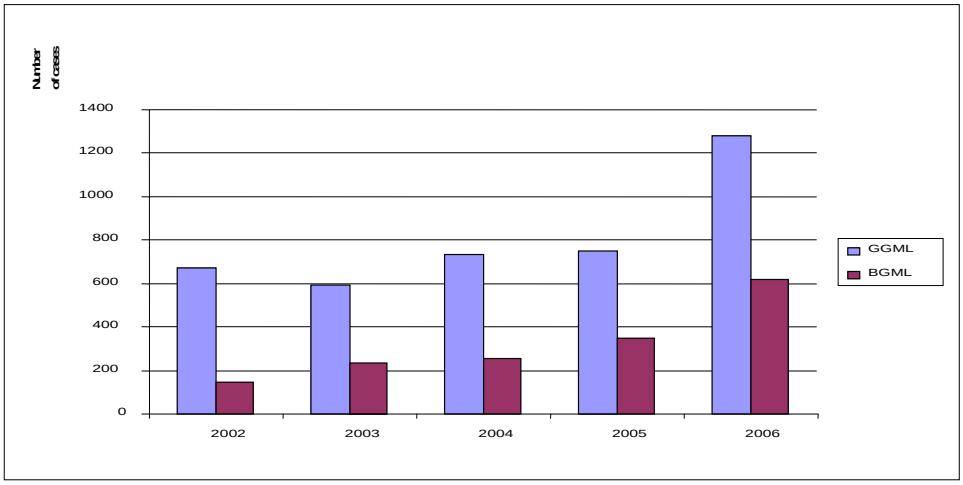
	2002	2003	2004	2005	2006
HIV/AIDS prevalence (%)					
GGML	9.2	10.4	13.7	12.7	18.3
BGML	8.1	8.8	8.9	9.2	16.9
HIV/AIDS reported new cases (numbers)					
GGML	670	595	736	750	1,278
BGML	146	233	256	348	618

Source: District HIV/AIDS/STDs control implementation reports 2002-2006.

Sexually transmitted diseases (STDs)

Sexually transmitted diseases (STDs) are known to facilitate sexual transmission of HIV infection, and the control of STDs has been recognised as one of the key strategies for preventing HIV infection. The most commonly occurring STDs in

Figure 6.1 HIV/AIDS trend in mining neighbourhoods



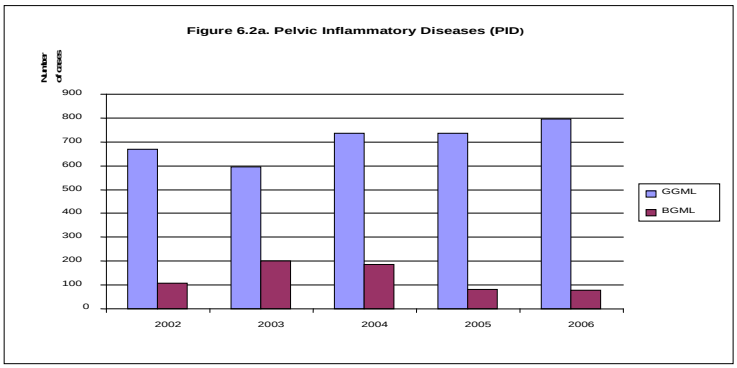
mining neighbourhoods include genital ulcer discharge (GUD), genital discharge syndrome (GDS), pelvic inflammatory diseases (PID), urinary tract infections (UTI) and syphilis. Observations revealed an increase in STD cases in both mining neighbourhoods. Again, due to its larger population, GGML posts much higher numbers compared to BGML (Table 6.7 and Figure 6.2 a-d). The observed increases in STDs and HIV/AIDS prevalence can be attributed to two major factors: the high influx into the area of sexually active (15-45 years old) expatriates and local job seekers (*wasoteaji*), and the increased number of small-scale miners and entrepreneurs operating in the neighbourhood.

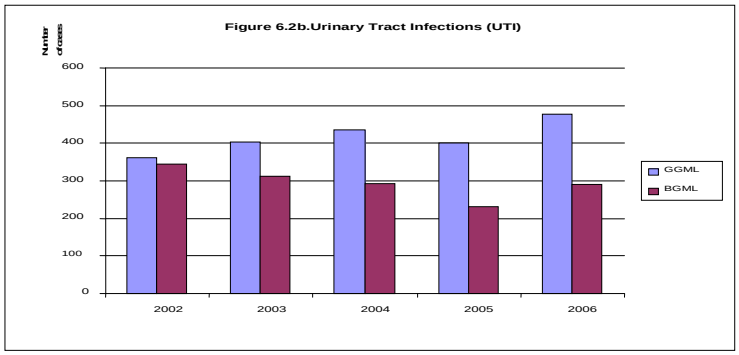
Table 6.7 Reported cases of STD infections, 2002-2006

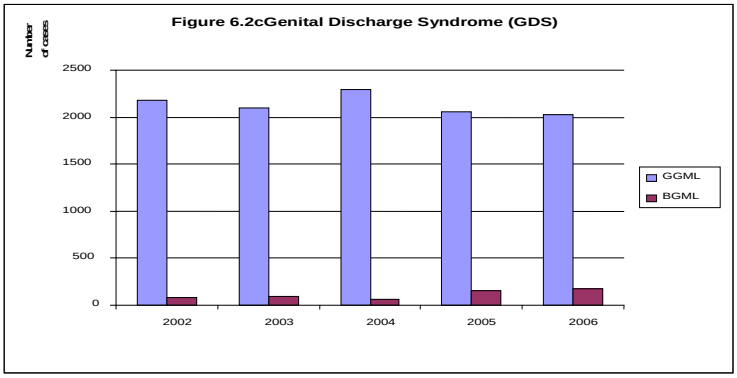
	2002	2003	2004	2005	2006
Genital ulcer discharges (GUD)					
GGML	1,230	1,312	1,256	4,014	3,334
BGML	47	40	22	95	68
Genital discharge syndrome (GDS)					
GGML	2,176	2,097	2,294	2,061	2,024
BGML	78	93	66	150	175
Pelvic inflammatory diseases (PID)					
GGML	670	595	736	737	795
BGML	106	201	185	83	79
Urinary tract infections (UTI)					
GGML	362	403	436	400	478
BGML	344	313	292	231	291

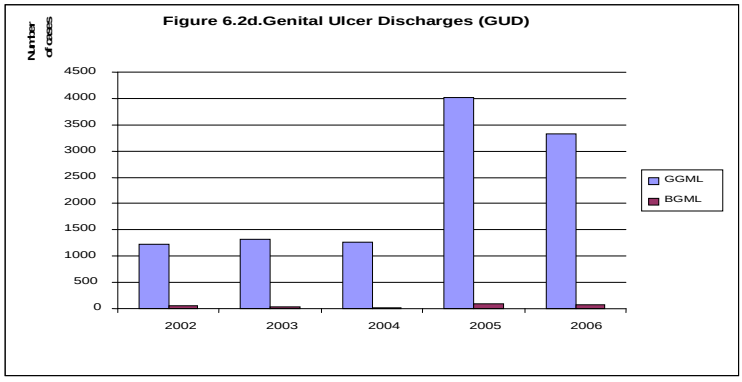
Source: District HIV/AIDS/STDs control implementation reports 2002-2006.

Figure 6.2 a-d STD trends in mining neighbourhoods









Skin diseases

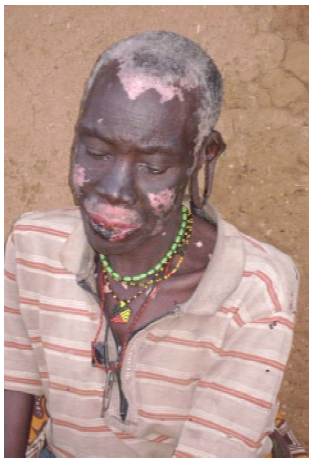
Skin rashes are very common (Table 6.8), especially among children. The communities blame the rashes on allergic reactions to the stream and well waters, which they feel are very polluted from mining-related chemicals. A photo taken from the neighbourhood of North Mara Gold Mine, one of the large-scale gold mines in the Lake Victoria Greenstone Belt, shows the appalling impact on the victim's skin (Photo 6.2).

Table 6.8 Reported cases of skin diseases, 2002-2006

	2002	2003	2004	2005	2006
GGML	344	313	292	231	291
BGML	311	260	168	324	272

Source: District Health Department Implementation Reports 2002-2006.

Photo 6.2 The human cost of gold and the deadly price to pay (as reported by *ThisDay*, 26 June 2009)



Other diseases

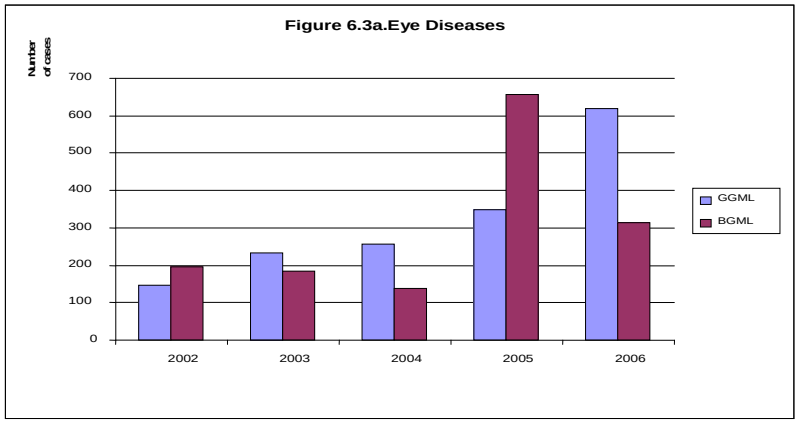
Also other mining and pollution related diseases were reportedly on the rise. These include diarrhoea, asthma, ear diseases, eye diseases and tuberculosis (Table 6.9 and Figure 6.3 a-e). There has been increased reporting of diarrhoea in the area. Surface water run-off is most likely responsible for an increased and widespread presence of mining-related toxic substance in the area during the rainy season. Incidents of asthma, ear and eye diseases as well as tuberculosis are reported on the rise in mining neighbourhoods. The inhabitants complained that these are caused by dusts, chemical toxicity and the deafening sound from explosion blasts and machines.

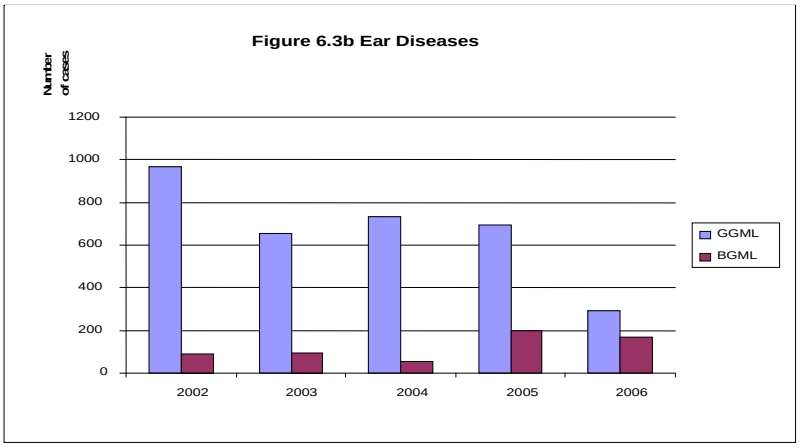
Table 6.9 Reported cases of diarrhoea, asthma, ear and eye diseases and tuberculosis, 2002-2006

		2002	2003	2004	2005	2006
Diarrhoea	GGML	754	732	686	771	886
	BGML	291	656	732	692	969
Asthma	GGML	147	140	122	195	168
	BGML	112	61	133	24	22
Ear diseases	GGML	969	656	732	692	291
	BGML	90	95	55	198	170
Eye diseases	GGML	146	233	256	348	618
	BGML	196	184	138	656	314
Tuberculosis	GGML	754	732	686	771	886
	BGML	322	377	394	386	422

Source: District Health Department Implementation Reports, 2002-2006.

Figure 6.3 a-e Diarrhoea, asthma, ear and eye diseases and tuberculosis trends in the mining neighbourhoods





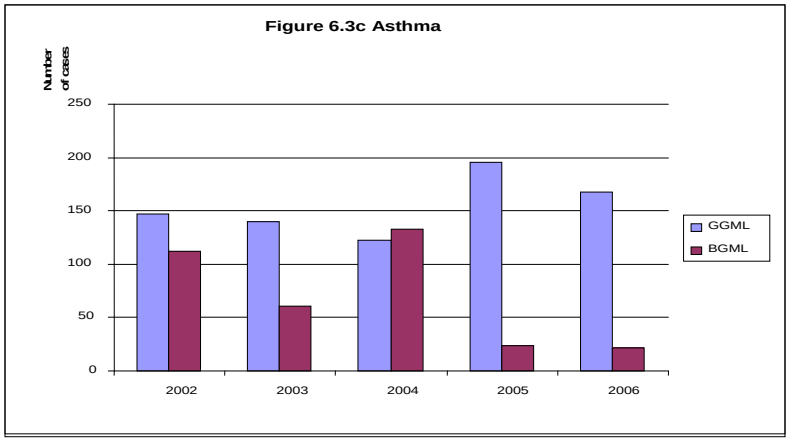


Figure 6.3c Asthma
Number of cases
250
200
150
100
50
0
2002
2003
2004
2005
2006
GGML
BGML

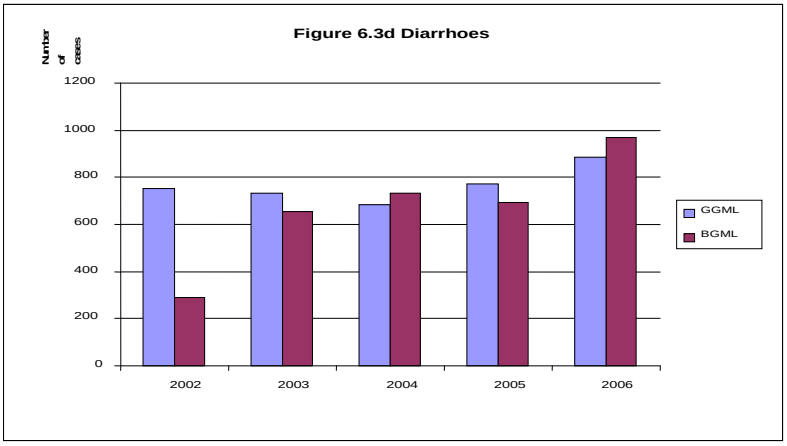


Figure 6.3d Diarrhoes
Number of cases
1200
1000
800
600
400
200
0
2002
2003
2004
2005
2006
GGML
BGML

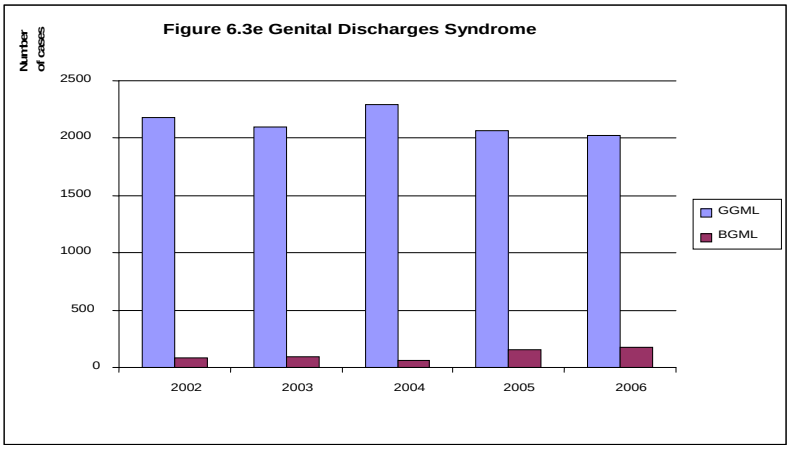


Figure 6.3e Genital Discharges Syndrome
Number of cases
2500
2000
1500
1000
500
0
2002
2003
2004
2005
2006
GGML
BGML

7

CSR in Tanzania's mining industry

> While protest can raise issues, it takes engagement to win the argument. When human rights are abused and the environment is degraded, protest against irresponsible mining companies is very important. However, community development must consider direct engagement with mining companies in discussion and debate as means to further influence corporate development decisions and actions. (Chandler 2008)

Introduction

Like many other development projects that operate in remote locations, mining can have severe adverse consequence on lives, livelihoods, culture and the environment. For decades, the mining industry has suffered criticism due to its poor record of community accountability. Hutchins *et al.* (2007) noted that the mining industry has a poor reputation for its environmental and social performance. McAllister (2001) showed that the mining industry and tobacco companies come in last place in public perception surveys in the United States for socially responsible business practices. A broad range of community stakeholders share the same view, and civil society groups have taken the lead to protest against mining expansion, both locally and worldwide. However, mining is important for diversifying the community's income sources. It brings rapid development and change, such as employment opportunities, a large influx of capital and in some cases in-migration and resettlement. For some communities – particularly those with no prior mining history – it is particularly difficult to take advantage of the benefits and, at the same time, cope with mining's adverse impact. Therefore, mining's contribution to development has been the subject of intense scrutiny under various approaches: 'resource curse' theories (Auty & Wurhurst 1993; Sachs & Warner 1997; Davis 1998); approaches focusing on revenue transparency (EITI 2006); studies of redistribution of benefits from national to local level (Reed 2002); and disputes about impacts on local communities (Manteaw 2007).

Botswana is the only country – among the many financially-poor but resource-rich African countries – that has succeeded in generating substantial economic growth through extraction of natural resources, diamonds to be specific. Three decades ago, Botswana was among the poorest countries in the world, while today it is among the upper echelon of middle income OECD countries, serving as an example that the combination of good governance and natural resource extraction can bring prosperity (de Groot 2009). This was achieved through integration of a stable government and the attraction of FDIs. In contrast, many other African countries endowed with mineral reserves are continuously associated with low economic growth and conflict (Democratic Republic of Congo, Nigeria, Sudan, Angola, Sierra Leone and Liberia).

Mining companies are increasingly expressing their intent to contribute to sustainable development of the communities and regions in which they operate. The industry has increasingly been promoting sustainability and looking to provide direct benefits to these communities, largely in reaction to bad public image and pressure from civic society groups. According to Hutchins *et al.* (2007), 'corporate social responsibility' (CSR) plays a central role in the strategy to remedy the bad image of mining companies. The four biggest mining conglomerates (Vale, Anglo-American, Rio Tinto and BHP Billiton) have increased their total CSR expenditures to US$ 1 billion for 2007.

CSR policies in the mining industry

Mining industry policies encourage building amicable relationships with local communities and recognise the responsibilities of mining companies (World Bank 2005; ICMM 2005). This commitment is clearly reflected in the companies' mission, vision and policy strategies. For instance, AngloGold Ashanti's GGML statement highlights key aspects in the areas of occupational health, safety, the environment and communities (OHSEC). It cites that the company values people, respects host communities and believes that excellence in OHSEC is essential for the sustainability of its business in the host country. GGML is committed to creating value for shareholders and stakeholders alike in an environmentally responsible way (AngloGold Ashanti 2008). The strategy of Barrick's BGML is dedicated to responsible mining. The strategy insists on delivering financial rewards to shareholders, providing safe and healthy workplaces for employees, protecting the environment and sharing the benefits of mining with local communities and host nations (Barrickgold 2009).

Despite the fact that CSR policies are tailor made into project-specific regional and operational strategic plans (such as BGML and GGML), they usually tend to concur with general corporate policy – mirroring the mother company's vision, mission and objectives (AngloGold Ashanti 2007). The policies share the funda-

mental principles of safety, value, respect and accountability. There is an emphasis in most companies' CSR policies on addressing the problems that communities living around mining operations face. The policies also recognise that it is important to follow regional and national developmental goals. Furthermore, they recognise that working in partnership with experts from international organisations is beneficial for delivery and success of CSR policies. Transparency, benchmarking, monitoring, regular reporting and sustainability are key policy commitments. Also a reporting scheme is provided, thus enabling stakeholders to monitor the development of the projects. The reports are published annually under the section 'report to stakeholders' or 'report to society' (AngloGold Ashanti 2008; Barrick Gold 2008).

Policy documents focus on future areas where CSR practices can be improved. Mining companies place equally high premiums on community development. The plans for CSR within the companies and the implementation strategy mainly concentrate on the core business and follow the companies' value and principles. International, national, regional and local guidelines are mentioned but not emphasised. GGML and BGML reserve the right to allocate their funds to development projects in those areas that will best advance the company's reputations. The concept of 'community' is used in CSR policy as a collective phrase, which can be summarised to mean all people or groups who are directly affected by mining operations.

According to Szombati (2008), CSR policies focus on developing areas of excellence, regarding issues that can be improved effectively. These areas of excellence include health and welfare, education, training and skill development; sustainable economic development; environment and sustainable natural resources management; and empowering women. CSR may take two major forms: (1) the company may act alone through a community project/programme (e.g.: water and sanitation, health care, voluntary training and education, agriculture, micro-financing and infrastructure), or (2) the company may enter into partnerships with local and/or international NGOs and/or the government to implement community projects or resolve particular social and environmental problems together (Ite 2004).

Community development practice as a CSR approach to mining

Community development (CD) is a form of stakeholder engagement practice (DITR 2006). It is more 'top-down' participation compared to public relations – which focuses on improving the company's reputation through formal communication and information dissemination – or to community relations (CR) – which is based on the notion of building amicable relationship for business gains (Humphreys 2000). The mining industry has moved to institutionalising CR and CD in

mining through corporate commitments, policies, standard and guidelines, systems and processes, and the appointment of specialised community practitioners (Harvey & Brereton 2005; Kemp 2009). This professionalisation includes formal representation within the organisation's structures and hierarchies, emerging career paths and the availability of professional development.

Mining companies continue to entrench CD within their core organisational structures, particularly by establishing separate departments; for example the Community Relations and Sustainable Development Department (CRSD) at GGML and Community Development Department at BGML. Beyond core organisational structures, responsibility for CD work can be shared with other actors, such as NGOs or the government, or with both, through tri-sector partnerships (BPD 2001). Also, CD work can be 'outsourced' to contractors, foundations or trusts, which operate with varied levels of independence from the mining company.

Socio-political context of community development

Community development is rooted in location-specific communities. It describes the process of developing a community field with different social actors working together and sharing a common purpose in collective action (Wilkinson 1991). Socio-political governance recognises that community development is not the exclusive responsibility of governments: it is the responsibility of *all* societal actors (e.g., government, private sector, NGOs and individuals), which jointly participate in solving societal problems, creating opportunities and manage the projects (Moon 2002).

Community development is conceived as both the outcome and the process of social interaction (Wilkinson 1991). As an outcome, it describes the product or tasks accomplished in corporate-community interaction. For example, in dealing with 'material deprivation', CD refers to constructing infrastructure and providing social welfare (Eweje 2006). As CD implies changes (at individual, organisational and societal levels), those involved in corporate-community interaction purposely seek to improve their own capacity to take action. Donor-recipient relationships are discouraged and the actors consciously seek to create or strengthen networks through which they can work together to solve their problems and create opportunities, thus promoting sustainability (Wilkinson 1991). The impact of corporate-community interaction has been mostly measured based on the outcomes: the *process* of community development is de-emphasised. According to Muthuri (2007), in order to achieve high social goals, corporate-community interaction must be oriented towards community development both as a process and the outcome.

The contexts in which mining companies operate have changed considerably. The members of the community have become aware of the international debate on CSR and indigenous community rights. Hence, communities expect the companies to address their social and economic needs. Increasingly, the communities expect the company to play the role of the government as a development promoting agent (e.g., by providing social welfare). The heightened community dependence on mining companies and increased costs of corporate-community interaction has triggered changes in corporate-community interaction strategies (Box 7.1).

Box 7.1 The community development approach of BGML and GGML

The Social Development Policy of BGML enables the mine to develop and maintain a productive relationship with the communities through pro-active engagement of community concerns and via establishment of effective programmes. To this end, BGML embraced the community development plans that have been developed as part of the village 'Bottom-up Planning Process' with the application of PRA techniques. The process engaged members of the community in identifying development priorities at grass-root level. According to the BGML Community Development Manager, Ms. Kyesi (*pers. comm.*, November 2008), "PRA is a family of approaches, methods and processes in community development that enable people to express and analyse the realities of their lives and conditions, to plan themselves what action to take, and to monitor and evaluate the results. PRA emphasises processes which empower local people to take charge of their development."

GGML Community Relations and Sustainable Development staffer Mr. Shayo (*pers. comm.*, October 2008) commented on the company's approach to community development: "… GGML's community needs assessment is done using PRA … although not professionally conducted, at least the department is pleased to state that it is the local people themselves who identify the projects" … he continues … "although this has created problems on our side as the communities always have high expectations to see that all priorities are implemented … while in reality GGML's resources are limited and the company has other priorities to fulfil … therefore not all projects are implemented to completion as planned … this situation leads to complaints that GGML is not living up to its promises."

In the mining industry, sustainability refers to design, construction, operations and ultimately closure of mines, in a manner that respects and responds to the social, environmental and economic needs of present generations and anticipates those of future generations in the communities and countries where they work. Kumah (2006) asserts that sustainable mining is acceptable for the community: its immediate negative effects can be mitigated and its socio-economic benefits designed so as to provide a sustainable future for the local community.

The review of company documents identified some of the environmental and social initiatives employed to ensure sustainability in their operations (AngloGold Ashanti 2008; Barrick Gold 2008): putting major environmental policies

into place; designing and implementing environmental management tools and practices; installing pollution-combatting technology and implementing environmental management programmes (e.g., training and education); impact assessment and appraisals; financing and construction of community infrastructure; development of important community programmes; donations to local universities and research establishments; and building relationships grounded in respect and trust. The next sections examine the thematic focus of BGML's and GGML's CSR initiatives.

BGML's CSR initiatives

At BGML, the Community Development Department is responsible for the management and supervision of community-development activities. It seeks to promote sustainable economic growth, environmental protection, education, capacity building, health and welfare improvements for the people directly or indirectly affected by the mining project. All development projects at BGML are implemented following the relevant government policies and strategies (e.g., Tanzania Vision 2025) and the Millennium Development Goals (MDG). The department has implemented a considerable number of projects and programmes with multiple focus areas: education, water, roads, electricity, social facilities, agriculture, small- and micro-enterprise development, low-cost housing schemes and environmental protection. BGML Community Manager Ms. Kyesi noted that by 2006 her company had already committed US$ 16 million in social development monies since the start of the mining project in 1999. The major role of her department is to foster and carry forward Barrick's vision regarding community development plans for the villages around the mine project in participatory fashion (*pers. comm.*, November 2008).

According to BGML's 2006 Annual Social Development Compliance Report, these community projects have several clearly set out objectives: (1) to involve the local communities and government as much as possible in order to promote sustainability of these project after mine closure; (2) to facilitate contacts between community institutions and development partners; (3) to utilise the potential of local communities and create a skill inventory thus helping build agency in the communities; (4) to carry out community action plans and build capacity of communities to follow up on projects, review of project plans and administer projects independently without BGML intervention; and last but not least, (5) the projects intend to stimulate change in the communities. As Mr. Tweve, a staffer in the Community Development Department, pointed out,

> villagers residing around the mine are subsistence farmers cultivating within their homesteads. Some of them live in absolute poverty and are often resistant to change in their way of farming, such as planting patterns, use of certified seed and environmental conservation

> … hence, the department holds meetings wherever time allows to raise awareness and to enable them do things differently and in a sustainable fashion.

Since its inception the department has been focusing on project planning and implementation, including in-house operations and community visits. The department has been maintaining close interaction with local communities as well as with policymakers at district, regional and national levels. In order to strengthen this endeavour, the department has embarked on corporate-community engagement by sharing information through bulletins, discussions and monthly reports (BGML 2006).

Mine development often takes place in remote areas that require development of basic infrastructure. Barrick's development projects often provide the mine and local communities with basic infrastructure, such as power lines, water and sewage systems, schools, medical centres and housing.

The housing scheme

It is evident in Tanzania that due to high construction cost and lack of mortgaging institutions, most citizens have not been able to secure ownership over suitable houses (Photo 7.1). Those who live in accommodations provided free-of-charge by their employers – be it government, parastatal entities or private companies – end up empty-handed and on the street upon retiring. The Bugarama and Ilogi housing scheme is the first realistic, large-scale and non-for-profit housing project that the BGML has devised to help its employees obtain permanent housing. "Given the life span of the mine, estimated at 25 years, it is almost certain that the two villages would have grown into fully self-sustaining townships, with several additional micro-economic activities taking place as their population grows", said Ms. Mgaya, the scheme coordinator. The scheme has two major objectives: (1) to offer decent, reasonable, realistic and affordable accommodation to employees, and (2) to provide privacy and freedom to mine workers, very important from a cultural point of view.

Photo 7.1 BGML's employees settlement scheme (photo by courtesy of BGML)

Ms. Kyesi, the Community Development Manager, explained how the social context of the housing scheme provided the driving force behind the project: "[I]nferior and crowded accommodation is always an incentive to crime, stress and other social ailments as well as outbreaks of diseases, such as HIV/AIDS. Thus the housing scheme is one of the efforts towards combatting the spread of HIV/AIDS, which is highly pronounced in the remote mining areas of Africa where employees stay in controlled camps without access to their families for long periods of time."

The scheme started in 2000 with the goal to construct 1,500 houses for local employees (Tanzanians) at two sites, Bugarama and Ilogi, 8 km and 14 km from the mine respectively. First, it was necessary to strengthen basic physical infrastructure facilities, such as roads and storm drains, water reservoirs, a water pumping station and the entire water network in the two villages. The next stage was the construction of the housing units. BGML provides interest-free loans to its employees for this housing scheme. So far, 578 houses have been completed and are occupied: 263 houses in Bugarama, 315 houses in Ilogi, while another 120 houses are still under construction at Bugarama. In addition to benefitting from interest-free loans, the employees also own a well-designed and constructed house (BGML covers the costs for the architect and quantity surveyor). The total cost for an average house is about US$ 19,000, including the electrical installation.

Habitat for humanity

Realising the importance of sustainable human settlements, BGML is investing US$ 74,000 and so far has spent US$ 34,380 over three years in partnership with Habitat for Humanity Tanzania to start a sustainable, affordable housing programme for the benefit of local communities around the BGML mine site. The majority of families lives in traditional houses – locally known as *tembe* – small constructions of mud attached to a wooden frame, with grass thatched roofs and mud floors (Photo 7.2a). These houses require extensive yearly maintenance and are easily damaged during rainy seasons. The housing scheme depends on the personal motivation of the local community and has not been doing well due to poor reception in the local community. Housing Coordinator Mgaya emphasised that poverty is the main reason behind this poor performance: "the fact that the majority of the people are constrained in poverty with poor or no reliable household income. Only three houses have been constructed since the project inception in 2001, two at Igwamanoni and one Bugarama" (Ms. Mgaya, 2008, *pers. comm.*; see Photo 7.2b).

Photos 7.2 a-b Community housing project (photos by courtesy of BGML)

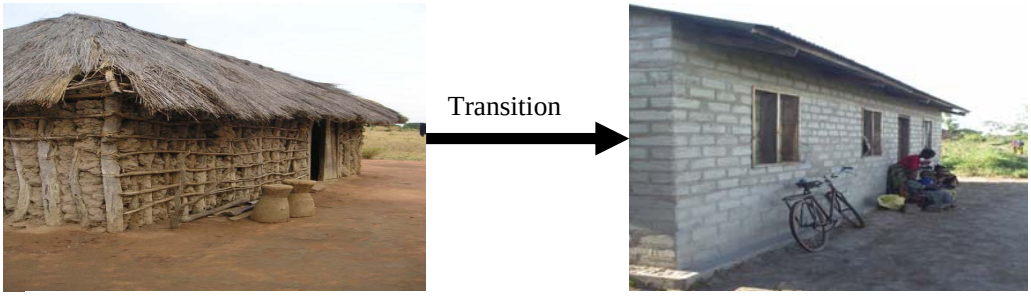
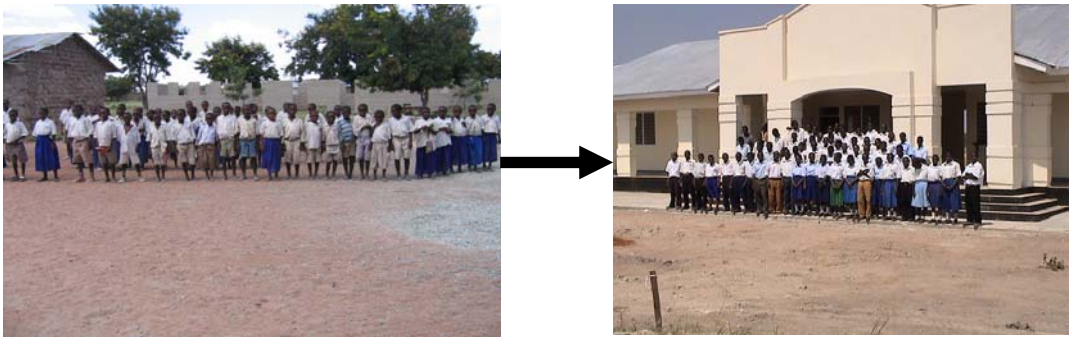


Photo 7.2 a Photo 7.2 b

Education

• Primary and secondary school education

BGML, in collaboration with CARE International, established the Kahama Education Enhancement Project (KEEP) to enable the Kahama community living around the mine to obtain quality education for their children and to provide education opportunities for adults. The project also aimed at supporting the establishment of a community-based secondary school to cater for the increased numbers of pupils. At primary school level, one of the specific objectives was to improve the learning environment and establish a good infrastructure: classrooms, teachers' houses, recreational facilities, sanitary facilities, books, desks and teacher's guidelines (Photos 7.3).



Photos 7.3 Kahama Education Enhancement Project (KEEP) (photos by courtesy of BGML)

According to Ms. Kamishna, the department education coordinator, "[I]t is evident that there is a good number and high rate of enrolment of primary school pupils in Kahama District. The quality of education provided by the schools we support is of high standards compared to the past." She noted that students from

Bugarama Ward schools were tested with those from famous schools in Kahama Town and performed well. Consequently, of the standard seven leavers, 80.7% (boys 82.9% and girls 77.3%) passed their Certificate for Primary Education Examinations (CPEE) in 2005, while 47% (boys 31.8% and girls 73.5%) were selected to join secondary schools.

• Scholarship fund

BGML currently sponsors four students from Bugarama Ward to attend secondary school in Kahama District. These students are selected for sponsorship on the basis of two criteria: their guardian is not able to afford the fees and they need to perform well in school. In addition, BGML sponsors another four students from Kahama District, enabling them to attend the International School of Moshi (ISM).

Health

BGML also assists in improving the general health by supporting provision of quality medical care (Photo 7.4). In this project, BGML focuses on providing support services that the community needs and wants; it also aims to ensure good quality health care in the area and thus elevate local standards. Major health initiatives include the HIV/AIDS Voluntary Testing Centre (VCT), the renovation of Bugarama Dispensary and the improvements done on Kahama District Hospital. In 2002, BGML opened the VCT in Kakola village. The main objective of the centre is to provide confidential HIV testing, advice and information to employees and other nearby residents.

Photo 7.4 Health infrastructure development project (photo by courtesy of BGML)

Bugarama Health dispensary, which serves communities in Bugarama Ward, has been expanded and upgraded by BGML. The company has enlarged and refurbished the building and provided equipment and medical supplies. “Previously, the dispensary was unable to adequately provide even the most basic health care services, but now its capacity is increased to an average of 20,000 patients”, reported Community Department Health Coordinator Kasekenya. BGML has also invested in upgrading the facilities and equipment at Kahama District Hospital, working closely with the district council authority and according to the district health plan.

Security

BGML’s effort to ensure peace and tranquillity by providing security for persons and their property has been their foremost contribution. The company has constructed a police station with four staff houses (two for senior and two for junior staff) that can accommodate eight families. The company also has provided the police station with a standby power generator and a four-by-four vehicle (Toyota Land Cruiser), to enable the law enforcement officers to efficiently discharge their duties.

Rural electrification

BGML, in collaboration with the national power supply company TANESCO, has extended the electrical power grid from the sub-station outside the mining site to the villages of Bugarama and Ilogi. BGML is the main financier of the project while TANESCO administers and operates the system. Access to electricity will support and speed up the development programmes. Ultimately the project is expected to stimulate sustainable and integrated local development through the growth of small enterprises in the area.

Water supply projects

In its efforts to provide a safe, reliable and affordable water supply to the community, BGML has ventured into three initiatives. The first initiative is the drilling of boreholes and shallow wells. So far, three boreholes and 20 shallow wells were drilled at Kakola, Ilogi and Buyange villages. Some wells have been installed with water pumps (Photo 7.5). To ensure long productive use of the wells, water user groups were formed at village level and trained in community management of water. The second initiative is the piped water scheme initiated and constructed at Bugarama and Ilogi. BGML is collaborating with a local NGO (WEDECO) to run the scheme, while the water user boards – locally known as *bugilo* – will manage the scheme. The boreholes, wells and piped water scheme are expected to serve a population of more than 10,000. The third initiative is a

project to tap water from Lake Victoria for mining purposes. Some of the water will also be used by the community. The pipeline route is about 50 km in length from the lake to the mine site, with 15 off-take points along the route. It should provide 30,000 people with water, i.e. 40% of its capacity will be used for the needs of the community. The water user groups have been given the mandate to manage the off-take points.

Photo 7.5 Community water pump (photo by courtesy of BGML)

Market services

BGML has built a modern market facility at Bugarama village; it is managed by Bugarama Ward and should provide for the needs of the entire ward.

Road improvements

BGML refurbished the road in Kakola village (total length of 3 km), thus improving access to other regions and communication within the district, thereby promoting local economic development. Some of the rural roads were impassable during the wet season because of large pot holes. The company has also upgraded part of the road to gravel standard (about 2 km from Bugarama to Igwamanoni village), in order to provide reliable accessibility throughout the year.

Poverty alleviation initiatives

- Food security

In response to food shortages around the mine and in Kahama District as a whole, BGML has focused its efforts to improve the situation on farm level productivity. In 2006, it provided support to farmer groups within and outside Bugarama Ward. Several on and off site trainings were given to farmer groups. The training sought to enable farmers to manage their crops (mainly fruits and vegetables) in their small- and medium-scale gardening activities in Kakola,

Bugarama, Ilogi, Busindi, Igwamanoni and Iyenze villages. BGML, through its Community Development Department, supplied maize, drought-resistant sorghum, fruits and vegetable seeds to the community, with a total value of US$ 31,000. It also donated US$ 15,000 to the Kahama District to support food relief initiatives in the district. Other beneficiaries included schools, religious institution and poor households.

• Farmer gardening groups

BGML's community development initiatives seek to increase farmer incomes through small- and medium-scale gardening. The company paid particularly close attention to small-scale agriculture so as to (1) make the agricultural sector more efficient and competitive, (2) support agricultural production in order to increase the number of new small- and medium-scale farmers, and (3) conserve agricultural natural resources. Explaining the motivation behind this initiative, Community Development Manager Kyesi noted that

> [T]raining of farmers is a tool to improve the economy of the rural families, maintain sustainability of the environment, and involve the farmers in the national economy. The latter though is more a potential than a reality; the small-scale farmers might not contribute a lot to the national economy as of now, but with training, improved methods and joint efforts they will eventually become significant contributors as farming remains the core production in Bugarama Ward. The majority live on land that is becoming too small and too poor to sustain livelihood of rural families, and still have to make ends meet (*pers. comm.*).

The Community Development Department has established farmer groups to provide top quality skills and training to new and emerging small-scale farmers in Bugarama. The aim is to enable these farmers to establish viable farming businesses, by providing them with effective practical training and support. The broad goals are to alleviate poverty and promote sustainable economic development and resource use in Kahama District in general and Bugarama Ward in particular (Photos 7.6 a & b). Through the groups, BGML intends to provide an appropriate theoretical knowledge base, hands-on practical skills training, training in farm management, and effective after-training follow-up and support. In its mission, the department seeks to empower and support farmers to improve agricultural practices by training, gardening tools and inputs as well as by helping them market their products.

The organiser of these groups, Mr. Kasekenya, noted that "by 2008, there were 33 groups of small-scale gardeners in Bugarama Ward: Bugarama (11), Ilogi (9), Kakola (3), Igwamanoni (3), Buyange (6) and Busindi (1). A total of 60 members were trained and provided with materials to assist them to train others in the groups. Almost 50% of the products are supplied to Sodexho, the official catering contractor in the mine site." Sundi's success story demonstrates the contribution made by the project (see Box 7.2).

Photos 7.6 a-b BGML's smallholder gardening projects (photos by courtesy of BGML)

Photo 7.6 a

Photo 7.6 b

Box 7.2 Sundi's success story

Mzee Emmanuel Sundi (68 years) is a retired agricultural officer that worked for the state and the Shinyanga Regional Co-operative Union (SHIRECU). He is the Chair of Bugarama Farmers' Co-operative Union (*UWABU*) and worked as small-scale miner after his retirement (before the start of the BGML project). Currently, he has reinvented himself as farmer and gardener. Mr. Sundi produces bananas, oranges, pawpaw, pineapples and a variety of vegetables that are sold to Sodexho, the official catering contractor at the BGML mine site. He is grateful for the training he received from BGML and for their extensive assistance in securing reliable markets and farm inputs.

He emphasised that "the effort of BGML has enabled me to earn between 3.5-7 million TZS per month, an income that is unexpected at my age". He further shared that this income has enabled him to send his 3 children to secondary school (one enrolled in St. Augustine University in Mwanza, while the other two secured well paying jobs at BGML as machine operator and clerk. This income has helped renovate his house and transform it from the traditional *tembe* hut into a modern house. He also cherished the assistance the BGML provided to the community in maintaining roads, health facilities, the water supply and providing regular transport between Ilogi-Bugarama and Kakola free of charge.

Community capacity building

Local governments and communities are the main beneficiaries of capacity building support, which is provided through various types of trainings. The goal is to improve their capacity to plan and manage their development initiatives and livelihood. This initiative involves empowerment training and on-going educational support for grass-root committees and local leaders. The capacity building programme seeks to empower the local population to regain self-confidence and be proud of their self-initiated development endeavours. It also helps them develop an understanding of the socio-economic structures that affect their community life and development initiatives. At the same time, village council members and other development committee members are equipped through trainings with im-

portant basic skills, improving their leadership and supervision capacities. These skills are necessary for effective implementation of community development plans, for organising locally based strategies to set up development opportunities and priorities as well as for motivating community members to become active partners in poverty alleviation. The process of empowerment is facilitated through different projects, such as participatory leadership training, farmer support schemes and training of women's groups.

GGML's CSR initiatives

According to the GGML's Social Development Compliance Reports (2006), the company embraces the mother company AngloGold Ashanti's values and principles on sustainable development. Its core value reads: "GGML is striving to form partnership with host communities through sharing their environment, traditions, culture and values. GGML wants the communities to be better off for the mine being in their vicinity" (GGML 2006). These values are binding for the company and serve as a guarantee that it will durably pursue CSR goals. GGML has been continually striving to maintain good relationships with host communities, government (local and national), NGOs and business associates. GGML seeks to promote socio-economic development without creating dependency through a three pillar approach: engagement, capacity building and partnership building.

The experience gathered through its Community Relations and Sustainable Development (CRSD) Department has enabled the company to appreciate the importance of effectively engaging and communicating with stakeholders. The 2006 detailed stakeholder identification selected 13 villages around the mine as immediate host communities. The company initiated direct communication and solicited feedback through routine community meetings. These meetings help nurture good relationships with the villages as well as help build trust and cooperation. Company documents revealed that the interaction with government entities (through the Geita Community Relations Committee) was crucial for successful community relations. Ad-hoc interaction between CRSD and local communities also helps ensure that the company's development objectives are in line with government objectives. GGML also has developed an outreach programme that brings groups of visitors to the mine site every Friday. The target groups are schools and various organisations in Geita District. Like in BGML, the CRSD Department has implemented a considerable number of projects focusing on education, health, water, roads, HIV/AIDS, social facilities, agriculture, small- and micro-enterprise development as well as environmental protection. GGML's CSR initiatives are presented in the coming subsections.

Education

GGML recognises that education is the key to development and works closely with the Geita District Council to initiate improvements. GGML is contributing to infrastructure development and promoting good learning habits form an early age. Since 2000, GGML has contributed to reaching a number of education milestones, such as the construction of five secondary schools (Kamena, Bukwimba, Katoro, Kamhanga and Busolwa) and two primary schools (Nyakabale and Nyamalembo). The company is currently building the only girls' secondary school in Geita District and has already invested US$ 75,000 in the first three phases (Photo 7.7 a-c).

Photo 7.7 a-c
Nyankumbu girls' secondary school project (photo by courtesy of GGML)

Photo 7.7 a

Photo 7.7 b

Photo 7.7 c

Health

GGML takes responsibility for health care and necessary medical services for its workers and the neighbouring villages. In collaboration with Geita District Hospital, GGML has contributed to improving the health infrastructure by renovating the hospital wards, providing of electricity and water, building a new operating theatre with new equipment and renovating the hospital's morgue. The mine also supported the landscaping of the grounds surrounding Geita District Hospital and the construction of a new maternity ward at Geita Hospital (Photos 7.8). With US$ 41,000, GGML also financed the renovation of the old operating theatre and

the purchase of new equipment. The total investment in Geita District Hospital is equal to US$ 120,000. Other health projects financed by GGML include the maintenance of Kasamwa, Bukoli and Kharumwa Health Centres.

Photos 7.8 Construction of the new operating theatre and the extension of the maternity ward at Geita District Hospital (photos by courtesy of GGML)

• The GGML-AMREF HIV/AIDS Programme

GGML contracted the African Medical Research Foundation (AMREF) to provide a comprehensive HIV/AIDS programme and also provided AMREF with the relevant technical support (Photo 7.9). The steering committee includes representatives of GGML, AMREF, the Mwanza Intervention Trial Unit (MITU), the National Institute for Medical Research (NIMR) and the Ministry of Health. The project activities are implemented around the mine site and in the surrounding communities. The 2007 project budget ($100,000) provided funding for edu-

Photo 7.9 GGML-AMREF VCT centre at Geita bus station (photo by courtesy of GGML)

cation campaigns, the provision of sexual health services, HIV/AIDS test kits and the provision of care and support to persons infected with HIV. Peer health educators have conducted 135 formal sessions annually, reaching more than four thousand persons by 2007. Additionally, 882 people were reached through informal channels. The peer educators are supported with regular trainings and monthly meetings. Regular awareness raising campaigns on HIV/AIDS and other health issues are conducted with employees and contractors. More than 7,520 leaflets were distributed around Geita and through the AMREF Voluntary Counselling and Testing (VCT) Centre. Posters advertising the benefits of knowing one's HIV status were posted around the mine. Twenty-two people received antiretroviral therapy from the Geita District Hospital. The project also initiated the post-test club, a group of HIV positive and negative members trained by AMREF to offer home-based care. Members of the group regularly visit patients in the community to provide medicines and education on care as well as to discuss referrals. This project was supported with a US$ 160,000 donation from the Kilimanjaro Challenge.

• The Kilimanjaro Challenge against HIV/AIDS

GGML championed an annual Kilimanjaro mountain climb event, commonly known as the Kilimanjaro Challenge against HIV/AIDS (Photos 7.10 a-c). The purpose of the event is to raise funds and awareness on behalf of Tanzania's HIV/AIDS problem. The Kilimanjaro Challenge had received comprehensive media coverage, which also helped raise the company's profile, both domestically and internationally. More than US$ 300,000 was raised in 2007, and US$ 140,000 was distributed to national and international HIV/AIDS projects. The 2004 Challenge enabled the establishment of Moyo wa Huruma Orphanage Centre in Geita, which is administered in collaboration with the Catholic Diocese of Geita. The orphanage formally opened in 2006 and has been looking after 36 orphans who lost their parents due to the effects of HIV/AIDS. According to Ms. Mabula, a CRSD staffer, "the Kilimanjaro Challenge will continue to give priority to the orphanage during the distribution of money" (Ms. Mabula, 2008, *pers. comm.*).

• Operation Smile

Operation Smile is a popular health project carried out by GGML as part of its Community Relations and Sustainable Development programme, providing surgical treatment for harelip disorders among children and adults. Harelip (today called cleft-pallet lip, see Photo 7.11) refers to a split upper lip. Ms. Mabula noted that "by 2008 the Operation had already benefited 111 Geita residents with

Photo 7.10 a

Photo 7.10 b

Photo 7.10 c

Photos 7.10 a-c
Kilimanjaro Challenge and its beneficiaries
(photo by courtesy of GGML)

Before After

Photo 7.11
Harelip patient before and after the surgery (photo by courtesy of GGML)

cleft lips, operated at Bugando Hospital in Mwanza by a volunteer group of Australian doctors, as part of the rehabilitation programme named 'Operation Smile'". The doctors are organised by the Tanzanian Consulate in Australia, while GGML paid the cost for community mobilisation, hospital beds, transport and hotel accommodation for the beneficiaries and their caretakers' (GGML 2005). The Australian surgeons have improved the capacity of Tanzanian surgeons at Bugando and Muhimbili hospitals to carry out the operations. This ex-

perience should increase the frequency as well as the number of persons who will benefit from the operation at reduced costs.

Small-scale mining

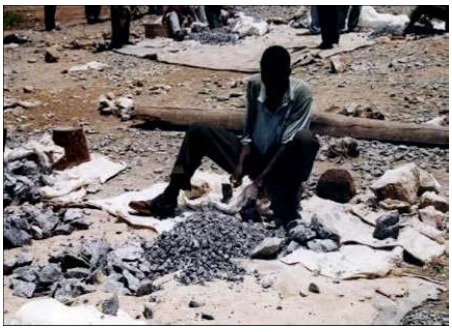
The informal sector has been thriving for a long time in the Lake Victoria Greenstone Belt, due to its richness in various minerals, particularly gold. However, the current mode of small-scale mining is not sustainable. GGML is committed to finding means of assisting small-scale mining operations, because they provide a livelihood for many families. Its effort is geared at building an alliance with other stakeholders in order to raise awareness of the social, health, safety and environmental risks associated with the current mode of small-scale mining. GGML engaged three small-scale miners as fulltime members of its mine rescue team. They were offered rescue and first-aid training and have been performing rescue operations in and around the region. The miners are expected to play a crucial role in awareness raising campaigns in the surrounding communities. GGML organised a small-scale mining fair, in collaboration with United Kingdom's Department for International Development (DfID), United Nations Industrial Development Organization (UNIDO) and local small-scale miners. According to CRSD staffer Mr. Mihayo, "this interaction enabled small-scale miners to identify opportunities to access appropriate technology and intervene regarding the health and safety risks associated with their mining operations". Photos 7.12 a-c show images of small-scale mining operations.

Photos 7.12 a-c Small-scale mining projects (photo by courtesy of GGML)

Photo 7.12 a

Photo 7.12 b

Photo 7.12 c



Nyakabale agricultural project

The Nyakabale agricultural project started in 2001. The objective of this project was to establish an initiative that would benefit the local communities displaced by the mine concession area. It sought to improve relations between mining companies and local communities as well as to offer communities alternative sources of income. The project focuses on the promotion of environmentally and socially sustainable cultivation of cash crops (Photos 7.13 a-d). Joining 60 farmers in a officially registered co-operative, the project meets 65% of ATS' fruit and vegetable needs (ATS is the official catering contractor of the GGML mining site). The co-operative is financially supported by GGML, with US$ 18,400 granted for extension services, marketing and financial management. The project has expanded to include environmental education at local primary schools, indigenous tree nursery and poultry production.

Photos 7.13 a-d Nyakabale agricultural project (photos by courtesy of GGML)

Photo 7.13 a

Photo 7.13 b

Photo 7.13 c

Photo 7.13 d

Nyankumbu brick project

The Nyankumbu brick project was developed by the community to locally produce and sell cement bricks (GGML is the primary customer and has also assisted the group with a brick-making machine, training and financial management skills) (Photos 7.14 a & b). The project is managed by a locally formed

committee, which is registered as a co-operative. The project is now self-sustainable, and the profits it generates are used for other development initiatives in Nyankumbu village.

Photos 7.14 a-b Nyankumbu brick project (photo by courtesy of GGML)

Photo 7.14 a

Photo 7.14 b

Water supply

Securing adequate and quality water supply is a serious problem in Geita. Thus, GGML is working hand in hand with the district council to improve the water supply in Geita Town. In order to achieve this goal, GGML has initiated several projects: a pipeline water project, a community water project and the Nyamalembo water project. The pipeline water transfers water from Nungwe Bay at Lake Victoria to the mine (Photo 7.15). The pipeline has eleven off-take points, allowing water access for communities along the pipeline. In order to ensure the safety of the pipeline, the company has employed youths from the surrounding villages to assist as security guards and pays them a monthly salary. According to Mr. Mwakalobo from the CRSD, “GGML had signed an agreement with these

Photo 7.15
GGML water pipeline (from Nungwe Bay of Lake Victoria to the mine (photo by courtesy of GGML)

villages where the pipeline crosses to provide security and it pays for the guards to prevent possible vandalism. The company pays money directly to the village government and insists the guards be paid at least 80,000 TZS per month."

GGML has also established the Geita Town Water Project, which adds to the existing water supply of the town and is administered in collaboration with the district council's Department of Works. With total funding of US$ 60,000, GGML contracted Aquaterra to construct two boreholes, which are managed by the district council. Villagers used to collect water from the now dilapidated well at Nyamalembo water springs. GGML refurbished the well and constructed a suitable collection point, which provides hygienic and easy water access to the community.

Road communication network

GGML also made valuable contributions to the local road network, despite the fact that this investment has no direct functional benefit for the mine. The main goal is to facilitate access to other regions and the district, thus promoting local development. Community roads are maintained on the main routes leading into the mine: Geita-Ilogi, Geita-Nungwe Bay and Geita Town-GGM. Another new road was constructed to improve connection and shorten travel times within the community. In 2007, total expenditures for maintenance of external roads stood at US$ 553,355.

Sports and leisure

GGML sponsors an annual May Day bicycle race. Riding of bicycles is a fundamental part of rural life in Tanzania. This race is an appealing fun-filled event, which pays tribute to the skills and fitness of local riders (Photo 7.16 a). GGML also sponsors a football team, Geita Gold Star, that participates in the Premier and regional league (Photo 7.16 b). The company has constructed a multi-purpose athletic sport facility in Geita Town, accessible to all members of the community.

Large-scale mining's expenditures for community development

Both GGML and BGML are involved in improving the infrastructure and social welfare of the surrounding communities. The expenditures for social-economic projects are diverse: repairing buildings or constructing new ones, improving staff houses, donating work equipment, training of communities and workers as well as maintenance of road, power and water infrastructures. Spending varies substantially from one year to the other and makes a significant contribution to alleviating poverty.

Photos 7.16 a-b GGML sponsored sporting events (photo by courtesy of GGML)

Photo 7.16 a

Photo 7.16 b

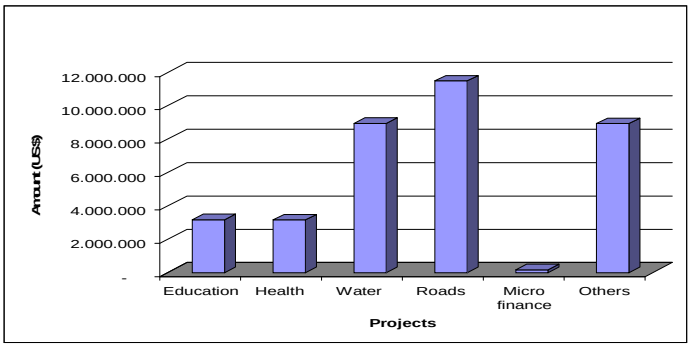
Even though the total amount of donated funds from 1999 to 2005 may appear small (US$ 35.7 million) compared to the entire FDI, it is significant because of the widespread poverty in rural areas. From total funds allocated, the lion's share went to infrastructure development projects (water, roads and electricity) followed by education and health, while microfinance projects received by far the least funds (Table 7.1 and Figure 7.18).

Table 7.1 Large-scale mining expenditures for community development (in US$)

	1999	2000	2001	2002	2003	2004	2005	Total
Education	61,431	196,929	338,886	435,179	177,183	824,276	1,131,977	3,165,862
Health	27,264	242,905	1,032,583	271,000	170,516	662,372	741,815	3,148,454
Water	2,054,866	3,307,440	1,306,420	120,494	83,999	378,965	1,298,276	8,934,272
Roads	2,015,193	3,255,230	807,157	381,778	51,213	311,407	2,417,900	11,477,216
Micro-finance		46,133	-	39,668	13,139	5,120	46,917	150,977
Others*		1,023,720	161,999	272,267	585,363	2,403,047	4,472,789	8,919,185
Total	4,158,754	8,072,357	3,647,045	1,520,386	1,081,413	4,585,187	10,109,674	35,795,966

Source: Ministry of Minerals and Energy.
* Includes expenditures on such items as electricity, youth and HIV/AIDS programmes.

Figure 7.1 Large-scale mining's expenditures for community Development, 1999-2005



8

Summary, conclusions and policy recommendations

Introduction

This study sought to uncover the impact of FDI on the livelihood of rural communities as well as on the national and regional economy. Specifically it quantified the economic, social and environmental effects of the gold mining sector, as a component of FDI in Tanzania, and its specific contribution to poverty alleviation. In addition to revealing the socio-economic gains and losses, the study also traced private-public partnerships by exploring and assessing corporate CSR policies and practices. As mining became a crucial part of the broader package of policies and development initiatives by the Tanzanian government, the gains and growth in the sector provided big potentials for poverty alleviation. However, the recent findings in the literature indicate that booming FDI in the mining sector has brought limited economic growth and scarce benefits for Tanzania and other mineral-rich African countries. This study does not challenge these findings, but rather goes deeper into the argument about the contribution of the mining sector to Tanzania's economy. The economic growth associated with the mining boom, while limited at the national scale, is large and significant for the rural communities directly affected by mining operations.

A successful mining venture should be defined as one that helps combat poverty through broad-based growth. Its primary goal should not only be to provide high returns on investment, but rather to maximise its potential positive impact on employment, skills development, provision of education, health and social amenities as well as to cultivate mutually beneficial relationships with neighbouring communities in the framework of CSR. It is a known fact that CSR re-

quires a commitment to social development principles, which can help communities deal with development challenges. CSR also provides for participation in poverty reduction efforts, in line with key policy documents, such as Tanzania Vision 2025 and Tanzania Assistance Strategy for Growth and Reduction of Poverty. The governments of Tanzania, Zambia, South Africa and the Democratic Republic of Congo are under pressure to review their legislation and contracts with mining companies in order to increase the revenue they collect from mining rents and ensure a win-win situation for both investors and the country. Critics have argued that African governments have not been able to optimise the mining tax revenue. They are criticised for not having taken advantage of the 2003-2008 price booms and captured the anticipated windfalls (Curtis & Lissu 2008; SARW *et al.* 2009). In order to analyse the direct and indirect impact of FDI in the gold mining sector in Tanzania, the following sections will provide succinct answers to the three research questions (Table 3.4). The final sections will present the conclusions and policy recommendations, and suggest areas for future research.

The contribution of the gold mining sector in Tanzania

Economic impacts of gold mining

The first research question of the thesis – regarding the contributions of the gold mining sector in Tanzania – was subdivided into five sub-questions (Table 3.4) that addressed issues of revenue, employment, mining legislation reforms and its implication to economic growth. The first, second and third sub-questions assessed the share of gold mining in national exports and foreign exchange, compared to other Tanzanian export products. They also examined mineral legislation and its reforms, tax systems and types, as well as the revenues accrued from the sector. The fourth and fifth subquestions quantified the employment opportunities gained with large-scale mining development and compared them to the employment benefits of small-scale mining, focusing on differences in income levels between these two mining subsectors. These questions examined the argument that Tanzania's mining resources are primarily being exploited for the benefit of the foreign investors and not of the country. While acknowledging some shortfalls, the study does not support this argument: the findings registered several success stories of mining investments.

Thus, the study's findings lead to the conclusion that the impact of large-scale gold mining in Tanzania is beneficial in terms of volume of investment, technology transfer and export revenue, but less positive in terms of contributions to growth and poverty reduction. The country's highly attractive mining investment policy coupled with a relatively stable political environment and sound legal and fiscal policies – introduced during the period of economic liberalisation – has

provided strong incentives for FDI. Although the earliest organised prospecting and mining took place prior to independence (key gold discoveries were made in 1894), production was insignificant until the economic liberalisation of the late 1980s and 1990s. Part of the reason for the poor prior performance of the industry is the 1968 nationalisation of the mineral sector and the failure of the State Mining Company (STAMICO) to develop the sector (blamed on inadequate human and capital resources). The legal, financial and market reforms provided new impetus for foreign and local investments, especially in mining. Thus, FDI inflows grew considerably in the second half of the 1990s when the accumulation of market-oriented reforms reached a critical mass. It provided a sound enabling framework for attracting FDI, triggering a positive response from private foreign investors abroad, largely focused on gold mining. The implemented reforms redefined the role of the government as regulator, promoter, facilitator and service provider. The ending of the state monopoly opened up opportunities for any citizen to register claims and sell minerals. Subsequently, the number of artisanal and small-scale miners increased enormously.

Before the reforms, domestic private companies, small-scale miners and artisanal miners accounted for about 10% of total mineral production in Tanzania, equivalent to US$ 55 million per year, with agricultural cash crops principally dominated exports. The entry of FDI in mining considerably improved mineral production: today the country's exports are dominated by mineral products, with gold enjoying phenomenal growth. FDI in mining implies the transfer of the right to the mining area in exchange for some economic rent paid to the government. Economic rents from natural resources are known as 'resource rents' since they are derived from natural resources. In the case of mining, resource rents encompass all direct revenues (taxes and fees from mining activities) paid to the government for the privilege of using and developing the country's mineral resources.

Government revenues from major mining operations have been increasing consistently since 1999, from about US$ 2 million to over US$ 66 million in 2005 (Figure 5.3). The increase in revenue is notable, despite the fact that most large-scale mining projects (including BGML and GGML) are in their early stage of operation. Actual revenue to the government from these mining operations averages between 3.1% and 4.3% of total yearly domestic revenue. This has prompted many observers (Curtis & Liss 2008; SARW *et al*. 2009) to conclude that exploitation of Tanzania's mineral resources does not principally benefit the development of the country, but rather the foreign investors, as the overall contribution to GDP remained under 4%, despite the impressive growth of the mineral sector (Table 5.2).

Large-scale mining investments have created new jobs, albeit in limited numbers. Their limited contribution to local employment is partly due to the capital-intensive nature of production in large-scale mines. Another reason is that large-scale mining companies (such as BGML and GGML) usually recruit labour outside of the mining site (largely in the commercial capital, Dar es Salaam). Sometimes labourers are brought in from countries with a history of skilled mining, such as South Africa, Australia, Canada, Ghana and Namibia. According to World Bank research, mining employment fluctuates with production levels and may not be a sustainable source of long-term employment for Tanzania (World Bank 1992). As said earlier, most companies have not yet recovered their capital expenditure and therefore are yet to start paying corporate profit taxes (OPM 2009).

The comparative 10 year analysis (1999-2009) concludes that employment in small-scale mining is inversely proportional to employment in large-scale mining. Employment in small-scale mining has taken a nose dive, with the associated loss of income totalling US$ 44 billion. Compared to the US$ 1.2 billion earned by workers in large-scale mining, it is a staggering 36 fold reduction (Figures 5.5 and 5.6). Employment has fluctuated considerably for Tanzanian professionals and other cadres, particularly as the sector became more capital-intensive (Table 4.1). Thus, I support the argument that the development of large-scale mining in Tanzania has made significant contributions in some aspects (production, revenue, technology and exports), while, on the other hand, there is limited progress in terms of growth (contribution to GDP and employment).

Mining legislation reform and its implications for economic growth

Tanzania overhauled its mineral law in order to align itself with the new neoliberal market economy. The reform aimed to enhance the institutional capacity for effective supervision, regulation and monitoring of mining production. Tanzania is a very attractive destination for multinational gold mining corporations, because it offers clear incentives to foreign investors, such as royalties of only 3% of the ‘net back value’ of exported gold (URT 1998: 133); a corporate income tax of 30%; a 10% withholding tax on dividend and no tax on expatriate salaries and no import duties or value added taxes (VAT) and many others benefits discussed in Chapter 4. Tanzania’s mining policy regarding redistribution of mining revenues between the state, corporations and their investors was reformed. It is the most liberal of its kind in the world, providing very favourable conditions for investment without guaranteeing a substantial government revenue (Otto 1997; Campbell 2004; Otto *et al.* 2006). Mining companies are exempted from import duties or value added taxes, allowing them to import or export billions of dollars in capital goods or gold without paying taxes (Emel & Huber 2008).

The royalty tax rate of 3% is one of the lowest in the world (Otto 1997; Campbell 2004; Otto *et al.* 2006). Legislation that permits mining companies to carry forward losses indefinitely makes Tanzania even more attractive: a company that never shows profit, never has to make income tax payments. Apart from the royalty tax, the only other fixed payment for the Tanzanian government comes from mining licensing fees, which are insignificant in relation to the size of the industry. For instance, in 2005 Tanzania received an estimated US$ 30 million in royalties and corporate taxes, while the companies produced US$ 640 million worth of gold (Tanzanian Chamber of Minerals and Energy 2007). Assuming that production costs account for half of the total value (a very generous underestimate), profits are still very high – ten times above government rents (Emel & Huber 2008).

Attracting FDI is an achievement in itself and should be evaluated separately from the distribution of wealth. With record-high gold prices (estimated at US$ 700 per ounce)[1] and expectations that they will stay high because of growing demand from China and India, the absence of windfall profit taxes and higher royalties confirms that there is a persistent relationship of disproportionately benefiting from gold exploitation – private investors gain much more than Tanzania. The strategic risk notion in neoliberal thinking situate the 'landlord' (the Tanzanian government) at a disadvantage in this struggle over distribution of wealth from natural resources. Despite its achievements in attracting FDI, the current policy framework in Tanzania is not adequate for sound management of natural resources and the mitigation of negative externalities.

Effects of gold mining on livelihood in the LVGB

Gold mining changes livelihoods in LVGB

The second research question of the thesis dealt with the effects of gold mining on the livelihoods of the communities in the Lake Victoria Greenstone Belt. The question was supported by four sub-questions (Table 3.4), which sought to assess changes in livelihoods of the Sukuma people (the dominant group in the area) during key periods: pre-independence, post-independence socialist and economic liberalisation (the first and third sub-question). The first sub-question also investigated the influence of mining development on livelihood in LVGB. The second sub-question identified the perceived socio-economic impact on the local neighbouring communities. It specifically identified the environmental, health, social, cultural and economic effects of gold mining on the LVGB. The questions were prompted by the argument that the development of large-scale mining in the

[1] Gold prices are volatile and have been going up steeply in recent years. For instance, during my fieldwork in 2007, the estimated price per ounce stood at US$ 700, while the autumn 2010 price was almost double, i.e. US$ 1,377 per ounce.

LVGB has influenced social and environmental conditions (Akabzaa & Darimani 2001). The findings of the study confirm that there are clear changes in livelihoods in the mining neighbourhoods of LVGB, noting socio-economic improvements in comparison with similar rural communities (despite the environmental and health concerns reported). The findings also noted that government and mining companies are taking steps to mitigate the adverse effects of mining activities and to ensure that TNCs implement responsible mining practices.

The Sukuma people settled large areas of land covering Mwanza, Shinyanga and Tabora. Recently (in 2007) they further expanded to Rukwa, Kagera, Mbeya, the Coast and Mtwara regions, as pastoralists were removed from the Ihefu wetland. Population pressures and increased awareness of market potentials – especially cotton – prompted significant changes. Previously the Sukuma were solely dependent on livestock (sheep, goats, cattle, and donkeys) and crop farming (cotton, potatoes, legumes, maize, sorghum, sesame and vegetables), and were organised under communal land ownership, characterised by unrestrictive individual ownership under chiefdoms. Their villages consisted of scattered households with strong social networks *nzengo* or neighbourhood groups. Under colonial rule most of these local traditional structures were reformed; a process that accelerated their disappearance. Agro-pastoralism was the main mode of livelihood among the Sukuma during the pre-independence period. Their reliance on cotton as the main cash crop has weakened in recent years, due to meagre returns (which can be blamed on declining cotton prices and inefficient marketing). Now, food crops are replacing cotton as primary cash crops. Trading of agricultural crops – mainly maize and rice – has emerged as an important non-farming activity, whereby rice is sold and maize is bought.

Customary land tenure is still dominant but is severely threatened by population pressures, land scarcity, disappearing land reserves and the market economy. The 'villagization policy'[2] increased population density and distance to the farms, which affected agricultural practices and led to the abandonment of traditional farming systems that were important for restoring soil fertility (e.g., fallowing). Now, people acquire land through buying, hiring and borrowing. Public land for grazing has been transformed to farmland in direct response to escalating demand for arable land. The severity of land scarcity in Sukumaland is rooted in the population increases and the competition for land among different social groups and economic activities. Insufficient land, poor land use planning and land alienation to private large-scale mining as well as to other commercial land uses (e.g., plantation farming) are responsible for the uncertain future that farm-

[2] The 'villagization policy' was one of the milestones of the famous Arusha Declaration. It aimed to transform rural life by increasing agricultural production through organised *Ujamaa* villages (communal settlements).

ers and livestock keepers now face. They must seek out new ways to secure a livelihood.

Among the Sukuma wealth differentiation traditionally was centred on agricultural performance. However, recently many people have grown uncomfortable with agriculture and see no future in it (the result of insufficient capital, shortage of labour, land scarcity and unreliable markets, amongst others). Hence, new ways for securing a livelihood are gaining importance, such as employment in private large-scale mining and small-scale mining sectors as well as trading. Ownership of assets (e.g., plots of land, cattle and a modern house) is viewed as an important indicator of success. There is a general shift from community indicators of wealth towards individual indicators.

Thus, mining emerged as an important non-farm activity for individuals who have no other resources than their own labour – the *kijungu-jiko* group. The youth involved in mining are largely primary school and secondary school leavers. Women also participate in non-farming activities, but mainly connected to traditional female roles, such as food vending, brewing, firewood collection and water fetching. Large-scale mining companies are a relatively new phenomenon in Sukumaland and are offering opportunities to the community to move out of their agriculture base. However, as indicated by ethnic diversity data, most miners are migrants from other parts of the country (Table 2.1). The majority of the local communities living in mining neighbourhoods are primary school leavers, while smaller proportions attended secondary or college level education. This is an unfavourable situation for the local population as far as employment in large-scale mining is concerned. They lack skills and knowledge to find work in the advanced technology mining plants and cannot compete with other skilled job seekers. Therefore, local people have very limited job opportunities in the mines. Nevertheless, the study concludes that the livelihoods of mining neighbourhoods were significantly shaped by large-scale mining development, as it helped push the population to search additional strategies for securing a livelihood (also hastened by population increases and land scarcity).

Environmental and health impact of large-scale gold mining

The main challenge associated with mining in Tanzania is to ensure sustainability and to integrate environmental and social concerns into mineral development programmes. Sustainable mining requires balancing the protection of flora and fauna as well as the natural environment with the need for social and economic development. It seems that this trade-off is not being achieved. As this study and several other ones have documented, serious negative environmental effects are associated with small- and large-scale mining in Tanzania (Mwaipopo *et al.* 2004; Kulindwa *et al.* 2003; van Straaten *et al.* 2000; Appleton *et al.* 2004;

Drasch & Boese-O'Reilly 2004; Law Reform Commission 2001). The 2001 Government Law Reform Commission stated that "while it is true that small-scale mining endangers the environment, it is also true that large-scale mining is even more damaging" (URT 2001).

The massive scale of TNC mining operations is responsible for the size of the negative impact on the environment. For example, Chapter 6 observed that people with environmental concerns over destruction of rock material see it as the cause of major damage to the local environment. Specific environmental concerns include soil erosion and degradation, air pollution, water pollution, mercury, cyanide and other chemical spills as well as noise pollution. Dust pollution in the area around the Geita Gold Mine has polluted the drinking water supply of nearby villages. Deforestation is another negative impact, as large-scale mining already cleared substantial tracks of land (Kulindwa *et al.* 2003; George 2003). The example provided in Chapter 6 indicated that 70% of GGML's special mining licenses are for locations in Geita Forest Reserve. Already a significant portion has been cleared to make room for the plant, for housing and for infrastructure. The evidence already shows visible adverse environmental effects, ranging from direct observable noise and erosion to the build up for long-term pollution in the air, water and soil. The disturbances have serious consequences for the health of the inhabitants of this region.

The thesis further cited BGML and GGML as prime examples of multinational corporations' engagement in natural resource development and how their activities have resulted in further impoverishment, marginalisation and violation of the rural communities living in mineral-rich areas (Boxes 6.1-6.4). However, these incidents also have made Tanzania aware of such adverse environmental consequences. In this regard, the National Environmental Management Council (NEMC) has taken actions to provide guidance and advice on environmental issues. The present regulatory framework for environmental protection, the 1983 National Environmental Act, was reviewed in order to ensure proper and adequate supervision of the environmental aspects of mining operations. Currently Tanzania has drafted national environmental impact assessment guidelines and requires all mining operations to prepare environmental impact assessments for their investments.

The aforementioned problems notwithstanding, it should be emphasised that most mining TNCs in Tanzania do comply with environmental standards, as prescribed by the 1998 Mining Act (which stipulates environmental management plans and conducting environmental impact assessments as pre-requisites for being awarded special mining licenses). Environmental management plans include proposals for preventing pollution, waste treatment, protection and reclamation of land and water resources as well as for the elimination or mitigation of adverse

environmental effects. Nevertheless, the study uncovers that environmental standards are not given the same (high) level of priority as the need for fair distribution of mineral revenues, not because they are not important but because of the pressing immediate need to reduce poverty (Environmental pollution is seen as having impact in the long-term).

The social impact of large-scale gold mining

Mining has both positive and negative social effects, similar to its environmental and health effects. This study demonstrated that mining operations are "successful vehicles for social integration", as they attract migrant labourers from all over the country and abroad. Mining communities, therefore, have become much more diverse than the typical Tanzanian village. Mining localities are associated with highly mobile populations, which through the actions of mining, trade and consumption create connections within the region and between rural and urban areas. This process has unleashed various social ills, such as prostitution, increased crime and drug use. Mining neighbourhoods have also become more like townships and urban centres, where increased living costs are placing many basic amenities beyond the reach of people with average incomes. This is blamed on a group of high-income earners; their presence stimulates price inflation for the majority of goods and services in the neighbourhoods. Average household expenditures fall above most urban centre and Dar es Salaam households and are much higher compared to similar rural areas prior to mining development (Table 5.6).

Several factors are cited as explanation for the high prevalence of HIV/AIDS in mining neighbourhoods, including lack of awareness, a carefree attitude, widespread prostitution and lack of access to quality health services (Kulindwa *et al.* 2003). George (2003) found that similar problems fuel the spread of HIV/AIDS also in GGML neighbourhoods. The HIV/AIDS problem cuts across all sectors in Tanzanian society and is not specific to mining areas. However, mining operations often provide favourable environment for dangerous expansion of HIV/-AIDS.

Generally, socio-demographic indicators in mining neighbourhoods reveal that the general well-being is improved compared to comparable rural areas and urban centres without mining investment. The household size is slightly below the national average, except for some villages where it is slightly higher (Nyakabale and Igwamanoni). The dependency ration is higher than the national average, because most households in mining neighbourhoods have many members living together. This tendency increases the likelihood of poverty among these households and therefore poverty incidence at household level is still high. It was also discovered that significantly fewer women are involved in mining activities than

men. Considerably more men live in mining neighbourhoods (85% men to 15% women), because the hard manual labour required by mining primarily attracts young male migrant labourers. Yet, some women do find work in mining-related activities.

Housing characteristics of mining neighbourhoods reflect the affluent state of the neighbourhoods compared to other rural areas and urban centres (NBS 2002). Conditions in GGML are much better than in BGML. Nearly 60% of households own houses roofed with corrugated iron sheets and asbestos; the rest have grass-thatched roofs. The study showed that the remaining 40% population falls below the basic needs poverty line, which corroborates the NBS 2002 findings. Other basic needs (clothes and food) were not discussed at length in the thesis. The quality of building materials is above the national average of 43%, while water is mostly provided from unprotected sources and is below the national average of 45% (NBS 2002). The primary cooking fuels are firewood and charcoal; paraffin and electricity are rarely used. The percentage of electricity consumers stands at 16% and is above the national average of 12%. Electricity is primarily used for lighting and operating domestic appliances. A small percentage of the population uses private diesel generators.

Despite the lack of clear links with other sectors of the economy, large-scale mining companies do indirectly create employment opportunities through infrastructure investments, especially in the water, health and roads sectors. Another contribution is their investment in enhancing the skill of the local population. Skill inadequacies and shortages have long been a key challenge to development (ESRF 2002; UNCTAD 2001; World Bank 2001b; Wangwe 1999). Although literacy rates are improving – moving from an estimated 67% in 1999 to 84% in 2005 – much remains to be done (URT 2005). Some other studies of Tanzania's experience are less optimistic and point to the need for government and other stakeholders to step up their efforts to equip workers with the necessary skills for the local and global labour market (URT 2003). Kweka (2007) documented that the on-the-job training administered by enterprises in Tanzania is mainly geared at compensating shortages of skills in the industry, despite the existence of well-educated manpower.

With skill shortages limiting productivity and growth, FDI is expected (at least in the short- and medium-term) to be the prime source for development of Tanzania's human capital and of new technology. The literature assesses FDI impact not only on its effect on multiplying jobs and increasing wages, but also on its performance in encouraging investment in human capital through the transfer of skills (training) and knowledge to the local workforce (Kweka 2007; Mutagwaba *et al.* 1997; OPM 2009). All large-scale mining companies administer some type of training to their staff in various fields: geology, mining, electrical and me-

chanical engineering related to mining operations; mining techniques and safety measures; processing; and finance and management (see Chapter 7). Jenkins & Thomas (2002) stressed that, because technical, entrepreneurial and managerial skills are scarce in the country, the training of local personnel by foreign subsidiaries could bring about considerable diffusion of these skills. The findings of this study strongly support their argument.

Corporate social responsibility and local economic development

The third research question concerned the linkages between gold mining and local economic development and was accompanied by three sub-questions (Table 3.4). The first sub-question sought to provide a review of corporate CSR strategies and policies as well as to identify CSR practices and delivery approaches. The second sub-question examined the nature of private-public partnerships between mining companies and CSOs, NGOs, CBOs and the local government in mining locations. The third sub-question was meant to track the multiplier effects of gold mining development in the LVGB. The questions were prompted by the argument that the mining sector has weak links with the local communities and the national economy (Kweka 2007). The study's findings reveal that mining companies have influenced socio-economic development through their CSR policies and interventions as well as through multiplier effects from the influx of various traders and contractors who flocked to mining neighbourhoods after the development of large-scale mining in these rural areas.

Thus, the findings indicate that large-scale mining companies provide benefits for local communities where they operate. Driven by their CSR principles, mining companies are helping their respective local communities by improving roads, health, education facilities and water supply systems. Expenditures in social-economic infrastructure are important in supporting the community's efforts to fight poverty at local levels (Chapter 7). While the amount spent on CSR activities – a cumulative total of US$ 35.8 million (Table 7.1) – seems small compared to the total of US$ 2.5 billion invested in mining projects, the impact is substantial (partly because poverty is so widespread in most rural areas). According to a study by Phillips *et al.* (2001), perhaps the most important impact are the indirect benefits from the expansion of mining activities in these areas. The study shows that the liberalisation of mining (and the subsequent expansion of mining activities) in Tanzania contributed to reducing poverty in rural areas in the 1990s, far above the impact of donor-funded job-creation efforts. Secondary business opportunities have been an important incentive for job creation in the vicinity of both large and artisanal mines. Miners and supporting communities need temporary lodging, restaurants, equipment and supplies, transportation, and health and other services.

Both BGML and GGML have made important social-economic investments in the local community, totalling US$ 5.9 million between 1999 and 2005 (Chapter 7). These included support for education (US$ 285,785); the improvement of health facilities (US$ 499,869); the construction of a water pipeline from Lake Victoria to the Geita Gold Mine (US$ 2 million), which provides water to surrounding villages; the construction of the Kahama-Geita road (US$ 2.6 million), which has opened up the Kahama-Geita corridor, thereby improving communication links; and the provision of support through microfinance (US$ 115,677). In addition, 1,923 workers have been trained at a cost of US$ 2.4 million. These are voluntary contributions by the company but are an important supplement to state efforts to provide social and welfare services to rural communities.

General conclusion

The main objective of the study was to analyse the direct and indirect impacts of FDI in the gold mining sector on local livelihoods, the regional and national economy. The study's findings indicate that in general large-scale mining investments have a positive impact on development, although this impact is limited in extent and limited to specific areas. Three aspects should be emphasised when analysing the direct and indirect impacts of large-scale mining in Tanzania. First, the impact on export revenue, employment, technology, skills and knowledge, and government revenue is significant relative to the low base from which the industry started in the late 1990s. Second, regardless of the massive revenues accruing to multinational corporations and the environmental degradation associated with mining operations, there is a notable positive impact on the livelihoods in local communities (through high-paying employment, various socio-economic services and infrastructure). Third, the developmental impact of FDI in mining is stifled because it is not substantially connected to the national economy and does not provide multiplier effects (contrary to the claims of the 'trickle-down' theory). However, this is to be expected: links with the national economy are poor due to the country's low level of industrial development, shortage of skilled labour and poor infrastructure. Table 8.1 presents a comprehensive framework of the impact of FDI on Tanzania; it examines FDI's positive and negative impacts by revisiting the multiple economic, policy, social and environmental impacts examined in this thesis.

Table 8.1 The positive and negative impact of FDI in the gold mining sector

Criteria	***Positive impact***	***Negative impact***
Economic impact		
	Created employment in large-scale mining (8,000-12,000) between 1999-2009.	Reduced employment by 1,400,000 jobs in small-scale mining between 1999-2009.
	Workers in large-scale mining are paid competitive income (total income earned US$ 1.2 billion during the 1999-2007 period).	Small-scale mining lost US$ 44 billion in income (i.e., a 36 times reduction)
	Mining offers more opportunities compared to other utility sectors, such as water, gas and electricity.	Generally, people from areas outside the local villages in mining neighbourhoods work in large-scale mines. The local population lacks the required skills and education. Only a few can find opportunities in large-scale mining and most work as day labourers.
	Increased production output from large-scale mining as FDI provided access to technology and good management.	
	Increased value of mined minerals due to booming prices.	
	FDI enabled the modernisation of Tanzania's mining sector by introducing state of the art technology, know-how, machinery and operational capital, enabling ore excavation from thousands of feet below ground.	
	Increased foreign currency income from mined products as minerals have dominated exports earning due to rising prices.	Reduced agricultural contribution to export earnings due to low world market prices (despite its important contribution to GDP and GNP).
	Increased government revenue from US$ 2 million to US$ 66 million.	Relatively low increase compared to the potential (due to low tax rates and tax breaks offered to investors).
		Limited growth in terms of GDP and GNP compared to sectors like agriculture and manufacturing (3.1%-4.2% GDP). Less than 10% as was stated in the 1997 Mineral Policy.
	Increased FDI stocks in mining, especially gold (doubled from US$ 2.78 billion in 2000 to US$ 5.94 billion in 2007). Tanzania attained middle ranking among African FDI recipients, behind key oil producers and South Africa.	>>>>

	Increased growth in the mining sector (faster than other sectors of the economy – with gold mining enjoying phenomenal growth).	
	One hundred percent foreign-owned (private ownership), ending government dominance in the mining sector and other business sectors in Tanzania.	Government lost ownership over the mines.
	Increased benefit to local supply chains by locally buying and contracting services.	
Policy impact		
	Stable political environment with sound legal and fiscal incentives made Tanzania popular with foreign investors.	Less popular among local investors as few incentives are offered to local investors. Due to the low tax rates and tax breaks, the government is not guaranteed a substantial tax revenue.
		Limited linkages with other sectors of the economy make it difficult for benefits to trickle-down to the poor.
	Increased control and management of mining claims through licensing and mining rights.	
	Change of the role of the government to promotion, regulation, facilitation and service provision. Restored trust among foreign investors and ended the government monopoly.	
Social impact		
	Increased non-farming activities and diversified income sources in mining neighbourhoods.	Competition for quality labour between mining and agriculture.
	Maize and rice became tradable products as the population of mining neighbourhoods grew and less people were engaged in agriculture.	Less people are engaged in agriculture, which implies high risk of food shortages in mining neighbourhoods.
	Frees up land resources for use by investors through special mining licenses.	Land becomes scarce, thus loss of grazing and farming plots for local residents, and dislocation of large numbers of households.
	The population grows rapidly and market opportunities emerge.	Population surges lead to increased social ailments, like crime, prostitution and drug use.
	Increased individualisation of all aspects of life.	Increased living costs make life difficult for poor and middle income households. >>>>

	A segment of the population became affluent with the earnings from the sector and could diversify away from agriculture. The inhabitants enjoy improved well-being, compared to other similar rural settings (even though, poverty levels still remain high).	Widens the income gap among the residents of the mining neighbourhoods. Increased incidence of STD, especially HIV/AIDS.
	Mostly men participate due to the labour intensive nature of mining work.	Less employment opportunities for women.
	Mining companies increasingly assist in strengthening socio-economic infrastructures, such as roads, health, education and water supply in mining neighbourhoods through CSR initiatives.	CSR spending is almost insignificant compared to the value of capital invested and amount of returns or foregone revenue.
		Disrupted social networks (*nzengo*) due to relocation of communities.
		Seriously affected food production for smallholders who lost their farms due to relocation, bringing reduced income and increased uncertainty for these households.
Environmental impact		
	Mining companies have comprehensive plans to mitigate and monitor environmental damage.	
	Reduced environmental damage from small-scale mining due to replacement by large-scale mining.	
		Considerable disruption of land areas (estimated 40-60% of land) by the end of mining operations.
		Deforestation leads to changes in soil characteristics and fallow practices due to land scarcity.
		Causes pollution in mining neighbourhoods (dust, noise, chemical contaminations).
		Increased structural damages due to explosions and blasting of rocks.
		Increased incidence of infectious diseases due to mining activities (malaria, tuberculosis, eye and skin ailments, and HIV/AIDS).
		Increased concentration of heavy metals, above WHO-prescribed standards in plants, water and soils. Ultimately >

		the heavy metals find their way to the food for people and livestock.
	Devised National Environmental Management Council (NEMC) to put in place, regulate and monitor environmental norms with drafted EIA guideline.	
		Loss of life – deaths of people and animals attributed to pollution in mining neighbourhoods.
		Environmental standards and concern are not given higher priority than the economic aspects of immediate needs for poverty alleviation.

The types of impact in Table 8.1 reflect the historical background of Tanzania's political economy and the dynamics of FDI and private property ownership in general. By adopting the liberal economic model, Tanzania eliminated the policy of direct government control over the economy, established after the Arusha Declaration in 1967. These liberal measures were meant to lure investors (they stayed away during the period of socialist policy) by offering them lucrative incentives and protection for investing. Therefore, the government had to forego some of the benefits it used to enjoy, in order to subsidise investment and secure longer-term benefits (20-25 years). The lucrative incentives were intended to restore investor trust and facilitate the flow of FDI into Tanzania, while establishing a favourable environment for investors to realise profits (which was successfully accomplished).

In the same period, the country lowered tax rates and exempted mining companies from paying some taxes (among other incentives), to ensure that mining investments are established in Tanzania. Thus, current tax revenues fall notably below the potential; however, this is offset by increased production and exports as well as the gains in technology and know-how enjoyed during the first decade of FDI influx. This is an indication of anticipated revenues in the next ten years: as more FDIs are expected, the government stands to harness more benefit. The effects of mining will hardly be felt in other sectors of the economy, especially during the first decade of investment, largely due to the relatively small size of the mining sector. However, its significance is highlighted by the fact that it is a substantial share of export earnings, partly due to the current boom in mineral prices.

Social and environmental concerns are equally important when analysing mining policies and sustainability of large-scale mining operations in Tanzania. Gold

mining helps to tackle poverty by helping to develop local economies, for example by introducing new supply and distribution chains, trading and outsourcing markets (Blomström & Kokko 1997, 1998; Markusen *et al*. 1997; Kabelwa 2006). The resulting income and employment (despite being small) have an impact on poverty levels, in particular helping to reduce income poverty of the local communities. Those destitute who manage to secure employment in these mining companies or the supply chains can reduce their poverty. In addition, through CSR initiatives the companies have supported health and education services, which help reduce poverty in the long run by improving the well-being and capacity of rural communities.

Furthermore, gold mining has diversified local economies by encouraging secondary business activities. These secondary businesses have multiplier effects on employment and services to the local population, which would not be there without the large-scale mining operation. Mining companies have also established and improved infrastructure and social service facilities, which can be easily accessed by poor communities in mining neighbourhoods.

Nevertheless, there are also various negative effects from gold mining. These include the large-scale transfer of revenue out of the host country and exclusion of local businesses, inhabitants and products, which results in loss of income for the displaced (Kabelwa 2006; Luvanga & Shitundu 2003). Although this study does confirm that FDI and the associated CSR activities do play a role in reducing poverty, due to the process of globalisation, modernisation and the application of new ICT, the poor may not automatically benefit from poverty reduction measures through FDI activities like gold mining. It should be noted that gold mining is a complex industry and a small component of Tanzania's economy. Gold mining is driven by the private sector – often by large multinational companies that may have little or no interest in ensuring durable poverty alleviation among the local population. There are also leakages of mining revenue through importing skilled labour and luxury products, repatriation of profits by multinational companies, and the considerable role of marketing, transport and other services based in the FDI home country. However, in general this study supports the theory that FDI and CSR, in combination with good partnerships at community, CSO and government levels, can reduce poverty.

There is also a growing prevalence of HIV/AIDS infection in communities surrounding mines. Mining operations have indirectly contributed to the growth of small market towns with young affluent men and women, increasing the risk of spreading the disease. The HIV/AIDS problem, however, cuts across all sectors of Tanzanian society, threatening to slow economic growth and to wipe out gains in life expectancy.

Environmental concerns are related to soil erosion and degradation, air pollution, water pollution and noise pollution. Although GGML and BGML have conducted their EIAs, much remains to be done to eliminate cumulative adverse social and environmental effects, in order to achieve sustainable development in the LVGB.

Tanzania's mining policy and legal framework is favourable to TNCs but less so to local mining companies and small-scale artisanal mining operations. The new policy has added Tanzania to the list of countries that enjoy special treatment by international insurance agencies. The fiscal regime is also overly pro-investor, without adequate provision for fair and equitable distribution of the benefits of mineral resources between investors, the government and the local communities. More importantly, local investors in Tanzania feel largely neglected by the policy, protesting that they enjoy relatively few incentives. Two conclusions are worth noting in this case. First, the provisions offered to foreign investors are not applicable to local investors – they are deliberately designed to promote increased flows of FDI in the economy. Second, size is important in being eligible and ultimately securing lucrative fiscal incentives. Compared to TNCs, local investments are much smaller in terms of value and most of them are artisanal. Consequently, they are not eligible to benefit from these incentives. The incentive system consists of deliberate fiscal measures that do not seek to achieve equity but rather to realise certain macroeconomic goals. Nevertheless, collectively, local investors make up a significant portion of the industry. Despite wielding smaller capital value, they have substantial impact, especially regarding reinvestment of mineral revenue in the economy, tax revenue and job creation.

Policy recommendations

Based on the conclusions above, the following broad recommendations can be made.

Mining policy and associated laws should be reviewed in order to assure fair and equitable sharing of proceeds from mining

Despite the sector's fast FDI-fuelled growth, the sector can play only a limited role as an engine for growth and poverty alleviation. The feasible way to address this problem is threefold. First, mining policy and laws need to be regularly reviewed, in order to assure that they provide fair and equitable sharing of mining benefits among investors, the government and the local communities. The review should ensure honest recording of mineral revenue and revision of the low royalty tax rates. Second, Tanzania's government should engage in further dialogue with multinational corporations in the mining sector in order to persuade them to reinvest a larger portion of their profits in the country. Third, Tanzania's gov-

ernment should provide a framework for better and more effective implementation of CSR principles.

Activities that add value to mining outputs should be promoted

Most minerals mined in Tanzania are shipped abroad without being processed. As primary producer and exporter, Tanzania currently earns lower returns than it could from the sale of processed minerals. The practice of exporting unprocessed minerals also reduces the opportunities for 'trickling-down' benefits and technology into the local economy. Encouraging value-adding activities will create more jobs for Tanzanians and will enhance the position of mineral resources in the nation's economic development. Therefore, the government should help and assist (also through improved regulation) domestic industries in improving their capacity to take on value-adding processing activities such as gemstone cutting, particle separation and grading, refinery, blending, recycling and fabrication to name a few.

The links between large-scale mining operations and the local and national economy should be improved

Multinational mining companies have brought some improvements to local communities, for example, by providing basic infrastructure. However, the expansion in the mining sector did not trigger significant local economic growth, partly because mining operations are generally detached from local and national supply chains. By creating avenues for local investors to enter into partnerships with the owners and management of the TNCs, the government could greatly improve the links between large-scale mining and the local economy. Therefore, the government should institutionalise joint-venture partnerships between TNCs and local owners of mining land and let local authorities administer mining licenses directly. This will forge tighter partnerships between companies and the local government and will further allow local government bodies to retain a substantial share of the licensing revenue.

Conduct strategic social and environmental impact assessments

Most TNC mining projects are located within the Lake Victoria Greenstone Belt (LVGB). The current practice is for each investor to conduct an independent social and environmental impact assessment for its projects. Such assessments are likely to miss the cumulative social, economic and environmental effects associated with mining operations around the LVGB as a whole. Therefore, a strategic social and environmental impact assessment for the entire LVGB would effectively integrate the environmental, social and economic impacts of mining projects in the area. In addition, a strategic environmental impact assessment could

facilitate strategic decision-making, including spatial planning; improve the quality of policies, plans and programmes; and ultimately foster sustainable development of the mining areas and LVGB.

Further research

Future research should focus on the relationship between profit, corporate income taxes and CSR as well as its implication on foreign mining companies. CSOs, NGOs, the media and members of the public have repeatedly protested against the current situation whereby large-scale mining companies reap much greater profits than what they give back to the community. This observation is supported by the findings of this study. It is assumed that the state would have benefitted more if the companies had paid higher taxes and these taxes had been reinvested in social and economic infrastructures to support the economy. Future research could help establish clear linkages between FDI and its full potential as agent for poverty reduction in Tanzania and other African countries. A good example of such initial studies is Jansen's (2009) analysis of corporate behaviour in Ghana's gold mining sector, but more research is sorely needed.

Annex 1: Research questions and methods

Research questions	Sub-research questions	Question variables	Data collection methods	Type of data	Data analysis
(a) What is the contribution of the gold mining sector in Tanzania?	(i) How does gold export fare as far as national income is concerned? How much foreign exchange trading is realised from the sector compared to other sectors of the economy?	- Gold export versus other export products - Export trends between 1999-2008 - Other intangible benefits	Structured interviews in selected villages Literature surveys: - official documents - reports and archives	Both primary and secondary data	- Qualitative analysis - Quantitative analysis
	(ii) **Taxation**: What are the minerals related tax systems and revenues in Tanzania?	- Types of taxes for gold - Tax policy agreements for mineral resources - Royalties - Corporate taxes - Land taxes - Lease rental - Comparative analysis of pre-reform and post-reform mining legislation	Structured interviews in selected villages Literature surveys: - official documents - reports and archives	Both primary and secondary data	- Qualitative analysis - Quantitative analysis using SPSS 17.0
	(iii) **Revenue**: How much revenue accrues from gold mining and from what sources?	- Estimates of revenue - Sources of revenue - How are the revenues administered - Public perceptions of gold mining revenue			

Research questions	Sub-research questions	Question variables	Data collection methods	Type of data	Data analysis
	(iv) **Employment**: How much opportunity does the sector offer, in contrast to small-scale mining? What is the nature of the employment opportunities generated by the sector?	- Skills and technology transfer - Direct and indirect employment	Structured interviews in selected villages Literature surveys: - official documents - reports and archives	Both primary and secondary data	- Qualitative analysis - Quantitative analysis using SPSS 17.0
	(v) **Income**: What are the income differences between large-scale and small-scale mining?	- Income differences between LSM and SSM	Structured interviews in selected villages Literature surveys: - official documents - reports and archives	Both primary and secondary data	- Qualitative analysis - Quantitative analysis using SPSS 17.0
(b) What are the effects of gold mining on livelihoods in LVGB?	(i) How is the livelihood of the community in the LVGB?	- Perception of livelihood among the local communities - Attributes of livelihoods of local communities - Perception of poverty	- Semi-structured interviews in selected villages - Focus group discussions - Literature review	Both primary and secondary data	- Qualitative analysis - Quantitative analysis using SPSS 17.0
	(ii) What are the perceived socio-economic impacts of gold mining on local communities?	**Local communities and migrants** - Income (employment or unemployment) - Housing - Family organisation (relocation/networks) -Prostitutions - Crime rates - Drug abuse - Migration - Change of land use	Livelihoods workshop - Local perception through group discussions - Structured interviews - Plenary sessions - Brainstorming	Both primary and secondary data	- Qualitative analysis - Quantitative analysis using SPSS 17.0

Research questions	Sub-research questions	Question variables	Data collection methods	Type of data	Data analysis
	(iii) How has gold mining changed local livelihoods?	- Accessibility to livelihood assets - Livelihoods strategies - Land use - Crop choices - Land alienation	- Semi-structured interviews in selected villages - Focus group discussions - Observation	Both primary and secondary data	- Qualitative analysis - Quantitative analysis
	(iv) What shocks and stresses are associated with mining activities in LVGB?	**Environmental** - Land degradation - Loss of vegetative cover - Land conflicts - Shortening of agricultural fallow systems - Bio-diversity (birds, animals and plants) - Water pollution - Dust (palatability to livestock and people) - Chemical/gases/fumes - Black smoke - Noise (blasting, drilling etc.) & vibrations (abortions in livestock, cracking of walls, stress and discomfort) - Vehicle and machine movements - Heap leaching - Ore and waste rock handling **Health** - Respiratory diseases (asthma, silicosis, tuberculosis, bronchitis, lung	- Semi-structured interviews in selected villages - Focus group discussions Literature surveys: - official reports - policies	Both primary and secondary data	- Qualitative analysis - Quantitative analysis

Research questions	Sub-research questions	Question variables	Data collection methods	Type of data	Data analysis
		problems) - Eye diseases - Skin diseases (rashes) - Occupational hazards - Diarrhoea - Sexually transmitted diseases (in particular HIV/AIDS) **Social cultural and economic** - Prostitution - Income disparities (access to housing, food and other amenities) - Child labour - School leavers - Crime - High populations density - Land alienation			
(c) What are the links between gold mining and local economic development?	(i) What are the mining companies' CSR strategies, delivery approaches and practices?	- Improvement of settlements (water, health, education, transport, sanitation) - Basic service delivery (private or commercial, public utilities, latrines, waste management, etc.) - Stimulate local economy (individual, micro-, meso- and co-operative development) - Business development services - Skill developments (training	In-depth interviews with officials: - Government - Mining companies - Other local institutions	Both primary and secondary data	- Qualitative analysis

Research questions	Sub-research questions	Question variables	Data collection methods	Type of data	Data analysis
		and vocational centres) - Warehouse facilities - Freight infrastructure - Local governance (land use conflicts, environmental control, balanced land use and maximising spill-over effect of mining investment, community participation)			
	(ii) What is the state of public-private partnerships?	- Corporate social responsibility (practices, perceptions & its management) - Planning development and management of physical infrastructure (education, health, water, energy, roads, finance and credit, housing)	In-depth interviews with officials: - Government - Mining companies - Other local institutions	Both primary and secondary data	- Qualitative analysis
	(iii) How strong is mining companies' 'crowding effect' on other institutions in LVGB?	- Linkages between local government, community based groups and private sector in managing existing resources, jobs and promoting the economy of the area - Local control of resources - Human resource development - Institutional and physical capacities	In-depth interviews with officials: - Government - Mining companies - Other local institutions Literature surveys: - official reports - policies	Both primary and secondary data	- Qualitative analysis

References

AARNSON, S.A. (2011). *Limited Partnership: Business, Government, Civil Society and the Public in Extractive Industries Transparency Initiatives (EITI).* Washington D.C.: George Washington University.

ABRAHAMS, R.G. (1967), *The People of The Unyamwezi, Tanzania*. London: International African Institute.

ABRAHAMS, R.G. (1989), Law and Order and the State in Nyamwezi and Sukuma Areas in Tanzania, Africa. *International Affairs* 59(3): 356-370.

ADB (2004), *African Development Report 2004: Africa in the Global Trading System.* Abidjan: African Development Bank.

ALI, S. & L.BEHRENDT (2001), Mining and Indigenous Rights: The Emergence of a Global Social Movement, *Cultural Survival Quarterly* 25(6-8).

ANGLOGOLD ASHANTI (2007), *Report to Society 2007*, accessed in September 2009: http:www.anglogold.com/subwebs/informationforinvestors/report07/.

ANGLOGOLD ASHANTI (2008), *Report to Society 2008*, accessed in September 2009: http:www.anglogold.com/subwebs/informationforinvestors/report08/.

APPLETON, J.D., H. TAYLOR, T.R. LISTER & B. SMITH (2004), *Assessment of the Environment in Rwamgasa Area, Tanzania*. UNIDO Project eg/glo/01/g34.

ASHLEY, C. & D. CARNEY (1999), *Sustainable Livelihoods: Lessons from Early Experience*, London: DfID.

AUTY, R.M. & A. WURHURST (1993), Sustainable Development in Mineral Exporting Economies. *Resource Policy* 19: 14-29.

AUTY, R.M. & R.F. MIKESELL (1998), *Sustaining Development in Mineral Economies*. Oxford, Oxford University Press.

BALU, R. (2001). Strategic Innovation: Hindustan Lever Ltd. *Fast Company* 47: 120-124.

BARRICK GOLD (2008), *Social Responsibility Report 2008*. http://www.barrick.com/ accessed in October 2009.

BARTH, H. (1990), Provisional Geological Map of Lake Victoria Gold Fields, Tanzania 1:500000 (with explanatory notes), *Geologiche. Jahrbuch* 72: 59.

BAUD, I., N.SRIDHARAN & K. PFEIFER (2007), Mapping Urban Poverty for Local Governance in an Indian Mega-city: The Case of Delhi. *Urban Studies* 45(7): 1385-1412.

BEALL, J., N. KANJI & C. TACOLI (1999), African Urban Livelihoods: Straddling the Rural-urban Divide. In: S. JONES & N. NELSON, eds., *Urban Poverty in Africa: From Understanding to Alleviation*, pp 160-168. London: Intermediate Technology Publications.

BEBBINGTON, A. (1999), Capitals and Capabilities: A Framework for Analysing Peasant Viability, Rural Livelihoods and Poverty, *World Development* 27(12): 2021-2044.

BGML (2006), *Annual Social Compliance Report 2006*. Bulyanhulu, Kahama Tanzania

BITALA, M. (2008), *Evaluation of Heavy Metals Pollution in Soil and Plants Accrued from Gold Mining Activities in Geita, Tanzania*. Dar es Salaam: University of Dar es Salaam.

BLAIKIE, P., T. CANNON, I. DAVIS & B. WISNER (1994), *At Risk. Natural Hazards, People's Vulnerability and Disasters*. London: Routledge.

BLOMSTRÖM, M. & A KOKKO (1998), Multinational Corporations and Spillovers. *Journal of Economic Surveys* 12(3).

BOLDING, A. (2005), Technography: An Interdisciplinary Methodology for Analyzing and Reforming Irrigated Settlements in Sub-Saharan Africa. Paper Presented at the one day Seminar on "Water, Politics and Development" at ZEF Bonn, 20th April 2005.

BORG, G. & R.M. SHACKLETON, eds (1997), *The Tanzania and North East Zaire cratons. Greenstone Belts*. Oxford: Clarendon Press.

BORG, G., D.R. LYATUU & D. RAMMLMAIR (1990), Genetic Aspects of the Geita and Jubilee Reef, Archaean BIF – Hosted Gold Deposits, Tanzania. *Geologische Rundschau* 79: 355-371.

BOT (2007), *Economic Survey of Tanzania, 2007*. Dar es Salaam: Bank of Tanzania.

BPD (1999), Overview of BPD and the Natural Resources Cluster. London: Business Partners for Development, Natural Resources Cluster.

BURTON, B.K., J.L. FARH & W.H. HEGARTY (2000), A Cross-Cultural Comparison of Corporate Social Responsibility Orientation: Hong Kong vs. United States Students. *Teaching Business Ethics* 4(2): 151-167.

BUTLER, P. (2004), Tanzania: Liberalisation of Investment and the Mining Sector. Analysis of the Content and Certain Implications of the Tanzania 1998 Mining Act. In: B. Campbell, ed., *Regulating Mining in Africa: For Whose Benefit?* Uppsala: Nordiska Afrikainstitutet, pp. 67-79.

CAMPBELL, B. (2004), Guinea: Deregulation and Its Consequences for Environmental Protection. In: B. Campbell, ed., *Regulating Mining in Africa: For Whose Benefit?* Uppsala: Nordiska Afrikainstitutet, pp. 30-38.

CARROLL, A.B. (1991), The Pyramid of Corporate Social Responsibility: Toward the Moral Management of Organizational Stakeholders. *Business Horizons* 34(4): 39-48.

CARROLL, A.B. (2004), Managing Ethically with Global Stakeholders: A Present and Future Challenge. *Academy of Management Executive* 18(2): 114-120.

CHACHAGE, C.S.L. (1995), The Meek Shall Inherit the Earth But Not the Mining Rights: The Mining Industry and Accumulation in Tanzania. In: P. Gibbon, ed., *Liberalised Development in Tanzania*, pp. 37-108. Uppsala, Nordiska Afrikainstitutet.

CHAMBERS, R. & G. CONWAY (1992), Sustainable Rural Livelihoods: Practical Concepts for the 21st Century. Brighton: Institute of Development Studies, IDS Discussion Paper 296.

CHANDLER, G. (2008), Essay: Business and Human Rights - A Personal Account From the Front Line.

CHANT, S. (1998), Households, Gender and Rural-Urban Migration: Reflections on Linkages and Considerations for Policy. *Environment & Urbanization* 10(1): 5-21.

CLAYTON, M.C. (2006), Disruptive Innovation for Social Change. *Harvard Business Review* 84(12): 96.

COOKSEY, B. & T. KELSALL (2011), The Political Economy of Investment Climate in Tanzania. A Research Report. Africa Power and Politics Programme (APPP), A background paper. London: Overseas Development Institute.

COOKSEY, B. (2011). The Investment and business environment for gold exploration and mining in Tanzania. Africa Power and Politics Programme (APPP), A background paper. London: Overseas Development Institute.

CORBETT, J. (1988), Famine and Household Coping Strategies. *World Development* 16(9): 1099-1112.

CORY, H. (1953), *Sukuma Law and Custom*. London/Oxford: International African Institute/Oxford University Press.

CORY, H. (1954), *The Indigenous Political System of the Sukuma*. Kampala: East African Institute of Social Research.

CPRC (2004), *The Chronic Poverty Report 2004-05*. Manchester: Manchester Chronic Poverty Research Centre.

CRANE, A. & D. MATTEN (2004), *Business Ethics*. Oxford: Oxford University Press.

CUNNINGHAM, W.P. & B.W. SAIGO (2001), *Environmental Science: A Global Concern*. New York: McGraw-Hill Companies, Inc.

CURTIS, M. & T. LISSU (2008), *A Golden Opportunity? How Tanzania is Failing to Benefit From Gold Mining*. Dar es Salaam: Christian Council of Tanzania.

DAVIDSON, A. (2001), *Nesbitt Burns Mining Conference*. Toronto: Barrick Gold Corporation.

DAVIDSON-HUNT, I & F. BERKES (2003), Nature and Society Through the Lens of Resilience: A Human-in-Ecosystem Perspective. In: F. BERKES, J. COLDING & C. FOLKE, eds,

Navigating Social Ecological Systems: Building Resilience for Complexity and Change, pp. 53-82. New York: Cambridge University Press.

DAVIS, G. (1998), The Minerals Sector. Sector Analysis and Economic Development. *Resource Policy* 24: 217-228.

DE GROOT, T. (2009), Gold and Social Responsibility: Local Perceptions of a Gold Mine in Tanzania and Its Corporate Social Responsibility. Amsterdam: University of Amsterdam, Faculty of Social and Behavioural Sciences, Masters thesis.

DE HAAN, L. (2000), Globalization, Localization and Sustainable Livelihood. *Sociologia Ruralis* 40(3): 339-365.

DE HAAN, L. & A. ZOOMERS (2003), Development Geography at the Crossroads of Livelihood and Globalization. *Journal of Economic and Social Geography* 94(3): 350-362.

DEES, J.G., J. EMERSON & P. ECONOMY (2001), *Enterprising Non-profits: A Toolkit for Social Entrepreneurs*. New York: John Wiley & Sons.

DIETZ, T. & C. MULDER (2005), Household Fluidity and Family Networks: Methodological Challenges. Paper Presented at the "AMIDSt lecture series", University of Amsterdam, March 8, 2005.

DIETZ, T. & F. ZAAL (2002), The Provisioning of African Cities, with Ouagadougou as a Case Study. In: I.S.A. Baud & J. Post, eds, *Re-aligning Actors in An Urbanizing World: Governance and Institutions From a Development Perspective*, pp. 265-286. Aldershot: Ashgate.

DITR (2006), *Community Engagement and Development: Leading Practice Sustainable Development Programme for the Mining Industry*. Canberra: Australian Government.

DRASCH, G. & S. BOESE-O'REILLY (2004), *Assessment of Health in the Rwamagasa area in Tanzania. Final Report for an Assessment of the Environment and Health in the Rwamagasa Area, Tanzania*. Nottingham: British Geological Survey/National Environment Research Council.

DREZE, J. & A. SEN (1989), *Hunger and Public Action*. Oxford: Clarendon Press.

EATWEL, J., M. MILGATE & P. NEWMAND (1987), *The New Palgrave Dictionary of Economics*. London: MacMillan Press Limited.

EC (2002), *Communication from the Commission Concerning Corporate Social Responsibility: A Business Contribution to Sustainable Development*. Brussels: European Commission.

EDMONDSON, V.C. & A.B. CARROLL (1999), Giving Back: An Examination of the Philanthropic Motivations, Orientations and Activities of Large Black-owned Businesses. *Journal of Business Ethics* 19(2): 171-179.

EITI (2006), *Extractive Industries Transparency Initiative. Making Transparency a Global Norm*. Oslo.

ELLIS, F. (2000), *Rural Livelihoods and Diversity in Developing Countries*. Oxford: Oxford University Press.

ELLISON, B., D. MOLLER & M.A. RODRIGUEZ (2002), *Hindustan Lever Re-invents the Wheel*. Barcelona: University of Navarra.

EMEL, J. & M.T. HUBER (2008), A Risky Business: Mining, Rent and the Neoliberalization of "Risk". *Geoforum* 39(3): 1393-1407.

ESRF (2002), *The State of Corruption in Tanzania - Annual Report 2002*. Dar es Salaam: Economic and Social Research Foundation and Front Against Corrupt Elements in Tanzania (FACEIT),

EWEJE, G. (2006), The Role of Mines in Community Development Initiatives in Developing Countries: Corporate Social Responsibility at Work in Nigeria and South Africa. *Business Society* 45(2): 93-129.

FIFIELD, F.W. & P.J. HAINES (2000). *Environmental Analytical Chemistry*. Oxford: Blackwell Science Ltd.

FISHER, E. (2008), Artisanal Gold Mining at The Margins of Mineral Resource Governance: A Case From Tanzania. *Development Southern Africa* 25(2): 199-212.

FOEKEN, D. & S.O. OWUOR (2008), Farming as a livelihood source for the urban poor of Nakuru, Kenya. *Geoforum* 39: 1978-1990.

FOX, T. (2004), Corporate Social Responsibility and Development: In Quest of An Agenda. *Development* 47(3): 29-36.

FRAYNE, B. (2004), Migration and Urban Survival Strategies in Windhoek, Namibia. *Geoforum* 35: 489-505.

GEITA DISTRICT COUNCIL (2002-2006), District Health Department Implementation Reports. Geita.

GENEST, C.M. (2005), Cultures, Organizations and Philanthropy. *Corporate Communications* 10(4): 315-327.

GEORGE, A. (2003), Social Economic Impacts of Mining on the Livelihood of Local Communities in Geita District, Tanzania. Morogoro: Sokoine University of Agriculture, Development Studies Institute, Masters thesis.

GGML (2007), *Annual Environmental Report 2007*. Geita, Mwanza: GGML.

GGML (2008), *Annual Environmental Report 2008*. Geita, Mwanza: GGML.

GLAVOVIC, B., R.SCHEYVENS & J.OVERTON (2002), *Wave of Adversity Layers Of Resilience: Exploring Sustainable Livelihoods Approach*. http://www.devnet.org.nz/conf2002/papers/

GOT (1972), *The Stamp Duty Tax Act Of 1972*. Dar es Salaam: Government Printer.

GOT (1974), *The Wildlife Conservation Act of 1974.* Dar es Salaam: Government Printer.

GOT (1982), *The Local Government Finances Act Of 1982*. Dar es Salaam: Government Printer.

GOT (1985), *The Road and Fuel Tolls Act of 1985.* Dar es Salaam: Government Printer.

GOT (1992), *The Foreign Exchange Act of 1992*. Dar es Salaam: Government Printer.

GOT (1997a), *The Financial Laws (Miscellaneous Amendments) Act of 1997*. Dar es Salaam: Government Printer.

GOT (1997b), *The Value Added Tax Act of 1997*. Dar es Salaam: Government Printer.

GOT (1999a), *Government Gazette No. 22 of 5th February 1999*. Dar es Salaam: Government Printer.

GOT (1999b), *Land Act No. 4 of 1999*. Dar es Salaam: Government Printer.

GOT (1999c), *Village Land Act No. 5 of 1999*. Dar es Salaam: Government Printer.

GOT (2001), *Government Gazette No. 78 of 4th May 2001*. Dar es Salaam: Government Printer.

GOT (2002), *Government Gazette No. 480 of 25th October 2002*. Dar es Salaam: Government Printer.

GOT (2004), *The Income Tax Act of 2004*. Dar es Salaam: Government Printer.

GOT (2005a), *Government Gazette No. 418 of 9th December 2005*. Dar es Salaam: Government Printer.

GOT (2005b), *Government Gazette No. 99 Of 15th October 2005*. Dar es Salaam: Government Printer.

GOTTFRIED, O. & M.B. LANG (1961), Problems of Social and Economic Change in Sukumaland, Tanganyika. *Anthropological Quarterly* (1961): 86-101.

GRIFFITHS, D., W. STIRLING & K. WELDON (1998), Understanding Data: Principles and Practices of Statistics. Brisbane: John Wiley & Sons.

GUERRA, M.C.G. (2002), Community Relations in Mineral Development Projects. *The CEP-MLP Internet Journal* 11: 1-31.

HARELIP DISORDER (2009), http://www.wisegeek.com. Accessed in September, 2009.

HARVEY, B. & D. BRERETON (2005), Emerging Models of Community Engagement in the Australian Mining Industry. Paper Presented at The International Conference on Engaging Communities, Brisbane.

HOLLIDAY, C., S. SCHMIDHEINY & P. WATTS (2002), *Walking the Talk - The Business Case for Sustainable Development*. London: Greenleaf Publishing.

HUMPHREYS, D. (2000), A Business Perspective on Community Relations in Mining. *Resources Policy* 26: 127-131.

HUTCHINS, M.J., C.L. WALK, D.P. STERK & G.A. CAMPBELL (2007), Corporate Social Responsibility: A Unifying Discourse for Mining Industry? *Greener Management International* 52: 17-30.

ICMM [INTERNATIONAL COUNCIL ON MINING AND METALS] (1999), Aboriginal People and Mining: Case Studies. www.icmm.com/Librarypubdetail.php accessed in October 2009.

ILO (1999), *Social and Labour Issues in Small-Scale Mines*. Geneva: ILO.

INGOLD, T. (2000), *The Perception of the Environment: Essays in Livelihoods, Dwellings and Skills*. London: Routledge.

ITE, U.E. (2004), Multinationals and Corporate Social Responsibility in Developing Countries: A Case Study of Nigeria. *Corporate Social Responsibility and Environmental Management* 11: 1-11.

IYENGAR, V. & P. NAIR (2000), Global Outlook on Nutrition and the Environment: Meeting the Challenges of the Next Millennium. *Science of the Total Environment* 249: 331-346.

JAMESON, S. (1993), Zinc Status in Pregnancy: The Effect of Zinc Therapy on Perinatal Mortality, Pre-maturity, and Placental Ablation. *Annals of New York Academy of Sciences* 678: 178-192.

JANSEN, S.L (2009), *Corporate Behaviour in Ghanaian Gold Mining Sector: The Paradox of Corporate Tax Behaviour and CSR*. Amsterdam: University of Amsterdam, Masters thesis.

JENKINS, R. (2004). Globalization, Corporate Social Responsibility and Poverty. *International Affairs* 81(3): 525-540.

JOUKOFF, T., D. PURDEY & C. WHARTON (2004), *Development and Application of Whittle Multi-Mine at Geita Gold Mine, Tanzania. Orebody Modelling and Strategic Mine Planning.* Perth, WA, 22-24 November 2004, pp. 149-163.

KAAG, M., R. VAN BERKEL, L.J. BRONS, M. DE BRUIJN, H. VAN DIJK, L. DE HAAN, G. NOOTENBOOM & A. ZOOMERS (2004), *Ways Forward in Livelihood Research. Themes and Concepts in Current Research.* In: D. KALB, W. PANSTERS & H. SIEBERS, eds., *Globalization and Development*, pp. 49-74. Dordrecht: Kluwer Academic Publishers.

KABELWA, G. (2003), Technology Transfer and South African Investment in Tanzania. Dar es Salaam: ESRF, *Globalization and East Africa* Working Paper Series No. 5.

KABELWA, G. (2004), South African FDI in East Africa: The Case of Tanzania. Dar es Salaam: ESRF, *Globalization and East Africa* Working Paper Series No. 10.

KABELWA, G. (2006), *Potential Impacts of FDI on Economic Development in Tanzania: Policy Dialogue for Accelerating Growth and Poverty Reduction in Tanzania*. Dar es Salaam: ESRF.

KAHAMA DISTRICT COUNCIL (2002-2006), *District Health Department Implementation Reports*. Kahama.

KAPONDYA, W. (2008), Environmental Effects of GGML on Neighbouring Settlements. Dodoma: Institute Of Rural Development Planning.

KEMP, D. (2009), Mining and Community Development: Problems and Possibilities of Local Level Practice. *Community Development Journal* 45: 3-21.

KIKULA, I.S., E.K. SHISHIRA & F.P. MAGANGA (1991), Developments in Land Degradation in the Sukumaland. Dar es Salaam: University of Dar es Salaam, Institute of Resource Assessment.

KIKULA, I.S., S. CHANLEY & P.YANDA (1996), *Ecological Changes in the Usangu Plains and their Implications on the Downstream Flow of the Great Ruaha River in Tanzania*. Dar es Salaam: Institute of Resource Assessment.

KULINDWA, K., O. MASHINDANO, F. SHECHAMBO & H. SOSOVELE (2003), *Mining for Sustainable Development in Tanzania*. Dar es Salaam: Dar es Salaam University Press.

KUMAH, A. (2006), Sustainability and Gold Mining in the Developing World. *Journal of Cleaner Production* 14: 315-323.

KUMAR, N. (1995), *Changing Character of Foreign Investment from Developing Countries: A Case Study from Asia*. Maastricht, United Nations University, Institute for New Technologies.

KUMAR, R. (1990), Policy Reforms to Expand Mining Investment in Subsaharan Africa. *Resources Policy* (December, 1990): 242-320.

KWEKA, J. (2007), *The Role of TNCs in the Extractive Industry of the United Republic of Tanzania*. Eschborn, Germany: GTZ.

LACEY, A. & D. LUFF, eds (2001), *Qualitative Data Analysis*. Leicester: Trent Focus for Research and Development in Primary Health Care.

LANGE, S. (2006), *Benefit Streams from Mining in Tanzania: Case Studies from Geita and Mererani*. CMI Report in Cooperation with ESRF. Bergen, Norway: Christian Michelsen Institute Press.

LISSU, T.A. (2001), In Gold We Trust: The Political Economy of Law, Human Rights and the Environment in Tanzania's Mining Industry. *Law Social Justice & Global Development* 2001(2).

LONDON, T. & S.L. HART (2004), Reinventing Strategies for Emerging Markets: Beyond the Transnational Model. *International Business Studies* 35: 350-370.

LUVANGA, N. & J. SHITUNDU (2003), *The Role of Tourism in Poverty Alleviation in Tanzania: Research on Poverty Alleviation*. Dar es Salaam: Mkuki na Nyota Publishers Ltd.

MADETE, L.B. (2000), *Foreign Direct Investment and Public Policy in Tanzania*. Dar es Salaam: University of Dar es Salaam, Master thesis.

MADULU, N.F. (1996), *Environmental Degradation and Fertility Variations in Tanzania: The Case Study of Kondoa District*. Dar es Salaam: University of Dar es Salaam, PhD thesis.

MADULU, N.F. (1998), Changing Lifestyles in Farming Societies of Sukumaland: Kwimba District, Tanzania. Leiden/Dar es Salaam: Afrika-Studiecentrum/Institute of Resource Assessment.

MADULU, N.F. (2002), Safeguarding the Commons: Conflicts over Natural Resource Use and Poverty Alleviation Strategies in Rural Tanzania. The Commons in an Age of Globalisation. Victoria Falls, Zimbabwe, 9th Conference of the International Association for the Study of Common Property.

MALCOLM, D.W. (1953), *Sukumaland: An African People and their Country*. London: International African Institute, Oxford University Press.

MALITI, E. & R. MNENWA (2008), Affordability of Modern Fuels and Patterns of Energy Demand in Urban Tanzania. Paper presented at the 13th REPOA Research Workshop, White Sands Hotel, Dar Es Salaam.

MANTEAW, B. (2007), From Tokenism to Justice: Rethinking the Bottom Line for Sustainable Community Development. *Community Development Journal* 43: 428-443.

MANYA, S. & M.A.H. MABOKO (2003), Dating Basaltic Volcanism in the Neoarchaean Sukumaland Greenstone Belt of the Tanzania Craton Using the Sm-Nd Method: Implications for the Geological Evolution of the Tanzania Craton. *Precambrian Research* 121: 35-45.

MANYA, S. & M.A.H. MABOKO (2008), Geochemistry and Geochronology of Neoarchaean Volcanic Rocks of the Iramba-Sekenke Greenstone Belt, Central Tanzania. *Precambrian Research* 163: 265-278.

MARKUSEN, J., A. RAND & J.VENABLES (1997), *Foreign Direct Investment as a Catalyst of Industrial Development*. Cambridge, MA: National Bureau of Economic Research.

MBELLE, A.V.Y. (2007), Evaluation of Implementation of First Generation Poverty Reduction Strategies in Tanzania. Paper presented at the 11th Eastern Africa Intergovernmental Committee of Experts Meeting on the Review of Macroeconomic Policies, PRSPS, Interrelationships and their Impact on Poverty Reduction.

MBELLE, A.V.Y. (2007), Macro Economic Policies and Poverty Reduction Initiatives in Tanzania: What needs to be done? Dar es Salaam: ESRF, ESRF Policy Dialogue.

MCALLISTER, D.J. (1995), Affect- and Cognition-Based Trust as Foundations for Interpersonal Cooperation in Organizations. *Academy of Management Journal* 38(1): 24-59.

MEERTENS, H.C.C., L.J. NDEGE & H.J. ENSERINK (1995), *Dynamics in Farming Systems: Changes in Time and Space in Sukumaland Tanzania*. Amsterdam: Royal Tropical Institute.

MESSO, C.W. (2004), *Geochemistry of Neoarchaean Volcanic Rocks of the Ikoma Area in the Kilimafedha Greenstone Belt, Northeast Tanzania*. Dar es Salaam: University of Dar es Salaam, Masters thesis.

MITCHELL, J. (1969), The Concept and Use of Social Networks. In: C. MITCHELL, ed., *Social Networks in Urban Situations*. Manchester: Manchester University Press.

MITLIN, D. (2003), Addressing Urban Poverty through Strengthening Assets. *Habitat International* 27: 393-406.

MITLIN, D. & D. SATTERTHWAITE (2004), *Empowering Squatter Citizens: Local Government, Civil Society and Urban Poverty Reduction*. London: Earthscan Publications.

MKINGA, B.A. (2006), Challenges of the Mining Industry in Tanzania: Are we Globally Competitive? In: L.A. Msambichaka, N.E. Mwamba & O.J. Mashindano, eds, *Globalization and Challenges for Development in Tanzania*. Dar es Salaam: Dar es Salaam University Press, pp. 162-185.

MOH (2006), *Public Expenditure Review 2000-2006*. Dar es Salaam: Tanzania Government Printers.

MOON, J. (2002),The Social Responsibility of Business and New Governance. *Government and Opposition* 37(3): 385-408.

MTORO, M. (200), Geochemical Investigation of Metavolcanic Rocks of the Musoma-Mara Greenstone Belt in t6he Suguti Area, Northeast Tanzania. Dar es Salaam: University of Dar es Salaam, Masters thesis.

MUTHURI, J.N. (2007), Corporate Citzenship and Sustainable Community Development: Fostering Multi-Sector Collaboration in Magadi Division in Kenya. *Journal of Corporate Citizenship* 28: 73-84.

MWAIPOPO, R., W. MUTAGWABA, D. NYANGE & E. FISHER (2004), *Increasing the Contribution of Artisanal and Small Scale Mining to Poverty Reduction in Tanzania: Based on an Analysis of Mining Livelihoods in Misungwi and Geita District, Mwanza Region*. Swansea & London: CDS & DfID.

MWAURA, K. (2004), *Corporate Citizenship: The Changing Legal Perspective in Kenya*. Interdisciplinary CSR Research Conference, Nottingham.

NBS (2002), *Household Budget Survey, 2002*. Dar es Salaam: Government Printer.

NBS (2008), *Household Budget Survey, 2007.* Dar es Salaam: Government Printer.

NBS (2002). *Household Budget Survey, 2000/01*. Dar es Salaam: Government Printer.

NDALAHWA, F.M., G. NAIMANI, H. KIWASILA, C.G. MUNG'ONG'O & C.F. SILANGWA (2007), *Population, Health, and Environment Integration and Cross-Sectoral Collaboration in East Africa: Tanzania Country-Level Assessment*. Dar es Salaam: African Youth Alliance Programme.

NICHOLAS, C. (2004), *Dirty Gold Mining. The Toxicity Legacy of Cyanide Leaching*. Sydney: University of Technology Press.

ODHIAMBO, W. & D.K. MANDA (2003), Urban Poverty and Labour Force Participation in Kenya. Paper presented at the "World Bank Urban Research Symposium", Washington D.C.

OECD (2001), *The DAC Guidelines on Poverty Reduction*. Paris: OECD.

OPM (2009), *The Golden Building Block: Gold Mining and the Transformation of Developing Economies with an Economic Life-Cycle Assessment of Tanzanian Gold Production*. London: WBC, ICMM & OPM.

OTTO, J. (1997), A National Mineral Policy as a Regulatory Tool. *Resources Policy* 23(1/2):1-7.

OTTO, J., F. CAWOOD, M. DOGGETT, P. GUJ, F. STERMOLE, J. STERMOLE & J.TILTON (2006), *Mining Royalties A Global Study of Their Impact on Investors,Government, and Civil Society*. Washington, D.C.: World Bank.

OWUOR, S. (2006), Bridging the Urban-Rural Divide: Multi Spatial Livelihoods in Nakuru Town, Kenya. Leiden: African Studies Center.

PARK, C. (1987), *Acid Rain: Rhetoric and Reality*. London: Methue and Co. Ltd.

PHILLIPS, L.C., H. SEMBOJA, G.P. SHUKLA, R. SEZINGA, W. MUTAGWABA, B. MCHWAMPAKA, G. WANGA, G. KAHYARARA & C.P. KELLER (2001), Tanzania's Precious Minerals Boom: Issues in Mining and Marketing. Washington, D.C: USAID.

PLUMMER, K. (1997), *Documents of Life: An Introduction to the Problem and Literature of a Humanistic Method.* London: George Allen and Unwin.

POTTS, D. (1997), Urban Lives: Adopting New Strategies and Adapting Rural Links. In: C. Rakodi, ed., *The Urban Challenge in Africa: Growth and Management of the Large Cities*, pp. 447-494. Tokyo/New York: United Nations University Press.

PRADHAN, M. & M. RAVALLION (1998), *Measuring Poverty Using Qualitative Perceptions of Welfare*. Washington, DC: World Bank, Policy Research Working Paper No. 2011.

RAKODI, C. (2002a), A Livelihoods Approach - Conceptual Issues and Definitions. In: C. Rakodi & T. Lloyd-Jones, eds, *Urban Livelihoods: A People-Centred Approach to Reducing Poverty*, pp. 3-22. London: Earthscan Publications Ltd.

RAKODI, C. (2002b), Economic Development, Urbanization and Poverty. In: C. Rakodi & T. Lloyd-Jones, *Urban Livelihoods: A People-Centred Approach to Reducing Poverty*, pp. 23-34. London: Earthscan Publications Ltd.

RAWORTH, K.S., S. DHANARAJAN & L. WREN-LEWIS (2008), The Private Sector and Poverty Reduction. From Poverty to Power: How Active Citizens and Effective State Can Change. Oxford: Oxford University Press.

RAYNARD, P. & M. FORSTATER (2002), *Corporate Social Responsibility: Implications for Small and Medium Enterprises in Developing Countries.* Vienna: UNIDO.

REED, D. (2002), Resource Extractive Industries in Developing Countries. *Journal of Business Ethics* 39: 199-226.

RING (2003), *The Development Dimensions of the UN Global Compact*. London: RING-Alliance.

RUGGIE, J.G. (2002), The Theory and Practice of Learning Networks: Corporate Social Responsibility and the Global Compact. *Journal of Corporate Citizenship* 5: 27-36.

SACHS, J. & A. WARNER (1997), *Natural Resource Abundance and Economic Growth*. Cambridge, MA: Centre for International Development and Harvard Institute for International Development.

SANGA, S.P. (2007), *Combating the Resource Curse: The Role of Poor Governance in the Tanzanite-Al Qaeda Link Controversy and Policy Options for Tanzania to Restrain Curses in the Mining Industry*. Budapest: The Open Society Institute.

SARW, TWN AFRICA, TJN AFRICA, ACTIONAID AND CHRISTIANAID (2009), *Breaking the Curse: How Transparent Taxation and Fair Taxes Can Turn Africa's Mineral Wealth into Development*. Johannesburg, Accra, Nairobi & London.

SATTERTHWAITE, D. (2001), Reducing Urban Poverty: Constraints on the Effectiveness of Aid Agencies and Development Banks and Some Suggestions for Change. *Environment & Urbanization* 13(1): 137-157.

SATTERTHWAITE, D. (2004), *The Under-Estimation of Urban Poverty in Low and Middle-Income Nations. Poverty Reduction in Urban Areas Series*. London: International Institute for Environment and Development.

SEBASTIAN, C. (2009), Mining Firms Argued to Help Cut Poverty. Dar es Salaam, *The Guardian*.

SEN, A. (1981), *Poverty and Famines: An Essay on Entitlement and Deprivation.* Oxford: University Press.

SEN, A.K. (1999), *Development as Freedom*. Oxford: Oxford University Press.

SHAH, K. & V. GUPTA (2000), *Tourism, the Poor and Other Stakeholders: Asian Experience.* London: ODI.

SMITH, L. (1997), Assessment of the Contribution of Irrigation to Poverty Reduction and Sustainable Livelihoods. *Water Resources Development* 20(2): 243-257.

SPRADLEY, J. (1997), *The Ethnographic Interview*. New York: Rinehart and Winston.

STEPHEN, R. & D. KAMUGISHA (2004), Towards Establishing a Sustainable Ecosystem. Geita, Mwanza: GGML.
SZOMBATI, K. (2008), Sharing the Wealth? Corporate Social Responsibility in the Mining Sector of Tanzania. Amsterdam, University of Amsterdam, International School for Humanities and Social Sciences, Masters thesis.
TCME (2007), *Tanzania Tax Incentives in the Mining Industry*. Dar es Salaam: Tanzania Chamber of Minerals and Energy.
THISDAY (2009), The Human Cost of Gold and the Deadly Price to Pay. Dar Es Salaam: Infocom Technologies Ltd.
TURKODOGAN, M.K., K. FEVZI, K. KAZIM, T. ILLYAS & U. ISMAIL (2003), Heavy Metals in Soil, Vegetables and Fruits in the Endemic Upper Gastrointestinal Cancer Region of Turkey. *Environmental Toxicol Phamacol* 13(3): 175-179.
UNCTAD (2000), World *Investment Report 2000: Cross-Border Mergers and Acquisitions and Development*. New York: United Nations.
UNCTAD (2001), *Investment Policy Review: The United Republic of Tanzania*. Geneva: United Nations.
UNCTAD (2004), *Investment Policy Review: The United Republic of Tanzania*. Geneva: United Nations. www.unctad.org, accessed in July 2007.
UNCTAD (1995), *World Investment Report 1995*. www.unctad.org, accessed in April 2007.
UNCTAD (2002), *World Investment Report 2002*. Geneva: United Nations.
UNCTAD (2003), *Word Investment Report 2003.* Geneva: United Nations. www.unctad.org, accessed in July 2007.
UNCTAD (2007), *World Investment Report 2007: Transnational Corporations, Extractive Industries & Development*. New York and Geneva: United Nations. www.unctad.org, accessed in July 2008.
URT (1979), *Ministry of Energy and Minerals, Mineral Policy of Tanzania*. Dar es Salaam: Government Printer.
URT (1997), *Ministry of Energy And Minerals, Mineral Policy Of Tanzania*, Dar es Salaam: Government Printer.
URT (1998), *The Mining Act No. 5 1998*. Dar es Salaam: Government Printer.
URT (1999), *The Economic Survey, 1999*. Dar es Salaam: Government Printer.
URT (2000), *The Economic Survey, 2000*. Dar es Salaam: Government Printer.
URT (2001), *Tanzania Law Reform Commission Report.* Dar es Salaam: Government Printer.
URT (2001), *The Economic Survey, 2001*. Dar es Salaam: Government Printer.
URT (2002), *The Economic Survey, 2002*. Dar es Salaam: Government Printer.
URT (2002). *Population and Housing Census: The United Republic of Tanzania*. Dar es Salaam: Government Printer.
URT (2003), *Economic Survey and Mining Revenue Investment Strategy*. Dar es Salaam: Government Printer.
URT (2003), *The Economic Survey, 2003*. Dar es Salaam: Government Printer.
URT (2004), *The Economic Survey, 2004*. Dar es Salaam: Government Printer.
URT (2005), *Tanzania in Figures.* Dar es Salaam: Government Printer
URT (2005), *The Economic Survey, 2005*. Dar es Salaam: Government Printer.
URT (2006), *The Economic Survey, 2006*. Dar es Salaam: Government Printer.
URT (2007), *The Economic Survey, 2007*. Dar es Salaam: Government Printer.
URT (2008a). *A Report of the Presidential Advisory Committee for Administration of the Mineral Sector*. Dar es Salaam: Government Printer.
URT (2008b). *Taarifa ya Kamati ya Raisi ya Kuishauri Serikali Kuhusu Usimamizi wa Sekta ya Madini.* Dar es Salaam: Government Printer.
VALADEZ, J. & M. BAMBERGER (1994), *Monitoring and Evaluating Social Programs in Developing Countries: A Handbook for Policymakers, Managers and Researchers.* Washington, DC: World Bank, Economic Development Institute.

VAN CAMPENHOUT, B. (2002), The Mining Industry and the Future Development of Tanzania. *Globalization and East African Economics Workshop*, 15-16 April, 2002. Dar es Salaam: ESRF.

VAN DER GEEST, K. & T. DIETZ (2004), A Literature Survey about Risk and Vulnerability in Drylands, with a Focus on the Sahel. In: A.J. Dietz, R. Ruben & A. Verhagen, eds, *The Impact of Climatic Change on Drylands, with a Focus on West Africa*, pp. 117-146. Dordrecht: Kluwer Academic Publishers.

VAN STRAATEN, P. (2000), *Mercury Contamination Associated with Small-Scale Gold Mining in Tanzania and Zimbabwe*. Ontario: University of Guelph, Department of Land Resource Science.

VAN VUUREN, A. (2003), *Women Striving for Self-Reliance: The Diversity of Female-Headed Households in Tanzania and the Livelihood Strategies they Employ*. Leiden: African Studies Centre, ASC Research Report 67.

VIJFHUIZEN, C. (1998), *The People you Live with. Gender Identities and Social Practices, Beliefs and Power in the Livelihoods of the Ndau Women and Men in a Village with an Irrigation Scheme in Zimbabwe*. Wageningen: Wageningen University, PhD Thesis.

VISSER, W. (2005), Re-Visiting Carroll's CSR Pyramid: An African Perspective. Nottingham: University of Nottingham.

WALKER. B., C. HOLLING, S. CARPENTE & A. KEINZIG (2004), Resilience Adaptability and Transformability in Social-Ecological Systems. *Ecology and Society* 9(2): 5. http://www.ecologyandsociety.org/Vol9/Iss2/Arts.

WANGWE, S.M. & Y. TSIKATA (1999), *Macroeconomic Developments and Employment in Tanzania*. Dar es Salaam: Dar es Salaam University Press, ESRF Paper for ILO.

WARHURST, A. & L. NORONHA (2000), *Environmental Policy in Mining: Corporate Strategy and Planning for Closure*. London: Lewis.

WEITZEL, V. (2006), Lethal Gold Mining Chemicals Pollutes Central Vietnam. From http://www.thanhniennews.com, accessed in June-July 2009.

WHEELER, D., H. FABIQ & R. BOELE (2002), Paradoxes and Dilemmas for Stakeholder Responsive Firms in the Extractive Sector: Lessons from the Case of Shell and the Ogoni. *Journal of Business Ethics* 39: 297-318.

WHO (1996), *Trace Elements in Human Nutrition and Health*. Geneva, WHO.

WHO (2001). Chapter V, Environmental Health Criteria 224, Arsenic and Arsenic Compounds. *Environmental Levels and Human Exposure*. Geneva, WHO.

WILEMSKI, E.A. (1994), The Land Question and Peasants in East Africa: The Land Factor in Agricultural Production in Hemisphere. *Studies on Cultures and Societies* 9: 121-149.

WILKINSON, K.P. (1991), *The Community in Rural America*. New York: Greenwood Press.

WILLIS, A. (2003), The Role of the Global Reporting Initiative's Sustainability Reporting Guidelines in the Social Screening of Investments. *Journal of Business Ethics* 43(3): 233-237.

WORLD BANK (1992), *Strategy for African Mining.* Washington DC: World Bank, Mining Unit Industry and Energy Division, Africa Technical Department Series, World Bank Technical Paper No.181.

WORLD BANK (1993), *Mineral Sector Development Technical Assistance Project: Tanzania*. Washington, DC: World Bank.

WORLD BANK (1995), *Guinea - Mining Sector Investment Promotion Project* Washington, DC: World Bank.

WORLD BANK (2000), *Attacking Poverty: World Development Report 2000/2001*. Washington, DC: World Bank.

WORLD BANK (2001a). *African Poverty at the Millennium: Causes, Complexities and Challenges.* Washington, DC: World Bank.

WORLD BANK (2001b). *Madagascar at a Glance*. Washington, DC: World Bank.

WORLD BANK (2003), *Mining Regional Strategies: Africa*. Washington, DC: World Bank.

WORLD BANK (2005), *World Development Indicators, Data for 2001*. www.worldbank.org/data/wdi2004, accessed in June 2009.
WTO (1998), Diversification of Exports Should Strengthen Mali's Trade. Geneva: World Trade Organization, Secretariat and Government Summaries, Press Release, Press/Tprb/88.
WTO (2000), *Trade Policy Review of Tanzania*. Geneva, World Trade Organization.
YAGER,T. (2004). *The Mineral Industry of Tanzania*. *U.S. Geological Survey Minerals Yearbook-2004*. Washington: United States Geological Survey.
YIN,R.(1989),*Case Study Research: Design and Methods, Third Edition, Volume 5*. Los Angeles: Sage Publications.

ASC BOOK PUBLICATIONS

Copies of all the publications listed below in the *African Studies Collection* and the earlier *Research Reports Series* may be ordered from:

African Studies Centre
Email: asc@ascleiden.nl
Tel: +31 (0)71 527 3490
Fax: +31 (0)71 527 3344

For prices, check the ASC website [www.ascleiden.nl] under Publications.

African Studies Collection

44 *Foreign direct investment and poverty alleviation. The case of Bulyanhulu and Geita gold mines, Tanzania*
Emmanuel M. Nyankweli (2012)

43 *Big Men playing football. Money, politics and foul play in the African game*
Arnold Pannenborg (2012)

42 *Unequal catch. Gender and fisheries on the Lake Victoria landing sites in Tanzania*
Adalbertus Kamanzi (2012)

41 *Fighting over forest. Interactive governance of conflicts over forest and tree resources in Ghana's high forest zone*
Mercy A.A. Derkyi (2012)

40 *Settling in and holding on: A socio-economic history of northern traders and transporters in Accra's Tudu, 1908-2008*
Ntewusu Samuel Aniegye (2012)

39 *Beyond the façade: Instrumentalisation of the Zambian health sector*
Melle Leenstra (2012)

38 *HIV/AIDS treatment in two Ghanaian hospitals. Experiences of patients, nurses and doctors*
Jonathan Mensah Dapaah (2012)

37 *Being old in times of AIDS. Aging, caring and relating in northwest Tanzania*
Josien de Klerk (2011)

36 *Militarized youths in Western Côte d'Ivoire. Local processes of mobilization, demobilization, and related humanitarian interventions (2002-2007)*
Magali Chelpi-den Hamer (2011)

35 *The Boipatong massacre and South Africa's democratic transition*
James Simpson (2011)

34 *Travelling hierarchies. Roads in and out of slave status in a Central Malian Fulɓe network*
Lotte Pelckmans (2011)

33 *The Dagara farmer at home and away. Migration, environment and development in Ghana*
Kees van der Geest (2011)

32 *Coping with inadequacy. Understanding the effects of central teacher recruitment in six ward secondary schools in Tanzania*
Wilhelm L. Mafuru (2011)

31 *Facing coal: Changing conceptions of South African coal-based pollution, with special reference to the Witbank coalfield, 1906-1978*
Michal Singer (2011)

30 Kfaang *and its technologies. Towards a social history of mobility in Kom, Cameroon, 1928-1998*
Walter Gam Nkwi (2011)

29 *Participation for local development. The reality of decentralization in Tanzania*
Henry A. Mollel (2010)

28 *Plurality of religion, plurality of justice. Exploring the role of religion in disputing processes in Gorongosa, Central Mozambique*
Carolien Jacobs (2010)

27 *In search of greener pastures? Boat-migrants from Senegal to the Canary Islands*
Miranda Poeze (2010)

26 *Researching Africa: Explorations of everyday African encounters*
Mirjam de Bruijn & Daniela Merolla, editors (2010)

25 *Wartime children's suffering and quests for therapy in northern Uganda*
Grace Akello (2010)

24 *Bodies in action. The influence of culture on body movements in post-conflict Sierra Leone*
Anneke van der Niet (2010)

23 *Ghanaian nurses at a crossroads. Managing expectations on a medical ward*
Christine Böhmig (2010)

22 *Coping with cancer and adversity: Hospital ethnography in Kenya*
Benson A. Mulemi (2010)

21 *Ominous Calm. Autochthony and sovereignty in Konkomba/Nanumba violence and peace, Ghana*
Martijn Wienia (2009)

20 *Advances in coastal ecology. People, processes and ecosystems in Kenya*
Jan Hoorweg & Nyawira Muthiga, editors (2009)

19 *Creating space for fishermen's livelihood. Anlo-Ewe beach seine fishermen's negotiations for livelihood space within multiple governance structures in Ghana*
Marloes Kraan (2009)

18 *Families in movement. Transformation of the family in urban Mali, with a focus on intercontinental mobility*
Janneke Barten (2009)

17 *Pastoralistes et la ville au Bénin. Livelihoods en questionnement*
Théophile Djedjebi (2009)

16 *Making decentralization work for women in Uganda*
Alfred Lakwo (2009)

15 *Food security and coping mechanisms in marginal areas: The case of West Pokot, Kenya, 1920-1995*
Anne Kisaka Nangulu (2009)

14 *'Beyond their age'. Coping of children and young people in child-headed households in South Africa*
Diana van Dijk (2008)

13 *Poverty and inequality in urban Sudan. Policies, institutions and governance*
Muna A. Abdalla (2008)

12 *Dilemmas of Development: Conflicts of interest and their resolutions in modernizing Africa*
Jon Abbink & André van Dokkum (eds) (2008)

11 *Teaching peace, transforming conflict? Exploring participants' perceptions of the impact of informal peace education training in Uganda*
Anika May (2008)

10 *Plantations, power and people. Two case studies of restructuring South Africa's forestry sector*
Alice Achieng Ojwang (2008)

9 *Coming back from the bush. Gender, youth and reintegration in Northern Sierra Leone*
Janneke van Gog (2008)

8 *How to win a football match in Cameroon. An anthropological study of Africa's most popular sport*
Arnold Pannenborg (2008)

7 *'Prendre le bic'.* Le Combat Spirituel *congolais et les transformations sociales*
Julie Ndaya Tshiteku (2008)

6 *Transnationalism, local development and social security. The functioning of support networks in rural Ghana*
Mirjam Kabki (2007)

5 *Tied to migrants: Transnational influences on the economy of Accra, Ghana*
Lothar Smith (2007)

4 "*Our way": Responding to the Dutch aid in the District Rural Development Programme of Bukoba, Tanzania*
Adalbertus Kamanzi (2007)

3 *Transition towards Jatropha biofuels in Tanzania? An analysis with Strategic Niche Management*
Janske van Eijck (2007)

2 *"Ask and you shall be given": Pentecostalism and the economic crisis in Cameroon*
Robert Mbe Akoko (2007)

1 *World and experiences of AIDS orphans in north central Namibia*
Mienke van der Brug (2007)

Research Reports

85 *Microfinance, rural livelihoods, and women's empowerment in Uganda*
Alfred Lakwo (2006)

84 *Trade liberalization and financial compensation. The BLNS states in the wake of the EU-South African trade and development agreement*
Sam van der Staak (2006)

83 *The rock art of Mwana wa Chentcherere II rock shelter, Malawi. A site-specific study of girls' initiation rock art*
Leslie F. Zubieta (2006)

82 *Bibliography on Islam in contemporary Sub-Saharan Africa*
Paul Schrijver (2006)

81 *Bridging the urban-rural divide: Multi-spatial livelihoods in Nakuru town, Kenya*
Samuel Ouma Owuor (2006)

80 *Bleak prospects: Young men, sexuality and HIV/AIDS in an Ethiopian town*
Getnet Tadele (2006)

79 *"The angel of death has descended violently among them." Concentration camps and prisoners-of-war in Namibia*, *1904-08*
Casper Erichsen (2005)

78 *Sahelian pathways. Climate and society in Central and South Mali*
Mirjam de Bruijn, Han van Dijk, Mayke Kaag & Kiky van Til (eds) (2005)

77 *Gacaca: Grassroots justice after genocide. The key to reconciliation in Rwanda?*
Arthur Molenaar (2005)

76 *The assertion of rights to agro-pastoral land in North Cameroon: A cascade to violence?*
Ruth Noorduyn (2005)

75 *Urban agriculture in Tanzania: Issues of sustainability*
Dick Foeken, Michael Sofer & Malongo Mlozi (2004)

74 *"We're managing!" Climate change and livelihood vulnerability in Northwest Ghana*
Kees van der Geest (2004)

73 *Community-based conservation in an entitlement perspective. Wildlife and forest conservation in Taita, Kenya*
James Gichiah Njogu (2004)

72 *Witchcraft and policing. South Africa Police Service attitudes towards witchcraft and witchcraft-related crime in the Northern Province*
Riekje Pelgrim (2003)

71 *The solidarity of self-interest. Social and cultural feasibility of rural health insurance in Ghana*
Daniel K. Arhinful (2003)

70 *Recent advances in coastal ecology. Studies from Kenya*
Jan Hoorweg & Nyawira Muthiga (eds) (2003)

69 *Structural adjustment: Source of structural adversity. Socio-economic stress, health and child nutritional status in Zimbabwe*
Leon Bijlmakers (2003)

68 *Resisting reforms. A resource-based perspective of collective action in the distribution of agricultural input and primary health services in the Couffo region, Benin*
Houinsou Dedehouanou (2003)

67 *Women striving for self-reliance. The diversity of female-headed households in Tanzania and the livelihood strategies they employ*
Anke van Vuuren (2003)

66 *Démocratisation en Afrique au sud du Sahara: Transitions et virage. Un bilan de la littérature (1995-1996)*
Klaas van Walraven & Céline Thiriot (2002)

65 *Democratization in sub-Saharan Africa: Transitions and turning points. An overview of the literature (1995-1996)*
Klaas van Walraven & Céline Thiriot (2002)

64 *Sharing a valley. The changing relations between agriculturalists and pastoralists in the Niger Valley of Benin*
Antje van Driel (2001)

63 *Pathways to negotiate climate variability. Land use and institutional change in the Kaya region, Burkina Faso*
Mark Breusers (2001)

62 *"We think of them." How Ghanaian migrants in Amsterdam assist relatives at home*
Daniel K. Arhinful (2001)

61 *Pastoralists and markets. Livestock commercialization and food security in north-eastern Kenya*
Abdirizak A. Nunow (2000)

60 *Rural development and agricultural policy in central western Zambia. The case of Kaoma-Nkeyema tobacco scheme*
K. Hailu (2000)

59 *Secrecy and ambiguity. Home care for people living with HIV/AIDS in Ghana*
Maud Radstake (2000)

58 *Urban agriculture in Africa: A bibliographical survey*
R.A. Obudho & Dick Foeken (1999)

57 *Changing security. Livelihood in the Mandara Mountains in North Cameroon*
Annette van Andel (1998)

56 *Catholic mission, colonial government and indigenous response in Kom (Cameroon*
Jacqueline de Vries (1998)

55 *Eritreo-Ethiopian studies in society and history: 1960-1995. A supplementary bibliography*
Jan Abbink (1996)

54 *Commodity auctions in Tropical Africa. A survey of the African tea, tobacco and coffee auctions*
John Houtkamp & Laurens van der Laan (1993)

53 *Land and labour in Myjikenda agriculture, Kenya, 1850-1985*
Henk Waaijenberg (1993)

52 *Democratisation en Afrique au Sud du Sahara. Un aperçu de la littérature*
Rob Buijtenhuijs & Elly Rijnierse (1993)

51 *Democratization in Sub-Saharan Africa. An overview of literature*
Rob Buijtenhuijs & Elly Rijnierse (1993)

50 *Women in Bamenda. Survival strategies and access to land*
Adri van den Berg (1993)

49 *Pratiques foncières à l'ombre du droit. L'application du droit foncier urbain à Ziguinchor, Sénégal*
Gerti Hesseling (1992)

48 *Power and privilege in the administration of law. Land law reforms and social differentiation in Cameroon*
Cyprien Fisiy (1992)

47 *Staatsvorming, rurale ontwikkeling en boeren in Guiné-Bissau*
H. Schoenmaker (1991)

44 *Popular Islam in Tunisia*
Kees Schilder (1991)

43 *Seasons, food supply and nutrition in Africa*
Dick W.J. Foeken & Adel P. den Hartog (eds) (1990)

42 *Socio-economic development of women in Zambia*
A. Touwen (1990)

41 *Enduring crisis, refugee problems in Eastern Sudan*
Henk Tieleman & Tom Kuhlman (1990)

40 *Marketing policies and economic interests in the cotton sector of Kenya*
Tjalling Dijkstra (1990)

39 *The IMF-World Bank's stabilisation and structural adjustment policies and the Uganda economy, 1981-1989*
D.W. Nabudere (1990)

38 *Economic management in neo-colonial states: A case study of Cameroon*
N. Jua (1990)

34 *Aspects of the Apartheid state. A bibliographical survey*
Ineke van Kessel (1989/91)

33 *Scenes of change: Visions on developments in Swaziland*
Henk Tieleman (ed.) (1988)

32 *State formation, religion and land tenure in Cameroon. A bibliographical survey*
Kees Schilder (1988)

30 *Irriguer pour subsister*
Geert Diemer & E. van der Laan (1987)

29 *Economic management in Cameroon: Policies and performance*
W.A. Ndongko (1987)

28 *Leven en werken in een Nyakyusa dorp*
Nel van Hekken (1986)

27 *Muslims in Mango*
Emile van Rouveroy van Nieuwaal (1986)

25 *West African colonial civil servants in the nineteenth century*
Kwame Arhin (1985)

24 *Staatsvorming in Guiné-Bissau*
J.H. Schoenmakers (1986)

23 *Producer prices in Tropical Africa*
Paul Hesp (1985)