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Lobe, Pius Robert

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EVALUATION OF GOVERNMENT EQUITY PARTICIPATION IN THE MINERALS SECTOR: A CASE STUDY OF TANZANIA FROM 1996 TO 2015

Pius Robert Lobe

A research report submitted to the Faculty of Engineering and the Built Environment, University of the Witwatersrand, Johannesburg, in partial fulfilment of the requirements for the degree of Master of Science in Engineering.

Johannesburg, 2018

DECLARATION

I declare that this research report is my own unaided work. It is being submitted to the Degree of Master of Science to the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination to any other University.

Signed:

_____

Pius Robert Lobe

This _____day of_____ year_____

ABSTRACT

Government's equity role in the minerals sector is one of the nationalist measures to have a greater control and management of mineral resources in a country. This study looks into evaluation of government equity participation in the minerals sector in which Tanzania is a case study from 1996 to 2015. Amongst the objectives of the study was the determination of the number of mineral rights, minimum allowable exploration expenditures in Prospecting Licences (PLs) and forms of equity role of Tanzanian government in the minerals sector with their projects. Methodology of research included going through the background of the study, literature review, collection of data and analysis of PLs, Mining Licences (MLs) and Special Mining Licences (SMLs) to mention a few.

Some of results of the research have indicated that, there were106 mineral rights (97 PLs, 3 MLs and 6 SMLs). State Mining Corporation (STAMICO) and National Development Corporation (NDC) as parastatals and Treasury Registrar (TR), a government agent owned these mineral rights on the behalf of the Tanzanian government (TZGT). It was also found that there are three forms of equity role namely: carried equity, paid equity and free carry equity that were applicable in prospecting, medium and large scale mining in the country. Carried equity role was applied in 56 PLs, 3 medium scale mines and 4 large scale mines. The three medium scale mines in which carried equity role was applied were Merelani TanzaniteOne Mining Ltd (MTM), Kigosi Gold Mine (KGM) and Ngaka Coal Mine (NCM). On the other hand, carried equity role was also exercised in the four large scale mines namely: Buckreef Gold Mine (BKGM), Liganga Iron ore Mine (LIOM), Mchuchuma Coal Mine (MCM) and Williamson Diamonds Mine (WDM).

Paid equity role was applied in 41 PLs and 2 large scale mines namely: Kiwira Coal Mine (KCM and Stamigold Biharamulo Mine (SBM). Although the Mining Act, 2010 defines the free carry equity in terms of the free carried interest (FCI), this equity role approach is not yet in practice in Tanzania. In 2014, TZGT planned to execute free carry equity in Nachu Graphite Project (NGRP) and Mkuju River Uranium Project (MRUP). Negotiations for having free carried interest (FCI) for each project were conducted between the TZGT and project's owners from 2014 to 2015. In 2015, negotiations between parties were concluded

unsuccessful, as parties could not reach consensus on FCIs. This consequently impeded signing of minerals development agreements (MDAs), which also limited execution of the free carry equity role by the government.

Research revealed also that there were a number of challenges or shortfalls faced by the TZGT equity role strategy in the mineral sector. One of the major challenge was the secrecy in agreements and contracts entered between the TZGT and the private sector investors through various business ownerships and mineral developments pertaining the minerals sector. This in turn resulted to non-transparency and unaccountability in the prospecting and mining, which risked TZGT entering unfair and/or objectionable agreements or contracts.

Some of the conclusions were counter productivity of TZGT equity role and inadequacy of financial benefits realised from the strategy. These conclusions demonstrated ineffective performance of equity role of the Tanzanian government in prospecting, medium and large scale mining. Recommendations given in this research study report, is that, the government should review the Mining Act and Regulations of 2010. This is to allow the government incorporation of Parliament in the handling of agreements or contracts in the minerals sector. Moreover, proposition of fixed rates of FCI is among areas of future research work.

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DEDICATION

To my lovely wife Joyce; and my children: Janet, Harriet, Andrew and Shayna. I am so grateful for your support and encouragement towards this success.

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LIST OF ACRONYMS AND SYMBOLS

AOBG:	All minerals other than building materials and gemstones
BKGCL:	Buckreef Gold Company Limited
BKGM:	Buckreef Gold Mine
BGM:	Bulyanhulu Gold Mine
BZGM:	Buzwagi Gold Mine
CSR:	Corporate social responsibility
DRC:	Democratic Republic of Congo
DSE:	Dar es Salaam Stock Exchange
EQG:	Equatorial Guinea
EPZ:	Export Processing Zone
FRP:	First Renewal Period
FCI:	Free carried interest
GGM:	Geita Gold Mine
HDI:	Human Development Index
Inc.:	Incorporated
IEC:	Intra Energy Corporation of Australia
IETL:	Intra Energy Tanzania Limited
IPP:	Initial Prospecting Period

JV:	Joint venture
kcar:	kilocarats
KCM:	Kiwira Coal Mine
KCPL:	Kiwira Coal Power Ltd
KGM:	Kigosi Gold Mine
kt:	kilotonnes
kV:	kilovolts
LIOM:	Liganga Iron ore Mine
LIOP:	Liganga Iron ore project
Ltd:	Limited
MCD:	Mine community development
MCM:	Mchuchuma Coal Mine
MCP:	Mchuchuma Coal project
MD:	Minerals Department
MDA(s):	Minerals development agreement(s)
MEM:	Ministry of Energy and Minerals
ML(s):	Mining Licence(s)
MRUP:	Mkuju River Uranium Project
MTM:	Merelani TanzaniteOne Mining Ltd

Mtoz:	million troy ounces
MW:	Megawatts
NB:	Nota Bene
NCM:	Ngaka Coal Mine
NDC:	National Development Corporation
NGRP:	Nachu Graphite Project
NLGM:	New Luika Gold Mine
NMGM:	North Mara Gold Mine
No:	Number
PAYE:	Pay As You Earn
PCL(s):	Processing Licence(s)
PGMs:	Platinum Group Metals
PL(s):	Prospecting Licence(s)
PML(s):	Primary Mining Licence(s)
R&D:	Research and development
REE:	Rare Earth Elements
RFL(s):	Refining Licence(s)
ROK:	Republic of Korea
SAGL:	Sky Associates Group Limited

SBM:	Stamigold Biharamulo Mine
SDL:	Skills Development Levy
SHG:	Sichuan Hongda Group of China
SL(s):	Smelting Licence(s)
SML(s):	Special Mining Licence(s)
S/No.:	Serial number
SRP:	Second renewal period
SSMs:	Small scale miners
STAMICO:	State Mining Corporation
STAMIGOLD:	State Mining Gold
t:	tonnes
TANZAM 2000 Ltd:	Tanzania American International Development Corporation 2000 Limited
TCIMRL:	Tanzania China International Mineral Resources Limited
TEL:	Tancoal Energy Limited
TEITI:	Tanzania Extractive Industries Transparency Initiative
TOML:	TanzaniteOneMining Ltd
TR:	Treasury Registrar
TRX:	Tanzanian Royalty Exploration Corporation

TTM:	TanzaniteOne Tanzanite Mine
TZS:	Tanzanian Shilling
USD:	United States Dollar
US$:	United States Dollar
VAT:	Value Added Tax
WDM:	Williamson Diamonds Mine
WHT:	Withholding Tax
WI:	Working Interest

1 INTRODUCTION

1.1 Background of the study

Unlike other natural resources, mineral resources (e.g., gold, coal, iron, gypsum, diamond, stones, tanzanite, gas, oil, etc.) cannot be renewed once depleted (Barma *et al*, 2012). These resources are regarded as opportunities by the host countries. Government can grant private companies mining rights to extract these mineral resources, or have a stake in the companies or establish state companies to oversee its interests in the minerals sector. The establishment of a state company to oversee government interests in the minerals sector implies a direct participation of government in the sector, through equity participation. Equity participation /role is defined as the action of individual(s) or body corporate to hold shares in an enterprise, company or asset (Otto, nd.; Brown, 2013; Natural Resource Governance Institute, 2015b).

However, it is important to note that economic viability of the mineral resources determines establishment of mines to exploit minerals other than oil and/or gas (e.g., gold, coal, iron, etc.) and wells for oil and/or gas. In these mines and wells, local citizens secure variety of employments and local content opportunities, which raise their incomes. Mineral resource exploitation is also the source of government revenues through tax paid by operating mining companies.

Production and selling of mineral products enable government to collect revenues through royalties, corporate income taxes and other legal means. In addition to revenues, they contribute mineral products whose sales are useful in determining minerals sector's contribution to the Gross Domestic Product (Otto *et al*, 2006; Wise and Shtylla, 2007). Where there are good government policies, the minerals sector can integrate with other sectors of the economy to establish downstream industries, etc. (Highley *et al*, 2004; Ministry of Energy and Minerals, 2009).

In this research study, good government policies are the implementable and result-oriented plans or courses of action of the government that influence and determine decisions, actions and other matters in the interest of national community (Businessdictionary, 2017a; Freedictionary, 2017; Bendiola, 2013).

The sectors of the economy which can be integrated with the minerals sector or industry include agriculture, energy, manufacturing, construction, transportation, etc. (Highley *et al*, 2004; Wise and Shtylla, 2007; Ministry of Energy and Minerals, 2009). Through the integration of different sectors of the economy, various business industries emerge. These businesses are important for both government revenue earnings and Gross Domestic Product (GDP) contribution through their products and services produced and sold, respectively. The government earned revenues have to be kept in the treasury to be reserved as coffers useful for government budgeting and spending. It is worth underlining here that a government is obliged to incorporate and/or integrate well its mineral resources benefits into the country's national development plan. This is to enable them to contribute to the country's and local citizens' economic prosperities (National Planning Commission, 2011). Some of the common economic prosperities that can be attained or achieved in most countries are mentioned as follows (Palagashvili, nd.):

- Increased GDP and GDP per capita;
- Increased accumulated country's foreign reserves in the central banks and/or international banks;
- Increased human development index (HDI);
- Increased government provision of social services, social protection and infrastructure (e.g., water, roads, power, logistics; communications, water, etc.);
- Increased income-generating employments;
- Adequate and increased entrepreneurships and livelihood activities; and
- Increased government and /or local citizens' equity roles in enterprises.

However, in order for the minerals sector to contribute more to the nation's and local citizens' economic prosperities, the following are amongst the necessities:

- Government establishment or improvement of fiscal policy for taxation in the minerals sector and government spending of collected taxes from the sector (Pfister, 2009: Sunley and Baunsgaard, 2001);
- Strong government administration and management of the minerals sector with respect to established or improved mineral sector's policy and legal and regulatory frameworks (Barma *et al*, 2012; Bryan and Hofmann, 2007);
- Government execution of implementable and result-oriented actions in attaining of nation's and local citizens' economic prosperities proportionate to its earnings received from the minerals sector (Greener *et al*, 2015; United Nations, 2013 and nd.; Hadi, 2016); and
- Government political will for enabling the achievement of the above three requirements (Bryan and Hofmann, 2007; Man-wai, nd.).

Table 1.1 depicts activities and/or actions pertaining to government establishment or improvement of fiscal policy, strong government administration and management of the minerals sector, government execution of implementable and result-oriented actions and political will.

Table 1.1 Some activities for achieving economic prosperities via minerals sectors

Requirement/Issue	Activity and /or action
Government establishment of new or improvement of existing fiscal policy for taxation in the minerals sector and government spending of such collected taxes or revenues.	Establishment of new or strengthening of existing legal and regulatory frameworks in introducing taxes in minerals sector, collection of such taxes or revenues and government spending of the same (Pfister, 2009: Sunley and Baunsgaard, 2001).
Strong government administration and management of the minerals sector with respect to established or improved minerals sector's policy and legal and regulatory frameworks.	Establishment of new or strengthening of existing legal and regulatory frameworks (Barma *et al*, 2012; Bryan and Hofmann, 2007; African Union, 2009).
	Establishment of new or strengthening of existing institutional frameworks (African National Congress, 2012; Lopes, 2013).
	Establishment of new or strengthening of existing institutional assessment frameworks for assessing institutions overseeing the whole minerals sector in the country (Barma *et al*, 2012; African National Congress, 2012).
	Control of value chains (from exploration to selling points) of mineral products including adequate and timely revenue collection and control of misinvoicing (transfer pricing) and/or financial manipulation to deter tax evasion (African National Congress, 2012; Marah, 2014).
	Control of safety, occupational health and environmental protection (United Nations Environment Programme, 1997 and 2000; Smith, 2016).
	Government improvement of public accountability and transparency and avoidance or prevention of corruption, mineral rent seeking and conflicts or civil wars in the management of the minerals sector (Marah, 2014; Gilman, 2005; Barma *et al,* 2012).
Government execution of implementable and result-oriented actions in attaining nation's and local citizens' economic prosperities proportionate to its earnings received from the minerals sector	Government provision of social services (e.g., education, food subsidies, etc.), social protection (e.g., pensions, medical insurance, etc.) and infrastructure (e.g., water, roads, power, logistics, communications, water, etc.) to the local people through spending of revenues collected from sectors of economy including minerals sector boosted by mineral booms (Greener *et al*, 2015; United Nations, 2013 and nd.; Hadi, 2016).
	Government accumulation of international reserves in central and abroad banks and avoidance or prevention of overspending during minerals boom periods (Sarraf and Jiwanji, 2001).
	Government payment of external debts to stabilize growth on one hand and enabling of the minerals sector to integrate other sectors of economy on the other, during minerals boom periods (Sarraf and Jiwanji, 2001).
	Public accountability and transparency in actions taken by government in improving country's and local citizens' economic prosperities (Marah, 2014; Lopes, 2013).
Government political will for enabling the achievement of the above three requirements respectively.	Full government support of financial and human resources as well as taking legal actions against corrupt personnel and other defaulters (Bryan and Hofmann, 2007; Man-wai, nd.).

It is important to note here that, not every country endowed with mineral resources is with high economic growth and developments. There are many reasons that trigger this shortfall. Table 1.2 depicts some factors that attributed to less economic growth and developments to both Equatorial Guinea (EQG) and Democratic Republic of the Congo (DRC) from 1965 to 2015 despite their mineral booms in that period respectively.

Table 1.2 Factors that attributed to less economic growth and developments in EQG and DRC

Some factors that attributed to less economic growth and developments	Some government actions/activities in translating mineral booms into economic prosperities	Consequences of government not utilizing mineral booms properly
A: Equatorial Guinea with oil boom		
• Higher rates of authoritarianism, kleptocracy, corruption, as well as non-transparency and unaccountability in oil production contracts, oil revenues and expenditures to the public from 1968 to 2015 (Nunez, 2013; McSherry, 2006; Solomon, 2012; Equatorial Guinea Justice, 2010).	• None or poor government enabling of the mineral sector to integrate other sectors of the economy, and promotion of entrepreneurships and livelihood activities to its local people (African Economic Outlook, 2012a; International Finance Corporation, nd.).	• In 2013, Equatorial Guinea scored Human Development Index (HDI) of 0.554, having a 136th position in the world (out 186 countries) despite its GDP per capita being US$32,026 higher than US$27,541 of Republic of Korea (not endowed with mineral resources). ROK yet scored HDI of 0.909 in the same year. (United Nations Development Programme, 2013). • In 2013, more than 60% of the population lived in extreme poverty (less than US$700 per year) despite average per capital income of US$32,026 highest in the continent (Forgét, 2013).
B: Democratic Republic of the Congo with mineral (copper, coltan, diamond, tin, zinc, oil) booms		
• Higher rates of authoritarianism, kleptocracy, corruption, civil wars, as well as non-transparency and unaccountability in mining contracts, mineral resource revenues and expenditures to the public from 1965 to 2015 (Bwana, nd.; Solomon, 2012; Natural Resource Governance Institute, 2015a).	• None or poor government enabling of the mineral sector to integrate other sectors of the economy, and promotion of entrepreneurships and livelihood activities to its local people (African Economic Outlook, 2012b; Lyenda, 2005).	• In 2013, the DRC scored HDI of 0.304, the last position in the world (out of 186 countries). It also scored GDP per capita of US$329 making it the poorest country in the world (United Nations Development Programme, 2013). • In 2013, 71% of the population lived below the poverty level (African Development Bank, 2013).
• Institutional incapacity and weak legal and regulatory frameworks, e.g., 9 of at least 45 'shell' companies incorporated in the British Virgin Islands as 'speculators' acquired Congolese mining assets at lower market values and sold them to multinational firms to obtain huge profits (Marah, 2014).		
• Misinvoicing practices of under-invoicing of mining assets between 2010 and 2012 that caused a loss of US$1.4 billion to the DRC government (Economic Commission for Africa, 2010; Marah, 2014).		

From Table 1.2, factors that hindered economic growth for EQG and DRC maybe classified in three major groups namely:

- Fiscal policy factors which include the followings;
  - Non-transparency and unaccountability in oil revenues and expenditures to the public from 1965 to 2015 for both EQG and DRC;
  - Institutional incapacity and weak legal and regulatory frameworks, e.g., nine of at least 45 'shell' companies incorporated in the British Virgin Islands as 'speculators' acquired Congolese mining assets at lower market values and sold them to multi-national firms to obtain huge profits (Marah, 2014); and
  - Misinvoicing practices of under-invoicing of mining assets between 2010 and 2012 that caused a loss of US$1.4 billion to the DRC government (Economic Commission for Africa, 2010; Marah, 2014).
- Political factors which include authoritarianism, kleptocracy for both of these countries with inclusion of civil wars for DRC;
- Ethical factors which include corruption, non-transparency and unaccountability in oil production contracts to the public from 1965 to 2015 to both EQG and DRC; and

Poor fiscal policy environment led to failure for EQG and DRC governments to collect optimal revenues, which attributed to the aforementioned losses presumably leading to countries' less economic prosperities. There was also a problem of non-transparency and unaccountability in oil revenues and expenditures to the public from 1965 to 2015 to both EQG and DRC. This was a repugnant to the principles of fiscal policies, which require transparency and accountability in taxation and expenditures. If political factors are undealt with, they undermine the governments' political will to the mineral law enforcers and/or regulators in dealing with factors negatively affecting the economic achievements. On the other hand, resolving of ethical factors would improve ethical conducts of law enforcers and/or regulators on the enforcement of the countries' fiscal and mineral policies together with their legal and regulatory frameworks.

From Table 1.2, EQG and DRC governments failed to translate mineral booms they were fortuned into economic prosperities making their local citizens impoverished to abject levels. As seen further in Table 1.2 there were none or poor governments enabling of the mineral sectors to integrate other sectors of countries' economies. In addition, both EQG and DRC governments meagerly promoted entrepreneurships and livelihood activities to its local citizens (African Economic Outlook, 2012b; Lyenda, 2005). The sampled countries' lower scores in human development indices notably: 0.554 for EQG in 2013 and 0.304 for DRC in the same year evidenced these facts (United Nations Development Programme, 2013).

Given the definition of the resource curse from Natural Resource Governance Institute (2015a) and Solomon (2012), it is evident that EQG and DRC underwent resource curse phenomenon for having less developments despite being rich in mineral resource endowment in the period 1965-2015. Major causes of resource curse include 'Dutch disease', lack of democracy, conflicts, corruption, rent seeking, inefficient spending and borrowing (Natural Resource Governance Institute, 2015a; Brinčíková, 2016; Solomon, 2012).

Dutch disease' is defined as the bad effect of increased exchange rate of local currency in undermining prosperity of certain industries of economy in a country (Natural Resource Governance Institute, 2015a; Brinčíková, 2016; Solomon, 2012). In 'Dutch disease', imports at local market tend to become cheaper than products produced from agriculture and manufacturing industries within the country. This is due to high production costs attributed to high labour costs, which cause exports from the same sectors to become more expensive. This consequently make the local sectors less competitive, thus, their prosperities undermined (Natural Resource Governance Institute, 2015a; Brinčíková, 2016). However, it is important to note that skilled labour scarcity causes high labour costs in the aforementioned industries. High skilled labour scarcity is a result of high migration of labour from agriculture and manufacturing sectors to the minerals sector for it having greener pastures, which might be alluded to mineral booms (Brinčíková, 2016).

Mineral resource wealth especially oil wealth has been the causative of some governments to become or remain authoritarian for over years undermining democracy (Natural Resource

Governance Institute (2015a). In authoritarian governments where lack of democracy exists, personal freedoms are subject to the orders and controls of the governments. In situation like this, governments take advantage of the calmness of the citizens to deprive their welfare needs and other rights despite financial benefits realisation from their minerals sectors (Nunez, 2013; Greener *et al*, 2015; Natural Resource Governance Institute, 2015a; Bwana, nd; Equatorial Guinea Justice, 2010).

On conflicts, natural resources including mineral resources have been causing provocations, and sustaining of internal conflicts as different groups fight for control of the resources or use natural resources to finance their fighting (Natural Resource Governance Institute, 2015a).

For instance during the civil war in DRC between November 1998 and April 1999, a total of 1,000 to 1,500 tonnage of coltan stockpiles belonging to the Belgian-Zairian company *Société Minière et Industrielle du Kivu* (SOMINKI), the principal producer of the commodity were looted (Hague Centre for Strategic Studies, 2013). The rebel group *Rassamblement Congolais pour la Democratie* (RCD) operating in DRC was involved in the looting of the coltan (Hague Centre for Strategic Studies, 2013).

Economic Development Department (2017) defines corruption as “the misuse of entrusted power for private gain”. Corruption acts may include bribery, conflict of interest, embezzlement, influence, favouritism and nepotism, etc. (Economic Development Department, 2017). Some of the areas mostly affected by corruption in the minerals industry include:

- Licencing of the mineral rights useful for commodity value chain from exploration to the selling points (Wolfe and Williams, 2015);
- Auditing of desirable projects’ net profits before and after taxes for companies’ payments of the corporate income taxes and dividends to the shareholders (Thuronyi, 1996; Guj *et al*, 2013); and
- Valuation of minerals’ values where undervaluation can take place for royalties and other taxes’ evasions (Oomes and Vocke, 2003; Guj *et al*, 2013).

Therefore, when corruption practices become extreme in the mineral-rich countries chances are high for such countries to lose substantial revenues. This would undermine the economic prosperities of the countries and their local citizens.

Fischer (2004) describes rent seeking as an ability to capture incomes without producing output or making a productive contribution. Cases of rent seeking have also appeared in the mineral-rich countries. For instance, in 2003, the Equatorial Guinea's ruler, Teodoro Obiang Nguema Mbasogo, deposited US$500 million in his private bank account in the United States of America alleged to be sourced through rent seeking in oil deals in his country (Lashmar, 2003). Had the benefits of this money been reciprocated to the of EQG's community through wealth creation they would have significantly added an impact on country's and local citizen's economic prosperities.

Some mineral-rich countries have also experienced less economic growth and developments aggravated by inefficient spending and borrowing (Natural Resource Governance Institute, 2015a). This normally happens when mineral-rich countries tend to spend and borrow hugely when experiencing rapid economic expansion period (boom) because of revenues realised from commodities of high or stable likely prices (Haslam and Heidrich, 2016; Natural Resource Governance Institute, 2015a; Amadeo, 2017). In this period countries endowed with minerals tend to invest hugely in lavish and legacy projects such as monuments, airports, etc., whilst undermining spending on education, health and other social services. However, when commodities' prices fall, a period of economic contraction (burst) emanates. In the burst situation countries enter into serious debt crises, people lose their jobs and a wide spread bankruptcy to private sector occurs like a case in Nigeria, Mexico and Venezuela in 1980 (Natural Resource Governance Institute, 2015a; Haslam and Heidrich, 2016).

In order to tackle resource curse, measurements' activities or actions expressed in Table 1.1 are useful as the government can apply them. In addition, government is responsible for direct solving of lack of democracy, conflicts, corruption, etc., as sources of resource curse once they happen in the country. Solution for such problems would mostly be government being accommodative to democratic society, resolving of conflicts as well as prevention and combating of corruption. Nevertheless, some governments apart from applying

aforementioned approaches in tackling resource curse may also incorporate resource nationalism actions (Leon, 2015).

Resource nationalism is defined is a strategy where governments use economic nationalist policies to improve local returns or domestic benefits from resource industries (Wilson, 2015; Leon, 2015). According to Wilson (2015) and Leon (2015), a government can employ different measures in improving local returns from country's natural resources. This is in line with deriving a significant share of economic benefits that accrue from exploitation of resources. Measures or actions applicable in expressing resource nationalism can vary from country to country, however the common ones include:

- Government imposition or increase of royalties or mining taxes;
- Mandatory local contents including mandated beneficiation, locally procurement of goods and services as well as employment of locals;
- Government equity role or participation;
- Government fiscal measures for stabilisation and functioning of the country's economy;
- Preview of mining contracts with a view of possible renegotiation or cancellation; and
- Equity role of local citizens through government empowerment initiatives.

Nevertheless, the aforementioned forms of resource nationalism have been variably applied in a number of mineral-rich countries of different economic systems. To mention a few, countries include Germany, Botswana, Chile, DRC, Angola, Norway, etc. (Sturesson *et al*, 2015; Solomon, 2012; Debswana Diamond Company (Pty) Ltd, 2014; Natural Resource Governance Institute, 2015b).

In addition, some of these methods, especially government equity role in mineral extractive projects, have been useful in some countries' minerals sectors. Four forms in which government equity role in minerals sector can take place include paid (full equity), carried equity, free equity and free carry equity (Natural Resource Governance Institute, 2015b, McPherson, 2008; Cottarelli, 2012). Minerals sectors in such countries have positively contributed to the countries and local citizens' economic prosperities. For instance, in 1994,

the Botswana government equity role through Debswana Diamond Company (Pty) influenced the industry's contribution of 42.2% to the GDP. This consequently resulted into GDP per capita of approximately US$5,239 and HDI of 0.670, which were among the highest in Africa at that time (African Development Bank, 2016).

Looking into Tanzania, since 1884 to date, the country has been having equity role in the minerals sector as one way of expressing resource nationalism (Ministry of Energy and Minerals, 2015a). Historically, Tanzania is the country that emanated from the union of the two republics namely, Tanganyika and Zanzibar. In regulating the minerals sector in Tanzania, the government enforced five (5) mining laws from 1920 to date and these are:

- Mining Ordinance of 1920, active from 1920 to 1928;
- Mining Ordinance of 1929, active from 1929 to 1978;
- Tanzania Mining Act of 1979, active from1979 to 1997;
- Tanzania Mining Act of 1998, active from 1998 to 2009; and
- Tanzania Mining Act of 2010, active from 2010 to date.

According to BusinessDictionary (2017b), Ordinance is defined as the decree or law promulgated by a state or national government without the consent of the legislature. On the other hand, Act is the law emanating from a passed bill by legislature (Duhaime's Law Dictionary, 2017). Mineral Policies and Mining Regulations endorsed in Tanzania from 1920 to date were Mineral Policies of 1983, 1997 and 2009 and Mining Regulations of 1999 and 2010. More importantly to note, the economic transformation envisaged by the government was a major factor for the formulation of such policies, laws and regulations. For instance, inception of the Mineral Policy of 1997 aimed at promoting private investment in the minerals sector. The aim was to increase minerals sector's contribution to the GDP. It meant to raise GDP from below two percent to ten percent by 2025 (Ministry of Energy and Minerals, 2009).

In addition, the Mineral Policy of 2009 is aimed at increasing the integration of minerals sector with other industries of economy. These industries include among others, agriculture, energy, manufacturing, construction and transportation, which would be possible through

beneficiation, local contents (Highley *et al*, 2004; Ministry of Energy and Minerals, 2009). The reason for integrating minerals sector with other industries of economy was to maximise its contribution to the GDP and poverty alleviation in the country (Ministry of Energy and Minerals, 2009).

Tanzanian government (TZGT) introduced Mineral Policy of 2009 for equity role in the minerals sector that led to the enactment of Mining Act of 2010 and Mining Regulations of 2010. The objectives of this policy were to:

- Strengthen the legal and regulatory framework through strengthening of the institutional capacity for effective administration and monitoring of the minerals sector;
- Promote small scale mining and facilitate value addition to minerals;
- Strengthen environmental management; and
- Promote and facilitate value addition activities to increase income and employment opportunities.

Following the inception of Mining Act of 2010 and Mining Regulations of 2010 in 2010, the TZGT assigned State Mining Corporation (STAMICO) to oversee government interests in prospecting, medium and large scale mining projects among other roles (Ngonyani, 2014; State Mining Corporation, 2015a). STAMICO is a parastatal, which was established in 1972.

According to State Mining Corporation (2015a and 2016a), other roles of STAMICO are:

- To invest in the minerals sector through mineral exploration and prospecting, development and operation of mines and mineral trading;
- To carry out commercial services such as drilling, exploration and consultancy services; and
- To coordinate the transformation of artisanal and small scale mining into regulated, environmentally friendly, safe, productive and sustainable operations.

Government interests in which STAMICO was tasked by the Tanzanian government to oversee included free carried interests (FCIs), paid interests, and carried interests (Ministry of Energy and Minerals, 2009 and 2010a; Ngonyani, 2014; State Mining Corporation, 2015a).

It is important to highlight these interests here, though discussion covering the equities they emanate from as forms of government equity role is in Section 2.5.

Free carried interest (FCI) is the percentage of total profits of the mine paid to the state owned corporation or parastatal as dividends by the holder of mining licence or mine. In this form of equity interest, the TZGT is not entitled for any contribution of the capital share in the mining project. The onus of meeting capital investment of the mining project remains to the investor who foots both his/her and TZGT equity capital shares respectively (Duane, 2012; Kaba, 2017). Thus, in the FCI strategy the dividends earned by the TZGT during the life of the mine are not charged or deducted by the investor to recoup his/her money spent in contributing TZGT equity capital share in the project (Ministry of Energy and Minerals, 2010a).

Paid interests are profits generated from prospecting projects, medium and large scale mines that are cash-financed by the parastatal as the sole commercial entity representing the government. In this type of government interest, TZGT through STAMICO would enjoy returns as profits for having ownership shares in such projects. In addition, when STAMICO enters joint venture agreements with other private sector investor in a company, it is set to enjoy dividends (McPherson, 2008). These dividends are the percentages of total profits generated from such business ownerships in prospecting, medium and large scale mining.

Carried interest paid to the parastatal would mean dividends paid to the government through its carried equity role in the project. TZGT becomes an investor with a private sector investor in a project without contributing any equity capital share. The private sector investor carries the supposed equity capital share for TZGT and recovers it through TZGT foregone-dividends with interests (Heller, 2011).

Nevertheless, apart from STAMICO there is also National Development Corporation (NDC), a parastatal and Treasury Registrar (TR), a government agent. These two oversee responsibilities of TZGT carried interests in prospecting, medium and large scale mining. NDC as a parastatal and established in 1959 is responsible for the stimulation of industrialisation in country's sectors of economy including minerals sector collaborating with the private sector (National Development Corporation, 2012a). On the other hand, TR

monitors and evaluates day-to-day performances of parastatals inclusive of STAMICO and NDC in overseeing government interests (TanzaniaInvest, 2016).

1.2 Problem statement and research question

Since the inception of the Mining Act of 2010 and the government's mandate to STAMICO to oversee government interests in prospecting, medium and large scale mining there has been, no evaluation research study conducted on equity role of the TZGT in minerals sector. This poses a question *"How effectively has the equity role performance of the TZGT in prospecting, medium and large scale mining been since the enactment of Mining Act of 2010?"* In order for this research study to have a meaningful contribution, a period of 20 years was investigated, that is from 1996 to 2015.

1.3 Objectives of the study

The objectives of the study were to:

- Determine the number of mineral rights, minimum allowable exploration expenditures in PLs and receivable annual levies for all mineral rights under Tanzanian government equity role;
- Determine forms of Tanzanian government equity role in prospecting, medium and large scale mining as well as projects practicing such equity role forms;
- Determine financial and non-financial benefits of Tanzanian government equity role in prospecting, medium and large scale mining; and
- Determine the challenges faced by equity role of Tanzanian government in prospecting, medium and large scale mining.

1.4 Significance of the research

Prospecting, medium and large scale mining are important in the Tanzanian minerals sector, since they can enable the minerals sector to positively contribute to the economic prosperities of the TZGT and local citizens. However, in order for this to happen, their operations would

need to be optimal, well financed, administered and managed. From 1996 to 2008, Tanzanian minerals sector experienced financial and non-financial benefits and challenges (Tanzania Minerals Audit Agency, 2012; Msabaha, 2006). Some of the financial and non-financial benefits include:

- An increased sector contribution to GDP from 1.4% in 1998 to 3.0% in 2008;
- From 2007 to 2008, a total of 2.1 Mtoz of gold were exported from Tanzania making Tanzania the largest gold contributor in Africa, behind South Africa, Ghana and Mali;
- Mining royalty valued at US$199.40 million was paid to TZGT by major gold mines from 2001 to 2008; and
- Large scale mines employed 23,474 locals and 1,579 expatriates from 2005 to 2008.

However, there were various challenges experienced by the minerals sector. Some challenges in the minerals sector in the period of 1996 to 2008 were:

- Low integration of the minerals sector with other sectors of the economy;
- Inadequate capacity to administer the sector; and
- Growing negative public perception of the minerals sector. This was in respect to its low contribution in both social and economic aspects.

To address aforementioned challenges, Tanzanian government took steps through the enactment of the Mineral Policy of 2009. The policy was intended to enable the government to have equity role in the prospecting, medium and large scale mining. This then enabled the government to:

- Have greater control and management of minerals resources in the country;
- Derive more economic benefits that ensue from minerals resources exploitation;
- Facilitate integration of minerals sector with other sectors of economy; and
- Enable national capacity building.

The purpose of this research study is to evaluate the equity role of the Tanzanian government in the minerals industry in order to ascertain the value realised from the industry after the

enactment of the Mineral Policy of 2009. However, this evaluation includes analysis of benefits realised prior to enactment of this Policy in order to gauge if any value was generated through introduction of this Policy.

1.5 Limitations of the research

The research study limitation was that some mining companies could not avail their annual sustainability, financial and accounts reports to public domains.

1.6 Outline of chapters

Chapter 1 (Introduction) described background of the study, problem statement and research question. Other things discussed in this chapter include, objectives of the study, significance of the research and limitations of the research.

Chapter 2 (Literature review) expounds on the government equity role in the minerals sector and forms of equity role. It also outlines Tanzanian minerals endowment, mines and mining methods as well as contribution of Tanzanian minerals sector to GDP.

Chapter 3 (Research Methodology) describes methodology used in performing research study on the guidance of research objectives derived from research question. This chapter covers background of the study, literature review, collection of data, areas of analysis and frameworks for computation of minimum exploration expenditures and payable annual levies for mineral rights.

Chapter 4 (Tanzanian government equity role in the minerals sector) demonstrates the Tanzanian government equity role in prospecting, medium and large scale mining. It also highlights information on the status of each medium and large scale mine in Tanzania under TZGT equity role.

Chapter 5 (Results and Discussion) illustrates results and analysis conducted in the research. It covers also discussion of challenges faced by the TZGT equity role strategy and their causes.

Chapter 6 (Conclusions and recommendations) comprises of findings, implications of challenges and recommendations to Tanzanian government. It further proposes areas for future work.

2 LITERATURE REVIEW

2.1 Introduction

This chapter reviews the work that has been conducted with regard to equity participation or role of government in the minerals industry. There are various forms of equity role of the governments that have been adopted by various countries in order to benefit from their mineral endowments. These forms are presented in this chapter.

2.2 Equity

According to InvestorWords (2016), there are four definitions of the word “equity” based on the context of its applicability and these are:

- In the context of ownership interest in a corporation, consideration of equity is in a form of common stock or preferred stock;
- In the context of a balance sheet, shareholder’s equity is a function of total assets minus total liabilities;
- In the context of real assets, expression of equity is as a house value minus mortgage or loan payments on a house; and
- In the context of futures trading account, regarded as the value of securities in the account.

Equity is a fairness or justice in the way people are treated (Merriam-Webster, 2016). Van Zyl *et al* (2006) defined equity as a financial instrument representing part ownership of a corporate entity. In this study however, there has been an adoption of equity definitions by InvestorWords (2016) in the context of ownership of interest in a corporation and of Van Zyl *et al* (2006) respectively.

2.3 Equity participation or role

Equity participation/role is defined as the action of individual(s) or body corporate to hold shares in an enterprise, company or asset (Otto, nd.; Brown, 2013; Natural Resource

Governance Institute, 2015b). The purpose is to have a degree of ownership of such enterprise, company or asset in exchange for purchasing shares. In addition, equity financing is another way of obtaining ownership of a business. In as far as, minerals sector is concerned, individual(s) or body corporate(s) can hold shares in enterprises related to the minerals sector. Minerals related enterprises involve all enterprises connected to prospecting, mining, processing, smelting and/or refining and trading of minerals useful in the minerals industry.

2.4 Government equity role in the in the minerals sector

Equity role of the government in the minerals sector is an action of the government to own shares in mineral rights and/or minerals-related enterprises (Heller, 2011; Natural Resource Governance Institute, 2015b; McPherson, 2008). A Mineral right is a right that enables individual(s) or body corporate to extract minerals from an area and to be paid based on extraction of such minerals. There are various mineral rights in different countries depending on existing mining value chains in those countries. For instance, they can either be Prospecting Licences (PLs), Mining Licences (MLs) and/or Processing Licences (PLs).

A government can directly take ownership shares in mineral rights and/or ventures as sole commercial entity or in partnership with public or private companies (Natural Resource Governance Institute, 2015b). However, not all governments apply this approach for taking ownership shares. Some governments assign State-owned corporations (parastatals) to take this responsibility on their behalf. The reason for this is to infiltrate parastatals directly in minerals related enterprises to oversee government interests (Extractive Industries Transparency Initiative, 2014). According to Leon (2015), equity role of government in minerals seeks to enable the government to have greater control and management of mineral resources in the country. Government anticipates deriving more economic benefits that accrue from exploitation of minerals resources (Leon, 2015; Mills 2011).

Greater control and management of mineral resources in the country is the initial, non-financial benefit that the government can attain through its equity role in the minerals sector. Herein either governments pursue sole proprietorship (to become a sole commercial entity)

or joint ventures with private sector investors in partnership or companies in having substantial ownership of minerals related enterprises. For instance, in case where the government is owning shares in a mine, whether fully or partially, it will similarly own its mineral resources in same proportionality. The higher the government ownership of shares in medium and large scale mining projects, the greater the control and management of mineral resources. However, for a government to fully control and manage mineral resources, it will have to also strongly administer and manage its minerals sector as indicated in Section 1.1, Table 1.1. When parastatals oversee, government's interests in minerals-related enterprises, they must build national capacity as another non-financial benefit. This is useful for government's control and management of the minerals sector in the country as institutions would have capacities for establishment of new or strengthening existing institutional frameworks (Table 1.1).

Building of national capacity is through parastatals' investment, management, supervision and monitoring of operations in the minerals related enterprises. Parastatals' investment, management, supervision and operations monitoring in the minerals related enterprises is through two ways. Firstly, through sole proprietorship where they become sole commercial entities as they gain skills, experiences and competences for national capacity building. Lastly, it is through parastatals being in partnership with private sector investors in minerals projects. This would be possible through the participation of both parastatals and private sector investors in investment, management, supervision and operations monitoring in business ventures. More importantly to note is that as parastatals acquire capacities, they become capable of working independently without dependences on private sector investors (Heller, 2011; Natural Resource Governance Institute, 2015b; McPherson, 2008). Table 2.1 indicates parastatals, which had contributed to building their countries' national capacities in controlling and managing mineral resources successfully.

Table 2.1 National capacity building attributing state-owned enterprises (parastatals)

Name of Parastatal	Country
Petrobras	Brazil
Petronas	Malaysia
Petroleum company of Trinidad and Tobago Limited	Trinidad and Tobago
Debswana Diamond company (Pty) Ltd	Botswana
Statoil	Norway
Codelco	Chile

Source: Natural Resource Governance Institute (2015b); Heller (2011); McPherson (2008)

The other non-financial benefits attained by government through its equity role in prospecting, medium and large scale mining is local content promotion (Heller, 2011; Amoako-Tuffour *et al*, 2015). This is achieved through mining projects employing local citizens and project operators procure locally produced or supplied goods and services (Heller, 2011; Amoako-Tuffour *et al*, 2015; McPherson, 2008). This in turn promotes local content. Finally, the corporate social responsibility (CSR) where companies with mining projects near communities provide social and infrastructure services.

According to McPherson (2008), Ogunlade (2010), Heller (2011) and Ministry of Energy and Minerals (2010a), financial benefits mostly derived from the minerals sector include:

- Receivable corporate income tax;
- Receivable mining royalty;
- Receivable annual levies;
- Receivable other taxes including PAYE, SDL, WHT, VAT, Stamp Duty, Import Duty; Excise Duty and Service Levy;
- Receivable profits through paid equity role as sole commercial entity;
- Receivable paid interests (dividends) through paid equity role in a partnership as majority or minority shareholder;
- Receivable carried interests (dividends) through carried equity role in a partnership or company as minority shareholder; and

- Receivable free carried interests as dividends from large scale mines with SMLs having minerals development agreements (MDAs).

However, it is important to underscore that governments should ensure that they have solid and measurable mechanisms for collection of taxes. The reason being that this area can contribute significantly to government revenues. As such, government authorities, departments and their officials mandated to collect such taxes would need to be ethical and knowledgeable enough (Australian Government, 2010). This is apart from clear policies, main laws, by-laws, regulations, operation manuals, etc., expounding on mechanisms for collecting such taxes to be used by them. For example, looking into service levy in Tanzania as a component of other taxes, most of the local government authorities are unaware of their legal obligation to collect it (Ministry of Energy and Minerals, 2015a). They are unaware in the sense that they only collect service levy from mine owners instead of collecting it also from mine contractors and sub-contractors.

2.5 Forms of government equity role

There are four main types of government equity role namely: paid or full equity, carried equity, free equity and free carry equity. These forms of government equity are discussed further in this section.

2.5.1 Paid or full equity

Paid equity is the equity capital financing or buying of shares in enterprises undertaken by government, as a private investor would do (Heller, 2011; Natural Resource Governance Institute, 2015b; Cottarelli, 2012). In addition, the interest of the paid equity is termed as paid equity interest or sometimes paid interest. However, according to McPherson (2008), paid equity exist in two categories. These categories include either investing on its own via parastatal or investing with an involvement of the private sector from the start of operations whereas it acquires majority or minority interest in a private or public joint venture company (McPherson, 2008).

In any case in which a parastatal is involved it has to meet its proportionate investment cash calls. This is possible only through government funding of the parastatal and self-funding through its well-established financial capacity. However, in all cases, government has to become cautious in avoiding public funds from being abused by the parastatal. This happens mostly when a parastatal foots itself in investment as a sole commercial entity or a shareholder in a private joint venture (JV) company together with a private sector investor (Heller, 2011; Natural Resource Governance Institute, 2015b). According to Ogunlade (2010), paid or full equity is termed also as a working interest (WI) participation. Table 2.2 indicates some countries whose governments employ WI participation in the minerals sector. Table 2.2 indicates that it is most likely that countries endowed with minerals would opt for WI of at least 15%, if they chose to undergo paid equity role in mining. Paid equity as a form of government equity role has pros and cons and they are tabulated in Table 2.3.

Table 2.2 Countries employing working interest (WI) participation

Country	Description (% of WI)
Ghana	20
Kyrgyz Republic	15 - 66
Papua New Guinea	30
Sierra Leone	30

Source: McPherson (2008)

Table 2.3 Pros and cons of paid or full equity

Pros of paid or full equity
• Gives higher transparency and accountability to the government especially when the parastatal is a sole commercial entity for being administered and managed by the government itself.
• Sense of government ownership of minerals related projects is high for being administered, managed and financed by the government itself.
• Higher contribution to the national capacity building especially when government is in joint venture with the private sector as the parastatal will gain skills, experiences and competences (Section 2.4).
• Higher contribution to the local content promotion as compared to other forms of government equity role given that government is the owner of the parastatal and does its role of promoting the private sector.
• Higher contribution to parastatals profits maximisation and bolstering of parastatals growth as government will forge its own business strategic plan to follow, execute, audit, review and improve.
• Higher contribution to parastatals competitiveness due to availability of finance, investment and operating cash flows.
• Higher realisation of total profits by government when it serves as a sole commercial entity.
• Yields on time government profits realisation and dividends earnings than in other forms of government equity role. This is due to absence of carried equity capital share of the government that necessitates investor's recovery of initial investment through government-foregone dividends with interests.
Cons of paid full equity
• Risks government coffers on expense of its spending on social services, social protection and infrastructure development.
• Can be prone to price volatility of commodities hence affecting government paid equity interest.
• Can be prone to misinvoicing (transfer pricing) and/or financial manipulation if not well administered and managed. This can consequently lead to unsatisfactory or non-existent dividends for the government.
• Understaffing and ineffective supervision by parastatal can undermine development of minerals related projects, lessening revenues accruing to the government and aggravate corruption.

Source: Economic Commission for Africa (2010); Marah (2014); Heller (2011)

2.5.2 Carried equity

In this form of government equity role, the private sector investor meets all capital costs and expenses in an investment without any government financial contribution (Natural Resource Governance Institute, 2015b; Cottarelli, 2012; McPherson, 2008). However, according to Heller (2011) and McPherson (2008), the recovery of investor's money spent as government contribution in an investment would be through government-foregone dividends with interests.

The interest that is exerted by the government carried equity transaction is termed as carried equity interest or carried interest. Government should device solid mechanisms for managing its stake in carried equity mining projects. By doing so, it will prevent itself from a trap of earning unsatisfactory or nil dividends (Heller, 2011).This as indicated by Van Zyl *et al* (2006), Korchaki (2014), and Heller (2011) happens especially when:

- Projects undergo reinvestments.
- Government's shares in a company are common shares (not preferred shares).
- Government is mostly with a minority representation in a board of directors of the company responsible for:
    - Authorization of advance payments of preferred dividends to preferred shareholders before other actions of company's realised profits are undertaken which maybe keeping of total profits as retained earnings, reinvestment on projects or payments of common dividends to common shareholders; and
    - Making decision on whether to keep profits as retained earnings to reinvest in projects or distribute dividends for common shareholders including government, or not.
- There is misinvoicing (transfer pricing) and/or financial manipulation if not well administered and managed.

Mali is an example of mineral-rich countries that enforces carried equity role by imposing 15% carried interest in mining companies (Otto, nd.; Kaba, 2017). In addition, McPherson (2008)

indicated that petroleum rich countries notably: Algeria, Cameroon, Equatorial Guinea and Gabon are pursuing carried equity role (Table 2.4).

Table 2.4 Some petroleum rich countries employing carried interest (CI)

Country	Description (% of CI)
Algeria	51
Cameroon	50
Equatorial Guinea	15
Gabon	15
Libya	50
Sudan	5 - 10
Vietnam	20

Source: McPherson (2008)

It is important to define private joint venture company, partnership and public joint venture company for this research study. Private JV company is defined as a non-listed company (company that is not listed in the stock exchange) incorporated by two or more companies that contribute capital and other resources for a common project or projects (Macdonald, 2009). Partnership is an unincorporated joint venture of two or more individuals or companies that agree to pool capital and other resources for undertaking a specific task. Furthermore, according to BusinessDictionary (2017c), a partnership is governed by a partnership agreement. Public JV company is a company listed in stock exchange and incorporated by two or more companies that contribute capital and other resources for a common project or projects. The advantages and disadvantages of carried equity are tabulated in Table 2.5.

Table 2.5 Pros and cons of carried equity

Pros of carried equity
• Gives fairly higher transparency and accountability to the government especially when the parastatal is in public JV with private sector investor than in partnership. This is due public single or JV companies for having higher transparent operating nature than in in partnership.
• Prevents government coffers from being spent in mining investments like in paid equity form of equity role (for as it is being contributed by the private sector investor) and instead be spent into social services, protection and infrastructure. Prevention of
• Sense of government ownership of minerals related projects is high for playing part together with the private sector in administration and management responsibilities.
• Contributes fairly to the national capacity building especially when government is in private or public JV with the private sector investor than in partnership as the parastatal will gain skills, experiences and competences (Section 2.4).
• Contributes fairly to the local content promotion given that the government is the partial owner of the business and plays its role of promoting the private sector.
Cons of carried equity
• Delays government earnings of dividends due to private sector investor's recovery of incurred government contribution through government-foregone-dividends with interest.
• Can be prone to price volatility of commodities hence affecting government paid equity interest.
• Can be prone to misinvoicing (transfer pricing) and/or financial manipulation if not well administered and managed. This can consequently lead to unsatisfactory or non-existent dividends for the government.
• Understaffing and ineffective supervision of carried equity by parastatal can undermine minerals related projects development, lessening revenues accruing to the government and aggravate corruption.

Source: Correia *et al* (1993): Marx *et al* (1999)*;* Economic Commission for Africa (2010); Marah (2014); Heller (2011); Cottarelli (2012)

2.5.3 Free equity

This is a form of equity role in which the company holding shares, freely grants a portion of its shares to the government at no cost (Heller, 2011; Cottarelli, 2012). However, it is not exactly true that such shares offered to the government by the company are strictly free. This is because tax concessions, contribution of rights or infrastructure from the government tends to accompany them (Heller, 2011; Natural Resource Governance Institute, 2015b; Cottarelli, 2012). According to McPherson (2008), some countries that employ free equity role are notably: Liberia and Sierra Leone with 15% and 10% free equity role, respectively. However, Heller (2011) and Natural Resource Governance Institute (2015b) singled out this kind of equity as being deterrent to investment. McPherson (2008) and Kaba (2017) on the other hand disagree with this view. Governments need to take precautions when entering agreements with mining companies to avoid worse trade-off traps, which can have negative impacts on their prosperities. Table 2.6 presents pros and cons of free equity role.

Table 2.6 Pros and cons of free and free carry equities

Pros of free and free carry equities
• Prevent government coffers from being spent in mining investments like in paid or carried equity forms of equity role and instead be spent into social services, protection and infrastructure.
Cons of free and free carry equities
• Give less transparency and accountability to the government as compared to carried equity.
• Sense of government ownership of minerals related projects is low for non-direct government participation in the management and operation affairs of the mining company granting free interest (FCI).
• Less contribution to the national capacity, building for non-direct government participation in the management and operations affairs of the mining company granting free interest (FCI).
• Fairly less contribution to the local content promotion if there is no solid local content legislation.

Source: Heller (2011); Cottarelli (2012); McPherson (2008): Kaba (2017)

2.5.4 Free carry equity

This is a form of equity having both features of free and carried equities (Kaba, 2017). It is a percentage of mining company's shares offered to the government by the company, which carries also its costs and expenses for the government. In this type of equity, the company's contributing shareholders carry all costs and expenses for the government, which does not incur any of them. In addition, unlike in carried equity, when profits are made, the company does not recoup any of its costs and expenses incurred from the government portion. More importantly to note is that in free carry equity, company grants shares to the government in consideration for its contribution in kind to the mining company (Kaba, 2017; The Organisation for the Harmonisation of Business Law in Africa, 1997 and 2016). According to Kaba (2017), government contribution in kind may be granting of the mining licence and/or mining rights.

It should be noted that the interest due to the government on the free carry equity transaction is called the free carried interest (FCI) (Bourassa and Turner, 2013). In this context then, mining company pays FCI as dividends to the government during profits making periods. In addition, the nature of payment of dividends on FCI may be ordinary or preferred. However, this depends on the terms of agreement on the nature of dividend payments. Normally, two parties namely: government and mining company clearly, expound all rights bestowed upon shareholders in the free carry equity role.

More importantly to note is that FCI is non-dilutable and the government through options in the minerals development agreement (MDA) is mandated to acquire more shares in a mining company (Kaba, 2017). Acquisition of more company shares by the government is through paid equity.

Furthermore, solid frameworks or mechanisms on how the two parties would enjoy their shareholding rights is crucial. The countries that adopt this type of equity role are, *inter alia*, DRC, Guinea and Ghana with agreed free carried interests of 5%, 15% and 10%, respectively (Kaba, 2017; Ralbovsky, 2012). Table 2.6 shows pros and cons of free carry equity role.

2.6 Tanzanian minerals endowment, mines and mining methods

This section discusses the nature, quality and quantity of mineral resources and quantity of known Tanzanian mineral reserves. In addition, it covers scale of mines and mining methods adopted in medium and large scale mines in Tanzania.

2.6.1 Nature and quality of mineral resources

Tanzania has an endowment of minerals amongst others, gold, tanzanite, diamond, coal, uranium, iron, gemstones and copper hoisted in mineral deposits. These mineral deposits exist in stratigraphic formations such as Cenozoic volcanics, Ubendian belt, Greenstone belts and Archean Craton to mention a few (Figure 2.1).

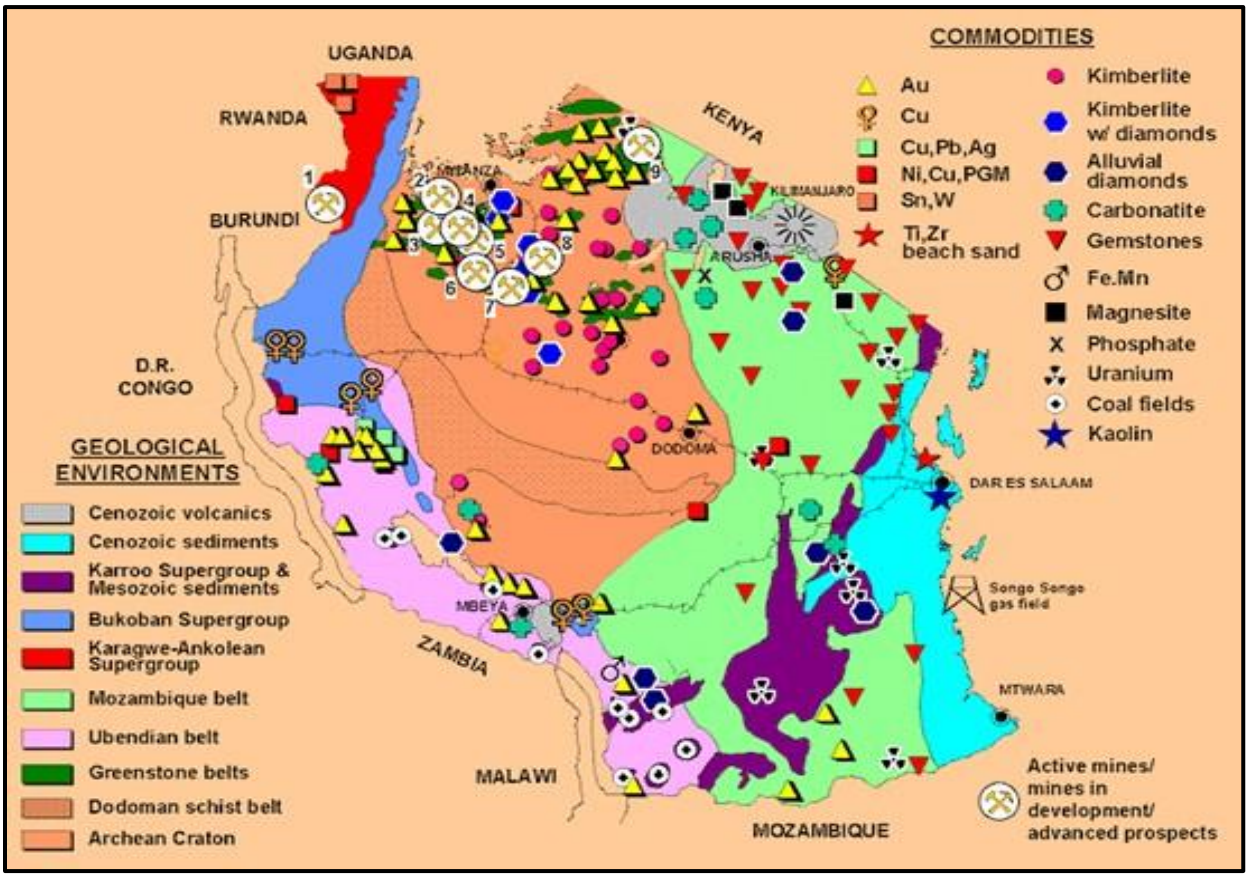

Figure 2.1 Stratigraphic formations of mineral deposits in Tanzania

Source: Msabaha (2006)

According to Ministry of Energy and Minerals (2010a), there are five groups of minerals existent in Tanzania. These include:

- Metallic minerals such as gold, nickel, tin, rare earth element, iron ore, copper, lead and PGMs;
- Gemstones such as diamonds, tanzanite, ruby, emerald and sapphire;
- Industrial minerals such as phosphate, gypsum, limestone, kaolin, graphite and bauxite;
- Building materials such as stones, sand, aggregates, gravel and fire clay; and
- Energy minerals including uranium and coal.

2.6.2 Quantity of known Tanzanian mineral reserves

In Tanzania, information pertinent to geology and geophysics useful for assisting investors in selecting areas for prospecting is available. This information is available at the Geological Survey of Tanzania (GST) located in Dodoma. It is vital to note that 90 percent of the country has been geologically surveyed (Ministry of Energy and Minerals, 2015b). Therefore, the mineral prospecting operations carried out from 1990s to 2015 have revealed quantities of proved reserves of various minerals as indicated in Table 2.7.

Table 2.7 Proven quantities of mineral reserves in Tanzania

Mineral	Proved reserves (‘000)
Gold	2.2 t
Iron ore	126 kt
Graphite	158.2 kt
Uranium	160 kt
Rare earth elements	101 kt
Coal	5000 kt
Copper	13.7 kt
Nickel	209 kt
Tanzanite	12.6 kt
Diamond	51 kcar

Sources: Ministry of Energy and Minerals (2015b); Mwihava and Masanja (2015)

In addition, Tanzania is important in the global mining industry as it supplies the world with various minerals such as:

- 1.6% of world's gold, making it to the 15th position in the world (Yager, 2013; Mine Web, 2015);
- Producing 166,500 carats of diamond in year 2013/2014, making it 13th in the globe (Jewell and Kimball, 2015). This production was 0.23% of the annual total average production of 72.35 million carats; and
- It is the only supplier of tanzanite in the world (Ihucha, 2014; Yager, 2013).

The tanzanite industry in Tanzania has not greatly flourished despite its long history of its existence. This is due to undermentioned reasons (Ihucha, 2014; Rimoch and Cherng, 2013; Dodgson, 2016):

- Continuous practice in the country of exporting rough tanzanite;
- Inadequate and inefficient jewellery cutting centres;
- High rate of tanzanite smuggling;
- Tax evasion; and
- Lack of government political will in the control of tanzanite sector.

2.6.3 Scale of mines

In Tanzania, from 1996 to 2015, there had been nine active mines (Mwihava and Masanja, 2015; Tanzania Minerals Audit Agency, 2016a). These included six large scale mines and three medium scale mines (Table 2.8).

Table 2.8 Large and medium- scale mines in Tanzania by December 2015

Company/Project	Scale of the mine	Mineral sought	District	Commissioning Year
Merelani Tanzanite Mine (MTM) also known as TanzaniteOne Tanzanite mine (TTM)	Medium	Tanzanite	Simanjiro	2001
Ngaka Coal Mine (NCM)	Medium	Coal	Mbinga	2012
New Luka Gold Mine (NLGM)	Medium	Gold	Chunya	2012
Bulyanhulu Gold Mine (BGM)	Large	Gold	Kahama	2001
Buzwagi Gold Mine (BZGM)	Large	Gold	Kahama	2009
Geita Gold Mine (GGM)	Large	Gold	Geita	2000
North Mara Gold Mine (NMGM)	Large	Gold	Tarime	2002
Stamigold Biharamulo Mine (SBM) formerly known as Tulawaka Gold Mine (TGM)	Large	Gold	Biharamulo	2005
Williamson Diamonds Mine (WDM)	Large	Diamond	Kishapu	1940

Source: Mwihava and Masanja (2015); Tanzania Minerals Audit Agency (2016a)

2.6.4 Mining methods employed in mines in Tanzania

There are two major mining methods employed in these mines, namely: open pit and underground mining methods. Table 2.9 indicates mining method employed in each mine.

Table 2.9 Mining methods employed in large and medium scale mines

Company/Project	Mining method
Bulyanhulu Gold Mine (BGM)	Underground mining method
Buzwagi Gold Mine (BZGM)	Open pit mining method
Geita Gold Mine (GGM)	Open pit & underground mining methods
North Mara Gold Mine (NMGM)	Open pit & underground mining methods
Stamigold Biharamulo Mine (SBM) formerly known as Tulawaka Gold Mine (TGM)	Open pit mining method
Williamson Diamonds Mine (WDM)	Open pit mining method
Merelani Tanzanite Mine (MTM) also known as TanzaniteOne Tanzanite mine (TTM)	Underground mining method
Ngaka Coal Mine (NCM)	Underground mining method
New Luka Gold Mine (NLGM)	Open pit & underground mining methods

Figure 2.2 shows the location of large and medium scale mines in Tanzania and major minerals sought. Most of the gold mines, that is, North Mara, Bulyanhulu, Geita, Biharamulo, Buzwagi and Golden Pride are located in the east and south of Lake Victoria. It is important to note that the gold deposits where most of the gold mining occurs are in the Greenstone belts formations as indicated in Figure 2.1. According to Tanzania Minerals Audit Agency (2016a), the total value of minerals exported by the nine active mines in 2015 was approximately US$1.7 billion as indicated in Figure 2.3.

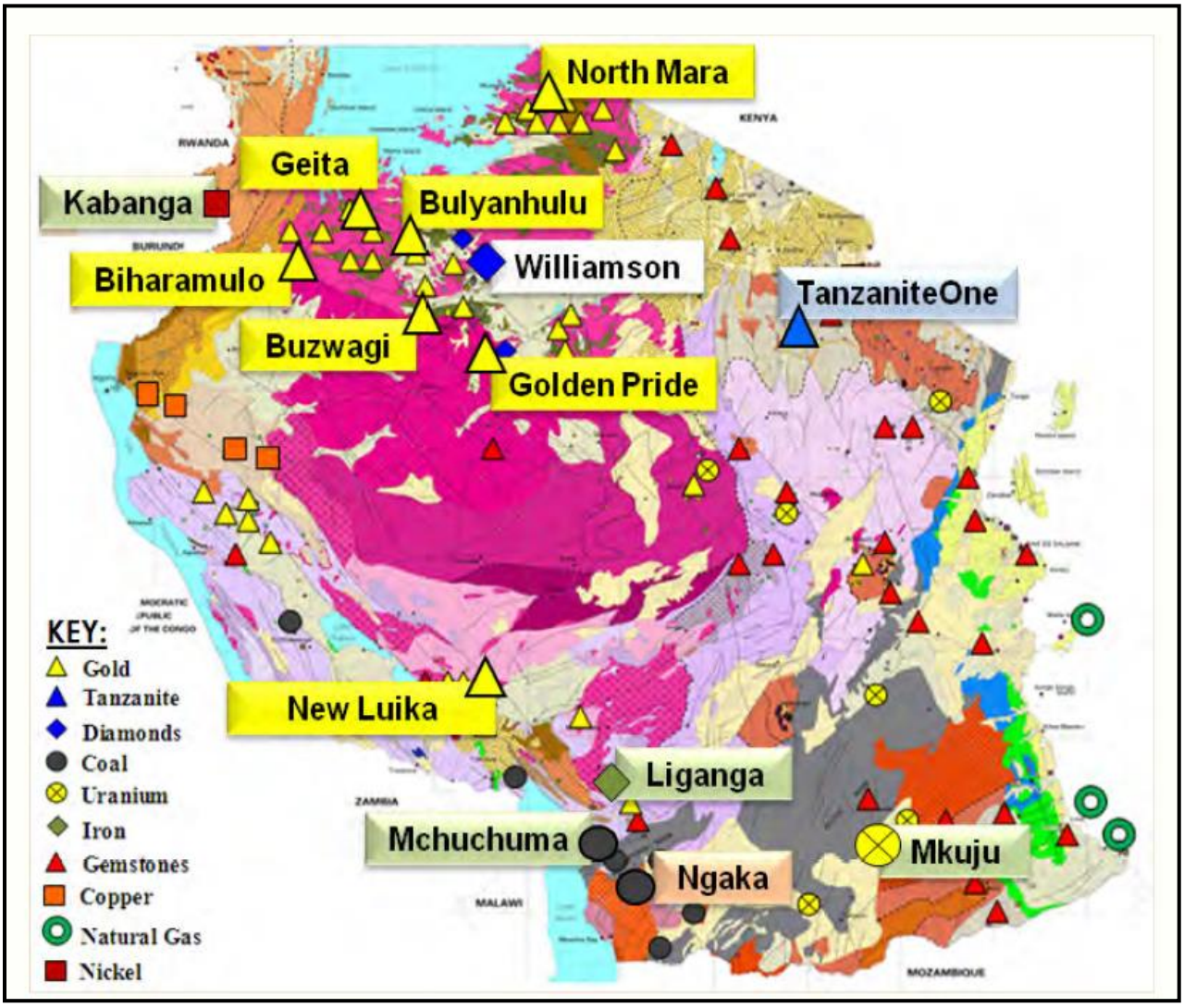

Figure 2.2 Location of medium and large scale mines in Tanzania

Source: Ministry of Energy and Minerals (2015b)

Mine	Gold (toz)	Silver (toz)	Copper (lb)	Diamonds (ct)	Rough Tanzanite (g)	Coal (ton)	Total Value (USD mil.)
BGM	273,412	149,843	6,023,185	-	-	-	332.16
BZGM	164,066	119,383	7,733,913	-	-	-	207.51
GGM	544,113	70,644	-	-	-	-	630.13
NLGM	81,132	119,366	-	-	-	-	96.07
NMGM	281,290	35,676	-	-	-	-	334.80
SBM	21,236	2,240	-	-	-	-	24.67
WDL	-	-	-	191,407	-	-	53.34
TTM	-	-	-	-	2,395,548	-	4.48
NCM	-	-	-	-	-	260,628	11.87
Total	1,365,249	497,152	13,757,098	191,407	2,395,548	260,628	1,695.03

Figure 2.3 Mineral sales/exports by major mines in 2015

Source: Tanzania Minerals Audit Agency (2016a)

2.7 Contribution of Tanzanian minerals sector in the GDP

The minerals sector in Tanzania is important in the country's economy as it contributes to the nation's GDP. Figure 2.4 shows historical contribution of the Tanzanian minerals sector to the GDP from 1998 to 2010.

From Figure 2.4, the Tanzanian minerals sector's contribution to the nation's GDP was 1.4% in 1998, which raised to 3% maximum in 2006. However, in three years notably: 2006, 2007 and 2008 the percentage of contribution of the mineral sector at the country steadily remained at 3%. Due to the world's economic crises as indicated by Muganyizi (2012) the sector's contribution to the nation's GDP dropped from 3% in 2008 to 2.5% in 2009 all the way to 2.4% in 2010. Apart from the performance of the Tanzanian minerals sector's contribution to the nation's GDP, the country aims at raising the GDP growth contribution to 10% in 2025 (Ministry of Energy and Minerals, 2015a).

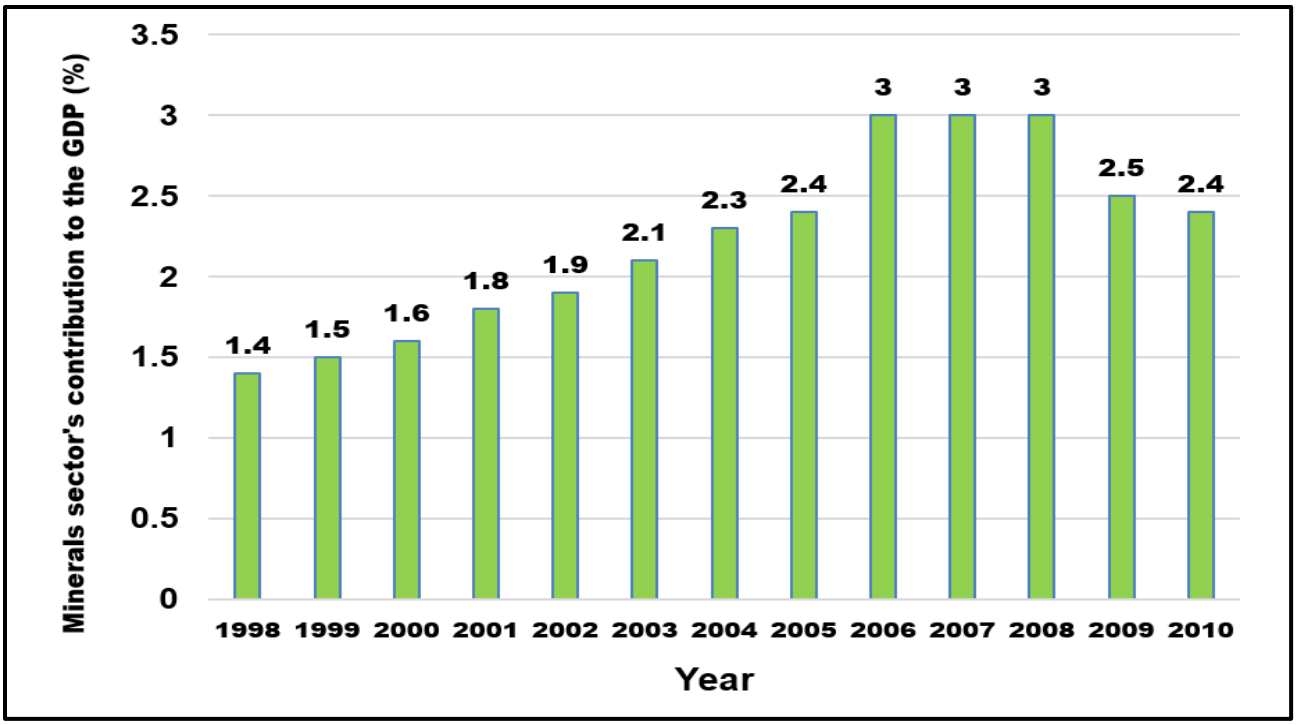

Figure 2.4 Historical contribution of Tanzanian minerals sector to the GDP

Source: Muganyizi (2012)

2.8 Historical equity role of TZGT in minerals sector before 1996

Germans and British ruled Tanganyika from 1884 to 1915 and from 1916 to 1960, respectively. Tanganyika got her independence from British on 9 December 1961. Zanzibar, a neighbouring country to Tanganyika, also got hers from British Empire on 12 January 1964. These countries merged on 26 April 1964 to form one country called Tanzania. Records indicate that in 1950, the British administration formulated Colonial Development Corporation (CDC) to be responsible for holding and financing government projects (National Development Corporation, 2012a). During this period, the government established five (5) mining-related companies held by CDC as indicated in Figure 2.5. These companies were: Williamson Diamonds Ltd, Diamond Cutting Co. Ltd, Nyanza Salt Mines Ltd, Tanganyika Meerschaum Corporation and Tanzania Gemstone Industries Ltd. There is no company in which CDC had ownership share of less than 50%.



Figure 2.5 Percentage of ownership in mining related companies

Source: Ngonyani (2014); Jourdan (1990)

As Tanganyika became independent in 1961, it formed the Tanganyika Development Corporation (TDC) in order to replace CDC in 1962. Then TDC undertook the same roles and functions of CDC-holding and financing the government projects including five mining companies (National Development Corporation, 2012a). However, in 1965, TDC changed its name to become National Development Corporation (NDC) in order to catalyse economic development in all sectors of the economy.

Furthermore, in 1967, TZGT changed its economic system through "*the Arusha declaration"* (Muganda, 2004: Solomon, 2012; Ngowi, 2009). In *"the Arusha declaration",* the new policy for Tanzania became socialism and self-reliance in which command economic system was adopted (Muganda, 2004; Ngowi, 2009; Weir, nd.). The aim was to enable the government to control all means of production in the country through parastatals. These means of production included plantations, industries, mines, commerce and banks (Muganda, 2004, Ngowi, 2009; Weir, nd.).

Ngonyani (2014) highlighted that in 1972, Tanzania government through Public Corporations Act of 1969 established State Mining Corporation (STAMICO), which started operations in 1973. With the introduction of STAMICO, NDC transferred to STAMICO all the five mining companies it used to hold. Thereafter, STAMICO took over holding and started financing these companies and others that had emerged while at the same time, overseeing of government interests as was done by CDC and NDC.

In 1992, TZGT endorsed Public Corporations Act of 1992 to replace the Public Corporations Act of 1969 (Ministry of Finance and Planning, 1992). This action of TZGT was due to underperformance experienced by parastatals during socialism and self-reliance policy between 1967 and late1980s. Underperformance of parastatals was attributed to lack of local expertise, lack of managerial skills, embezzlement, bureaucracy, capacity underutilisation; loss making, reliance on government subsidies, non-payment of taxes, overemployment and monopolistic behaviour of operation and huge debts (Muganda, 2004; Ngowi, 2009).

In 1993, TZGT established the Presidential Parastatal Sectoral Reform Commission (PSRC) to be in charge of privatisation of state-owned organisations (Twaakyondo *et al*, 2002; Muganda, 2004). Under Public Corporations Act of 1992, transferring of all companies under government holding corporations to the Treasury Registrar (TR) for privatisation through PSRC took place. This action affected all companies under STAMICO, which were transferred to the TR and were kept under receivership or liquidated (Muganda, 2004; Ngonyani, 2014). Consequently, STAMICO was closed in April 1996.

2.9 Specification and de-specification of STAMICO

After the companies were placed in receivership or liquidated, STAMICO was listed in August 1997 as a specified public corporation under PSRC. This was after its closure in April 1996 (Ministry of Finance and Planning, 1992; Ngonyani 2014). As STAMICO became a specified public corporation, all its rights, privileges, powers, duties or functions were vested in the board of directors. The board of directors then waited for STAMICO's shares allotting or selling by government (Ministry of Finance and Planning, 1992). However, decision by the government to allot or sell STAMICO delayed and therefore made it survive from 1996 to

2008. During this period, it concentrated on provision of contract drilling services, consultancy work, property rental income, acquisition of mineral rights and joint venturing (Ngonyani, 2014). Furthermore, during the same time, there were recommendations in 2008 from the Justice Mark Bomani Commission's Report favouring restoration of STAMICO than its closure. Government then decided to restore STAMICO (Bomani, 2008). Effecting of actual de-specification of the corporation was in April 2009 when publishing of a de-specification order in the government gazette took place (State Mining Corporation, nd.).

2.10 Other participations of Tanzanian government from 1884 to 2015 in the mining industry

2.10.1 Demarcation and allocation of mining plots to small scale miners

The German and British administrations partially demarcated and allocated mining plots to small scale miners (SSMs) between 1884 and 1960. However, in between 1961 and 2015, TZGT demarcated and allocated more mining plots to SSMs as compared to the period 1884-1960 (The Law Reform Commission of Tanzania, 2001; Mwihava and Masanja, 2015; United Nations Environment Programme, 2012). The benefits realised from demarcation and allocation of plots were job creation, means for economic livelihood as well as government revenues realisation. However, a key lesson was that most of demarcations and allocation lacked predetermined detailed geological surveys. This was a major drawback to the effective implementation of mining activities.

2.10.2 Extension services to small scale miners

The government between 1961 and 2015 offered training to SSMs, which encompassed mining laws, explosives handling, mining and mineral processing methods, safety, occupational health and environmental management. Both the Minerals Department and STAMICO had been cooperating in training of SSMs (Mwihava and Masanja, 2015; United Nations Environment Programme, 2012). The realised benefits included improved safety in mineral production and increase in income for miners. The shortfalls were lack of adequate

on-job training and inadequate follow-ups by government to SSMs to assess implementation of what they had been trained.

2.10.3 Grants giving to small scale miners

Government had provided grants of worth US$3.77 million to 121 SSMs from 2013 to 2015 (Mtweve, 2013; Kisima, 2016; Mwihava and Masanja, 2015; Corporate Digest, 2016). The SSMs used the grants for capital expenditures in mining operations, which lead to increased mineral production and government revenues. However, there was no accountability in expenditures and there was ineffective mechanism by which government made follow-ups to SSMs sites to prove value for money against expenditures.

2.10.4 Regulating minerals sector

Between 1884 and 2015, TZGT regulated minerals sector through Mining Ordinances of 1920 and 1929; Mineral Policies of 1983, 1997 and 2009; Mining Acts of 1979, 1998 and 2010 and Mining Regulations of 1999 and 2010. In regulating the minerals sector, various issues were addressed:

- Government revenues collection;
- Safety, occupational health and environmental inspections;
- Mining disputes resolution;
- Explosives management; and
- Incidents and accidents inquiries.

Benefits were compliance of SSMs, medium and large scale miners and other stakeholders to the country's mineral industry legislations. The high level of compliance led to increased mineral production and consequently, high government revenues. The challenges included:

- Lack of research and development (R&D) by government on the applicability of the Mineral Policies, Mining Legislations and Regulations;

- A delay by government to pass the proposed Minerals Value Addition Act of 2015 for regulation of mineral value addition activities and minerals beneficiation in the country; and
- A delay by government in enactment of a new Explosives Act and Regulations to cope with advancement in explosives and blasting industries.

2.10.5 Provision of services

During the period between1884 to 2015, the government provided minerals related services through its agencies. The first agency was the Geological Survey of Tanzania (GST). The establishment of GST was formerly as Department of Geological Survey in 1923, before its reestablishment as GST in 1997. In addition, GST had provided various geological data of different categories and purposes to minerals sector stakeholders (Geological Survey of Tanzania, 2016; The Law Reform Commission of Tanzania, 2001). GST had further provided mineral sample test services to minerals sector stakeholders. The second agency was STAMICO, which provided services to SSMs as well as undertaking drilling and exploration consultancy services (State Mining Corporation, 2016b). The benefits through GST services were:

- User-friendliness of geological data to stakeholders and an increase in discovery of minerals;
- An increase of revenues;
- Government institutional capacity development; and
- Enhancement of public and private sectors development to do with minerals sector.

Further benefits through STAMICO services were:

- Usefulness of drilling and exploration consultancy services to mineral stakeholders on compilations of pre-feasibility and feasibility studies of their mining projects;
- Government institutional capacity development;
- Compliance of SSMs with safety, occupational health and environmental protection requirements; and

- Increase of revenues.

GST and STAMICO with their services encountered the following challenges:

- Inadequate research & development (R&D); and
- Absence of annual reports in public domain and reporting without the use of Global Reporting Initiative (GRI) Guidelines.

2.11 Changes in Tanzanian minerals sector from 1996 to 2008

In 1996, government realised that the Mining Act of 1979 had failed to attract local and foreign mining investment. This failure of the Mining Act of 1979 coupled with economic reforms undertaken by the TZGT between late 1980s and early 1990s made the government change the legislation (Tanzania Minerals Audit Agency, 2016b; Muganda, 2004; Ngowi, 2009; Weir, nd.). The aim was to attract investors to bring into the country capital, technology and expertise (Tanzania Minerals Audit Agency, 2016b). The aim made the TZGT endorse the Mineral Policy of 1997 and Tanzania Mining Act of 1998 (State Mining Corporation, 2016b; Ministry of Energy and Minerals, 2009). Other notable changes were the formulation of fiscal incentives aimed at attracting both local and foreign investors, and the opening of six (6) large scale mines as indicated in Table 2.10.

Table 2.10 Mines established in Tanzania between 1998 and 2003

Mine/Project	Year commissioned	Year closed
Golden Pride Project	1998	2012 after reaching its end life.
Geita Gold Mine (GGM)	2000	Still in operations
Bulyanhulu Gold Mine (BGM)	2001	Still in operations
North Mara Gold Mine (NMGM)	2002	Still in operations
Tulawaka Gold Mine (TGM) currently known as Stamigold Biharamuro Mine (SBM)	2005	Still in operations
Buhemba Gold Mine	2003	2007 due to undertaking of uneconomical large scale mining

Source: Tanzania Minerals Audit Agency (2016b); State Mining Corporation (2015b)

With this development, gold production increased from less than one tonne per annum in 1998 to over 45 tonnes per annum in 2010. Consequently, the minerals sector became the second largest in terms of foreign currency of earning (East African Community, 2011). Other outstanding developments in the course of Minerals Policy of 1997 and Mining Act of 1998 from 1997 to 2008 were:

- Increased sector contribution to GDP from 1.4% in 1998 to 3.0% in 2008 (Muganyizi, 2012);
- Direct foreign investment (FDI) to the excess of US$2.5 billion from US$1.3 billion (Ministry of Energy and Minerals, 2009);
- Increased Foreign Direct Investment (FDI) in the mineral sector from US$1.3 billion in 1997 to US$2.5 billion in 2007 through exploration and mining projects (Ministry of Energy and Minerals, 2009); and
- Increased mineral exports from US$26 million in 1997 to US$420 million in 2002 as indicated in Figure 2.7 (Msabaha, 2006).

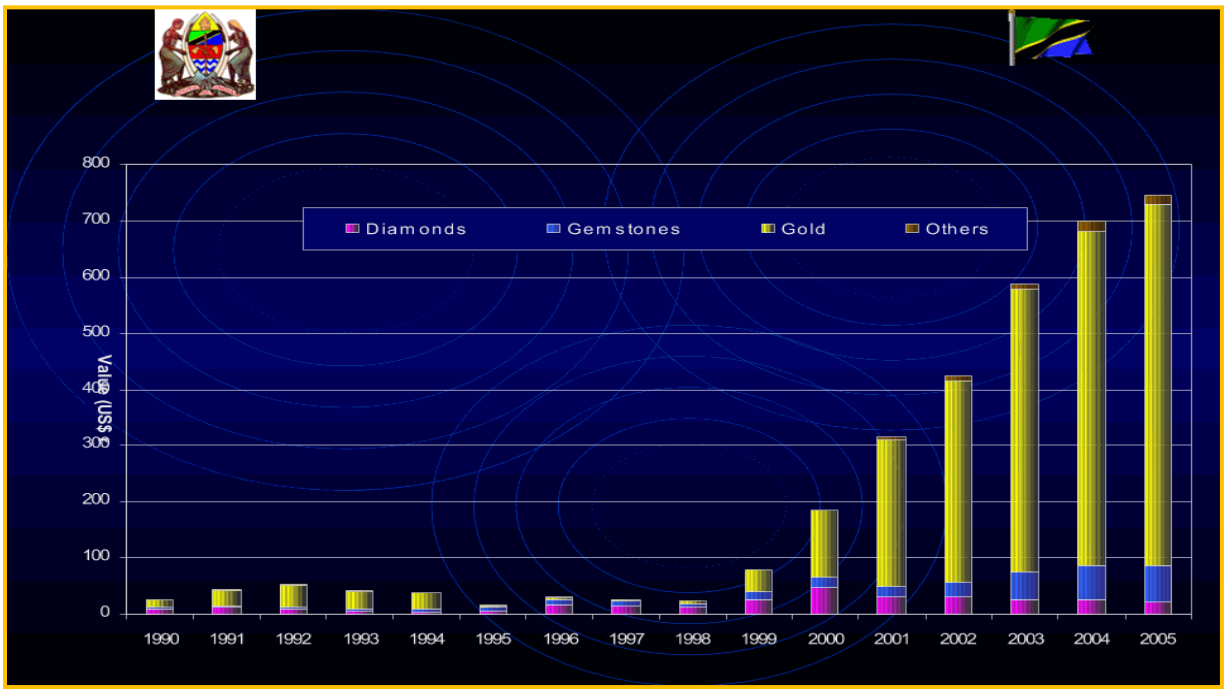

Figure 2.6 Tanzania mineral exports from 1990 to 2005.

Source: Msabaha (2006)

Despite these achievements, Msabaha (2006) and Ministry of Energy and Minerals (2009) highlighted the following as major challenges:

- Low integration of the minerals sector and other sectors of the economy;
- Inadequate capacity to administer the sector;
- Inadequate infrastructure such as roads, reliable power supply and communications to support the sector;
- Low level of minerals value addition; and
- Growing negative public perception on minerals sector. This is in respect to low contribution in both social and economic aspects.

Some of the impacts of these shortcomings included:

- Less contribution to GDP of other sectors of economy e.g., agriculture and manufacturing for their low integration by the minerals;
- Undermining of the local content on the procurement of locally produced supplied goods and services; and
- Increased transport costs from mines to the selling points and from suppliers of goods and consumables to the mines.

2.12 Changes in Tanzanian minerals sector from 2009 to 2015

In order to address challenges that ensued during Mineral Policy of 1997 regime, changes in the minerals sector had to occur (Msabaha, 2006). Accordingly, the TZGT decided to review the minerals sector through formulation of several committees in 2004. These committees included the Presidential Committee to advice the government on administering the minerals sector (Bomani, 2008; East African Community, 2011). As such, this initiative resulted in the formulation of the Tanzania Mineral Policy of 2009 and Mining Act of 2010.

2.13 Chapter summary

This chapter has expounded on equity, equity role, government equity role in the minerals sector and financial and non-financial benefits of equity role. Other things covered included studying forms of government equity role namely: paid, carried, free, and free carry. Forms of equity role were then analysed in terms of pros and cons to fully understand them during their application in the research. Other issues of Tanzanian minerals endowment, mines, mining methods as well as contribution of minerals sector to the GDP were analysed. The minerals sector contribution is set to reach 10% by 2025 on the projection that the country shall turn into middle economy.

Covering of historical equity role before 1996 and participation of TZGT in other areas of the minerals sector from 1884 to 2015 was done. Other areas of minerals sector that TZGT participated in aforementioned period included demarcation and allocation of mining plots, extension services to SSMs. Lastly, outlining of specification and de-specification of STAMICO and changes in Tanzanian minerals sector from 1996 to 2008 and 2009 to 2015 took place. The next chapter discusses the research methodology used to undertake the research study.

3 RESEARCH METHODOLOGY

This chapter describes the methodology used in performing research on the guidance of research objectives derived from research question. Methodology of the study included the following:

- Going through the background of the study and literature review;
  - To understand how resource nationalism leads to government equity role and its root causes;
  - To enhance and build knowledge on the subject of the government equity role; and
  - To understand how the Tanzanian government has been participating in the minerals sector from 1996 to 2015.
- Collection of data relative to the area of study through desktop study means. For instance, collection of primary data of PLs partially owned by STAMICO from 1996 to 2015 indicated in Appendix 8.1.1 was through desktop study;
- Analysis of all PLs, MLs and SMLs partially and wholly owned by STAMICO, NDC and TR, (Appendices 8.1, 8.2 and 8.3), together with minimum exploration expenditures in PLs and payable annual levies for all mineral rights to;
  - Determine all mineral rights, minimum allowable exploration expenditures in PLs and receivable annual levies for all mineral rights under Tanzanian government equity role from 1996 to 2015;
- Analysis of all forms of equity role of Tanzanian government in prospecting, medium and large scale mining and identification of prospecting projects and mines exercising such forms;
- Analysis of financial and non-financial benefits of Tanzanian government equity role in prospecting, medium and large scale mining; and
- Analysis of shortfalls as challenges faced by equity role of Tanzanian government in prospecting, medium and large scale mining.

More importantly to note, is that the analysis of minimum allowable exploration expenditures in PLs necessitated computations of the same indicators. This involved the setting out of a four years period from 2011 to 2015 (i.e., 2011/2012-2014/2015) as the major rationale. The set conditionality was applied in the calculations of minimum allowable exploration expenditures in PLs and government receivable annual levies for mineral rights. The main reason was to have a uniform approach of using exploration expenditure and payable annual levy rates stipulated in the Mining Act of 2010 and Mining Regulations of 2010 (Appendix 8.5). These legislations came in force on 1 November 2010 through 2015. In Tanzania, Prospecting Licences (PLs) have three phases namely: Initial Prospecting Period (IPP), First Renewal Period (FRP) and Second Renewal Period (SRP) (Ministry of Energy and Minerals, 1998, 1999, 2010a and 2010b). It is worth noting that the duration of PLs life phases during the Mining Act of 1998 and Mining Regulations of 1999 were 3:2:2. This ratio of 3:2:2 represents initial prospecting period of three years, first renewal period of two years, second renewal period of two years, respectively.

In order to ensure valid comparisons of PLs issued under the regulations before 2010 and those after, it was vital to synchronise the life phases. The synchronisation of PLs life phases of the scenario 3:2:2 for IPP: FRP: SRP of during the Mining Act of 1998 and Mining Regulations 1999 to match with the ones of 4:3:2 manner applicable in the Mining Act of 2010 and Mining Regulations of 2010 (Table 3.1 and Appendix 8.7) was done.

As depicted in Table 3.1 and Appendix 8.7, all PLs under STAMICO and NDC issued from 2007 to 2014 qualified for the determination of their exact valid life phases. This was to the reflection of the aforementioned 2011-2015 rationale. In summary, Table 3.1 and Appendix 8.7 entailed the following:

- With exception of PLs issued in 2010 whose IPPs of 3 years in 3:2:2 scenario were presumed to be equal to IPPs of 4 years in 4:3:2; and
- The rest of PLs issued in 2011, 2012, 2013 and 2014 followed the 4:3:2 scenario.

Table 3.1 Life phases reflection of PLs under STAMICO from 2011 to 2015

PLs of the same group	A demo PL in the group being reflected from 3:2:2 to 4:3:2 scenario	Conformity to Mining Regulations of 1999				Conformity to Mining Regulations of 2010
		From	To	Years	Life phase under Mining Regulations of 1999 (3:2:2)	Life phase reflection in Mining Regulation of 2010 (4:3:2)
PL 6427/2010, PL 6428/2010, PL 6429/2010, PL 6430/2010, PL 6431/2010, PL 6432/2010, PL6544/2010, PL 6545/2010, PL 6546/2010, PL 6547/2010, PL 6548/2010, PL 6549/2010, PL9968/2010, PL 6477/2010, PL 6537/2010 and PL 6755/2010	PL 6545/2010	12.07.2010	11.07.2011	1	An IPP of 3 years was valid and crossed over a year 2011	The IPP of 3 years under Mining Regulations of 1999 was assumed to be equal to the IPP of 4 years under Mining Regulations of 2010
		12.07.2011	11.07.2012	2		
		12.07.2012	11.07.2013	3		
		12.07.2013	11.07.2014	4	Mining Regulations of 1999	A FRP of 3 years is valid under Mining Regulations of 2010
		12.07.2014	11.07.2015	5	are inapplicable	
		12.07.2015	11.07.2016	6		
		12.07.2016	11.07.2017	7	Mining Regulations of 1999 are inapplicable	A SRP of 2 years is valid under Mining Regulations of 2010
		12.07.2017	11.07.2018	8		
PL 7132/2011	PL 7132/2011	04.07.2011	03.07.2012	1	Mining Regulations of 1999 were inapplicable	An IPP of 4 years was valid under Mining Regulations of 2010
		04.07.2012	03.07.2013	2		
		04.07.2013	03.07.2014	3		
		04.07.2014	03.07.2015	4		
		04.07.2015	03.07.2016	5	Mining Regulations of 1999 were inapplicable	A FRP of 3 years is valid under Mining Regulations of 2010
		04.07.2016	03.07.2017	6		
		04.07.2017	03.07.2018	7		

PL 8356/2012	PL 8356/2012	25.10.2012	24.10.2013	1	Mining Regulations of 1999 are inapplicable	An IPP of 4 years is valid under Regulations of 2010
		25.10.2013	24.10.2014	2		
		25.10.2014	24.10.2015	3		
		25.10.2015	24.10.2016	4		
PL 8794/2013 and PL 9243/2013	PL 8794/2013	28.06.2013	27.01.2014	1	Mining Regulations of 1999 were inapplicable	An IPP of 4 years is valid under Regulations of 2010
		28.01.2014	27.01.2015	2		
		28.01.2015	27.01.2016	3		
		28.01.2016	27.01.2017	4		
PL 9548/2014, PL 9549/2014, PL 9550/2014, PL 9578/2014, PL 9594/2014, PL 9595/2014, PL 9856/2014, PL 9857/2014, PL 9858/2014, PL 9859/2014, PL 9860/2014 and PL 9963/2014	PL 9548/2014	15.01.2014	114.01.2015	1	Mining Regulations of 1999 are inapplicable	An IPP of 4 years is valid under Regulations of 2010
		15.01.2015	114.01.2016	2		
		15.01.2016	114.01.2017	3		
		15.01.2017	114.01.2018	4		

Source: Ministry of Energy and Minerals (nd., 1998, 1999, 2010a and 2010b)

Parameters used in computation of minimum exploration expenditures in each PL's life phase included:

- Size area of the PL in terms of km^2 covered in Appendices 8.1.1, 8.1.2, 8.1.3 and 8.1.4;
- Minimum allowable exploration expenditure rates of US$500.00 for IPP, US$2,000.00 for FRP and US$6,000.00 for SRP (Ministry of Energy and Minerals, 2010b); and
- Number of PL's years relevant to IPP, FRP and SRP.

The exact amount of minimum exploration expenditures deemed committed in a PL was calculated using Equation 3.1 as the last step:

$$Exex = (S)(K)(R) \quad (3.1)$$

Where:

$Exex$ is the minimum allowable exploration expenditure of an organization in PL's life phase (US$),

S is the PL's area size (km^2);

K is the Number of years; and

R is the minimum allowable exploration expenditures in PL's life phase (US$/km^2/year).

In this study, receivable annual levies by the Tanzanian government for mineral rights were the payable annual levies made by the mineral right holders on the mineral rights they own. Payable annual levies for mineral rights were calculated using Equation 3.2.

$$PAL_{MR} = (S)(N)(K) \quad (3.2)$$

Where:

PAL_{MR} is payable annual levies for mineral right (US$);

S is mineral right's area size (km^2);

N is number of years; and

K is annual levy rate of the mineral right (US$/km^2/year).

Annual levy rates in the computation of payable annual levies are indicated in Appendix 8.5. These rates were in two mechanisms:

- Rates with validity from 1 November 2010 to 15 July 2012; and
- Rates with validity from 16 July 2012 to 31 December 2015.

Other considerations were applicable in the computation of the annual levies for the mineral rights. These included:

- Unlike MLs and SMLs whose annual levy rates are flat, in PLs annual levy rates are dependent on the PLs' life phases notably: IPP, FRP and SRP (Appendix 8.5). In these PLs' life phases, their periods and rates which differ were used in the computation of PLs annual levies; and
- Unlike MLs and SMLs whose area sizes remain fixed when determining their annual levies, in PLs their area sizes reduced half way when they were in the first renewal period (FRP) and second renewal period (SRP) (Ministry of Energy and Minerals, 2010).

4 TANZANIAN GOVERNMENT EQUITY ROLE IN THE MINERALS SECTOR

4.1 Introduction

This chapter discusses the equity role of Tanzanian government in prospecting, medium and large scale mining in relation to objectives of the study. Tanzanian government undertook equity role in some prospecting, medium and large scale projects in the country through STAMICO, NDC and TR. This led STAMICO, NDC and TR to adopt three forms of business ownerships in order to implement the government's strategy. These included sole commercial entities, partnerships and private JV companies respectively.

4.2 Tanzanian government's equity role in prospecting

In here, carried and paid equity roles of TZGT through STAMICO and NDC in prospecting were analysed. The analysis focused on the prospecting licences partially and wholly owned by STAMICO and NDC from 1996 to 2015 (Appendices 8.1.1, 8.1.2, 8.1.3 and 8.1.4).

4.2.1 Carried equity role of STAMICO in prospecting

STAMICO's carried equity role in 13 gold Prospecting Licences (Appendix 8.1.1) was through the private joint venture company namely Buckreef Gold Company Limited (BKCGL) with TANZAM 2000. STAMICO and TANZAM 2000 are main shareholders of BKGCL with ownership shares of 45% and 55%, respectively (State Mining Corporation, 2017). In addition, TANZAM 2000 was the main operator in all 13 PLs, thereby meeting all cash calls including exploration expenditures and payable annual levies for the 13 PLs. This section outlines the computation of minimum allowable exploration expenditures and payable annual levies for 13 PLs deemed to have been incurred by TANZAM 2000.

Table 4.1 presents the computation of minimum allowable exploration expenditures in each of 13 PLs from 2011 to 2015 using Equation 3.1. From Table 4.1, at least US$222,038

minimum allowable exploration expenditures was deemed to have been spent in 13 PLs by BKGCL from 2011 to 2015.

Table 4.1 Exploration expenditures in 13 PLs partially owned by STAMICO

Initial Prospecting Period (IPP) in which minimum allowable exploration expenditure rate per km² per year is US$500			**First Renewal Period (FRP) in which minimum allowable exploration expenditure rate per km² per year is US$2000**			**Total Minimum allowable expenditures in IPP and FRP (US$)**
Licence No., Initial size (km²) of PL and mineral sought	**Period**	**Expenditures in IPP (US$)**	**Reduced size (km²) of PL**	**Period**	**Expenditures in FRP (US$)**	
PL 6427/2010 & size 2.1 km²	2	2100	1.050	2	4200	6300
PL 6428/2010 & size 2.99 km²	2	2990	1.495	2	5980	8970
PL 6429/2010 & size 19.99 km²	2	19990	9.995	2	39980	59970
PL 6430/2010 & size 8.9 km²	2	8900	4.450	2	17800	26700
PL 6431/2010 & size 2.67 km²	2	2670	1.335	2	5340	8010
PL 6432/2010 & size 1.97 km²	2	1970	0.985	2	3940	5910
PL 6544/2010 & size 2.58 km²	2	2580	1.290	2	5160	7740
PL 6545/2010 & size 5.28 km²	2	528	2.640	2	10560	11088
PL 6546/2010 & size 17.41 km²	2	17410	8.705	2	34820	52230
PL 6547/2010 & size 5.29 km²	2	5290	2.645	2	10580	15870
PL 6548/2010 & size 1.89 km²	2	1890	0.945	2	3780	5670
PL 6549/2010 & size 2.66 km²	2	2660	1.33	2	5320	7980
PL 9968/2014 & size 5.6 km²	1	5600	-	-	-	5600
Total (US$)		**74578**			**147460**	**222038**

The payable annual levy for each of the 13 PLs from 2011 to 2015 was computed using Equation 3.2 and presented in Appendix 8.8. From Appendix 8.8, BKGCL made payable annual levies of approximately US$21,941.

4.2.2 Paid equity role of STAMICO in prospecting

This section outlines computation of minimum allowable exploration expenditures and payable annual levies for 19 PLs deemed to have been incurred by STAMICO in line with paid equity role.

4.2.2.1 Minimum allowable exploration expenditures by STAMICO

Appendix 8.9 depicts computation of minimum allowable exploration expenditures in each of 19 PLs from 2011 to 2015 using Equation 3.1. From Appendix 8.9, STAMICO needed a budget of at least US$231,880 for exploration activities from 2011 to 2015.

4.2.2.2 Payable annual levies by STAMICO

Appendix 8.10 depicts computation of payable annual levy for each of 19 PLs from 2011 to 2015 using Equation 3.2. STAMICO was expected to pay levies to the government that were estimated to a value of US$33,504 for holding 19 PLs.

4.2.3 Carried equity role of NDC in prospecting

NDC's carried equity role in 43 PLs as indicated in Appendix 8.1.3 was through two private JV companies namely: Tancoal Energy Limited (TEL) and Tanzania China International Mineral Resources Limited (TCIMRL). NDC is a shareholder with Intra Energy (Tanzania) Limited (IETL) and a shareholder with Sichuan Hongda Group of China (SHG) in TCIMRL. Percentages of ownership of NDC and IET in TEL are 30/70 and of NDC and SHG in TCIMRL are 20/80, respectively. TEL owns 10 coal PLs whereas TCIMRL owns 10 coal PLs, 16 iron coal PLs and seven dolomite PLs. However, this section used 37 PLs in both computations of minimum allowable exploration expenditures and payable annual levies. The reason being that the 37 PLs selected fall within the confines of the 2011-2015 rationale underscored in Chapter 3.

4.2.3.1 Minimum allowable exploration expenditures by TEL and TCIMRL

Appendix 8.12 presents computation of minimum allowable exploration expenditures in each of 37 PLs from 2011 to 2015 using Equation 3.1. From Appendix 8.12, at least US$764,330 had to be set aside as the minimum allowable exploration expenditures to be on 37 PLs by both TEL and TCIMRL.

4.2.3.2 Payable annual levies for 37 PLs by TEL and TCIMRL

Appendix 8.13 presents the results of payable annual levy for each of 37 PLs held by TEL and TCIMRL from 2011 to 2015 using Equation 3.2. From Appendix 8.13, TEL and TCIMRL had to pay approximately US$89,365 to the government.

4.2.4 Paid equity role of NDC in prospecting

NDC as a sole commercial entity wholly owned 22 PLs from 1996 to 2015 to develop their licences' prospecting areas through paid equity role (Appendix 8.1.4). However, based on the set rationale of a four years period (2011-2015) underscored in Chapter 3 for computations of both minimum allowable exploration expenditures and receivable annual levies for mineral rights in this research study, NDC exercised paid equity role on 20 PLs out of 22 it wholly owned from 1996 to 2015.

Figure 4.1 presents a summary of computations from information presented in Appendix 8.14 of minimum allowable exploration expenditures in 20 PLs wholly owned by NDC. From Figure 4.1, subtotals of exploration expenditures of 20 PLs in terms of IPP, FRP and SRP were US$434,950, US$386,500 and US$28,410 respectively. The total amount is US$849,860. This means that NDC had to budget to spend at least US$849,860 on 20 PLs for exploration activities.

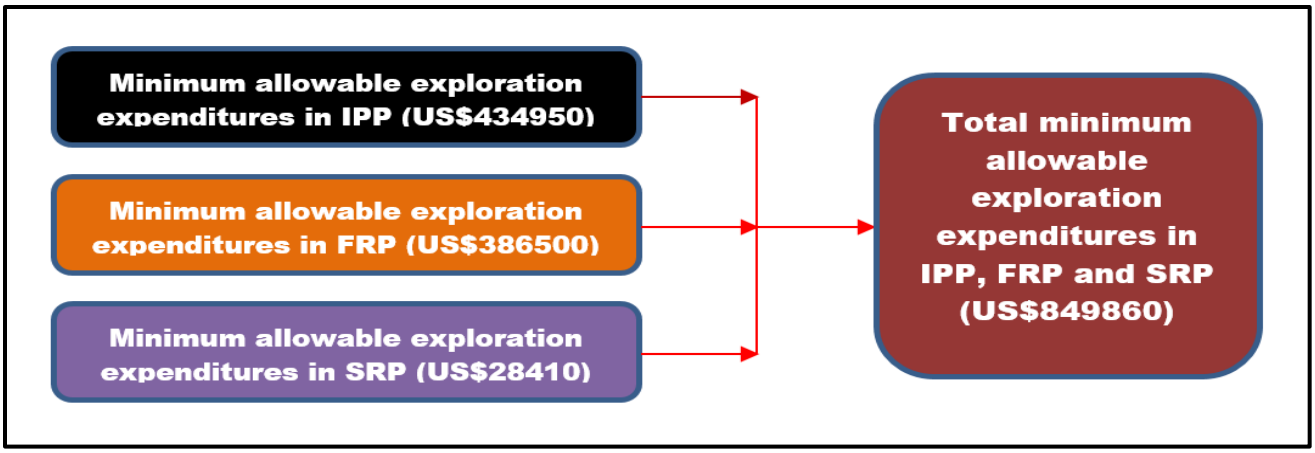

Figure 4.1 Minimum allowable exploration expenditures in 20 PLs wholly owned by NDC

On the other hand, Figure 4.2 depicts the summation of subtotals of payable annual levies in IPP, FRP and SRP resulting in the total value for levies. Equation 3.2 was used for computation of results presented in Appendix 8.15. From Figure 4.2, NDC was in the commitment of payable annual levies of approximately US$107,028 from 2011 to 2015.

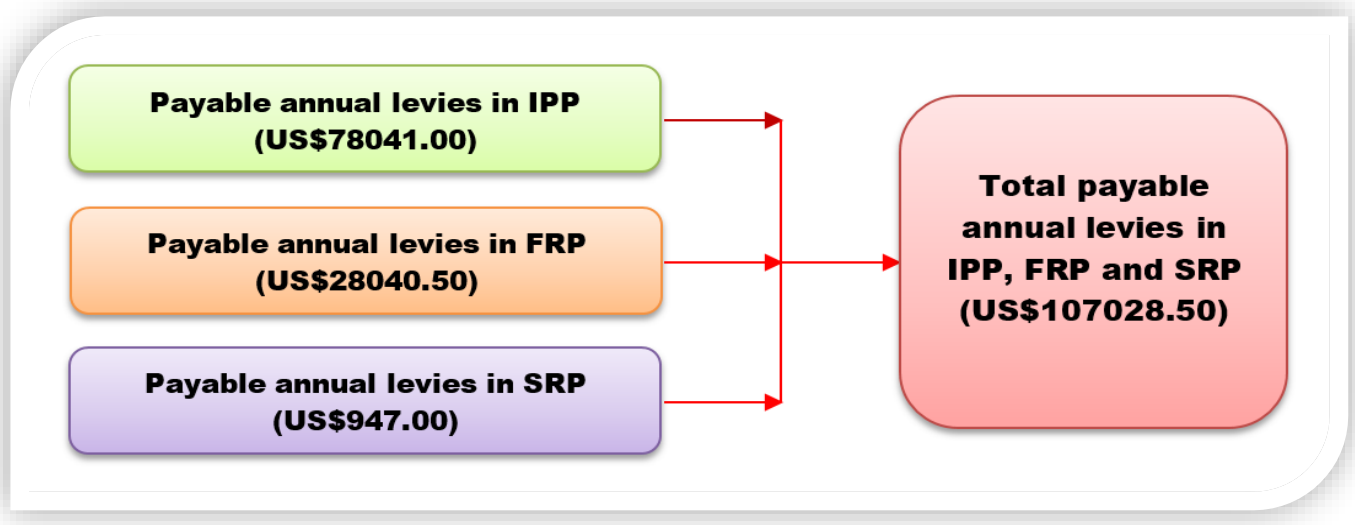

Figure 4.2 Payable annual levies by NDC to TZGT for 20 PLs

4.3 Tanzanian government's equity role in medium scale mining

There is only one type of equity role by the Tanzanian government in medium scale mining namely, carried equity role discussed in this section. Tanzanian government through STAMICO and NDC conducted carried equity role in three medium scale mines namely Merelani Tanzanite Mine (MTM), Kigosi Gold Mine (KGM) and Ngaka Coal Mine (NCM), respectively. This section discusses the three mines.

4.3.1 Merelani Tanzanite Mine (MTM)

Table 4.2 outlines the general information analysed and/or evaluated in relation to TZGT's carried equity role in Merelani Tanzanite Mine (MTM). Ownership of the mine is by the partnership between STAMICO and TOML. Value of the 50% shares bought by STAMICO was US$4 million carried by TOML. TOML's recovery of US$4 million is through 40% of STAMICO's foregone dividends with interests. STAMICO is obliged to receive 60% of its 50% shareholding interests for being a shareholder. However, declaration of dividends will be done only when the partnership holding MTM realises profitable returns. The partnership between STAMICO and TOML owning Merelani Tanzanite Mine (MTM) shares profits at the mine as illustrated in Figure 4.3.

Urafiki Gemstones EPZ Company, which is the wholly subsidiary of TOML, performs value addition of tanzanite. It is worth noting that Urafiki Gemstones EPZ is a fully owned subsidiary of TanzaniteOne Mining Limited. In 2015, MTM employed 592 locals on economies of scale grounds to leverage mining expansion activities set by the management in that year. The mine has contributed to the development of the communities where is located such as developing roads and construction of health care centres. There was a decline on the amount spent on CSR activities from US$427,967 in 2010 to zero in 2014.

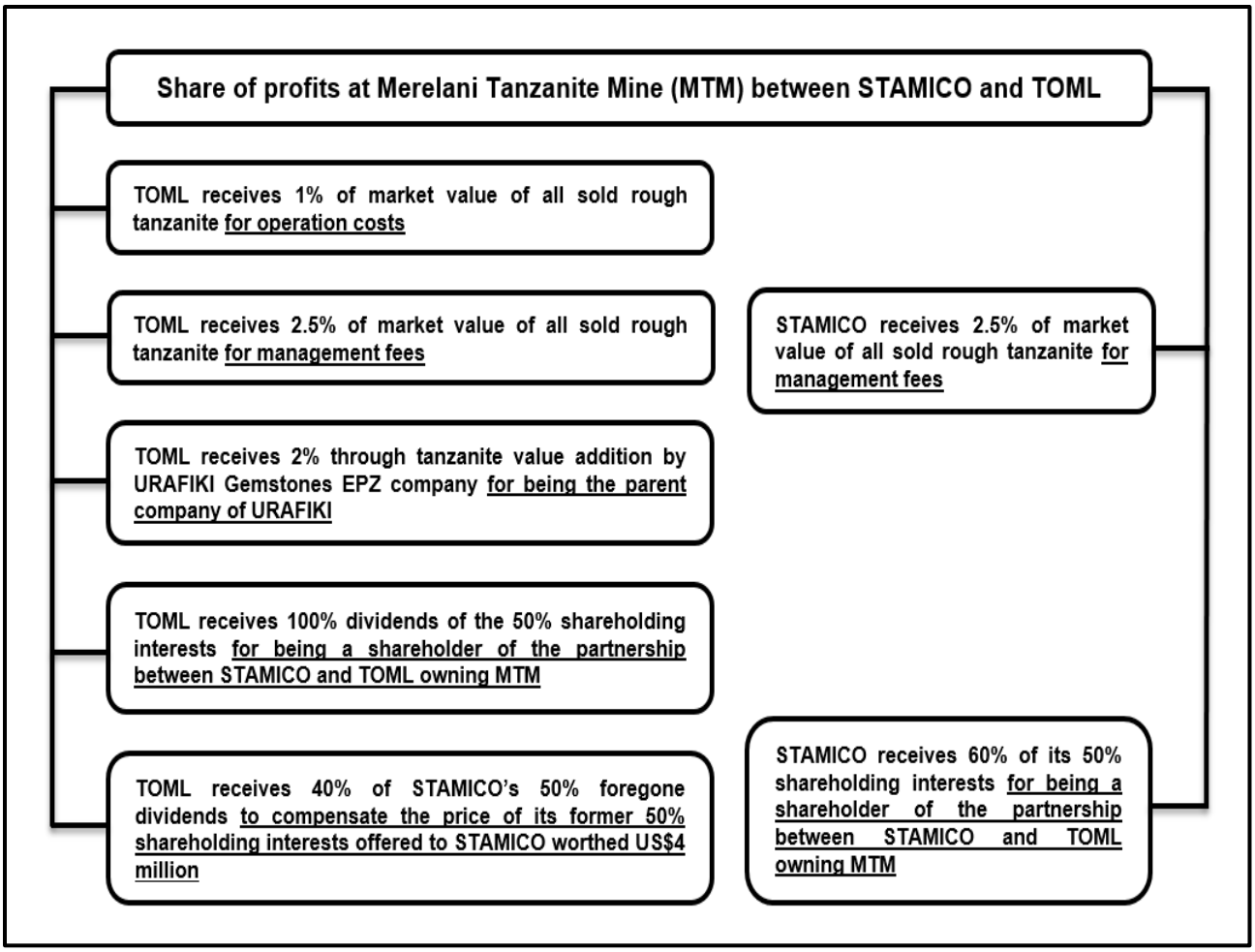

Figure 4.3 Share of profits at Merelani Tanzanite Mine between STAMICO and TOML

Source: Controller and Auditor General (2015); State Mining Corporation (2017); TanzaniaInvest (2014)

Table 4.2 General information on the status of the Merelani Tanzanite Mine (MTM)

Carried Equity Role in Medium Scale Mining		
Merelani Tanzanite Mine: STAMICO and TanzaniteOne Mining Limited (TOML)		
Location and background		Merelani Tanzanite Mine (MTM) is located in Merelani area in Simanjiro District in Manyara region. This is the only area in the world known to have tanzanite deposits. The deposits have about 109 million carats of tanzanite The mine is under the licence ML 490/2013.
Ownership		STAMICO: 50% and TanzaniteOne Mining Limited: 50%.
Licence validity	**Approval date**	20 June 2013.
	Expiry date	19 June 2023.
Mining operations		During the mining operations, TOML will receive 1%, 2.5% and 2% of the market value of the sold minerals for operating costs, management fees and a special share profit for value added tanzanite.
Mineral production		Total of 52.85 million carats of tanzanite (all exported) from 2011-2015 at a value of US$58.16 million.
Mining royalty		Total of US$1.38 million from 2011 to 2015.
Payable annual levy		Total of US$45,600.00 from 2013 to 2015.
Corporate income tax		Total of US$2.6 million from 2006 to 2014.
Other taxes (PAYE, SDL, WHT, VAT, stamp duty, Import duty, Excise duty and service levy)		Total of US$8.64 million from 2006 to 2014.
Employment equity		MTM cumulatively employed 1,166 locals and 23 expatriates from 2009 to 2015.
Human resource development		Fairly achieved despite lack of monitoring and enforcement mechanisms.
Procurement and enterprise development		A 91.63% total procurement from 2012 to 2014 was local at the cost of US$11.6 million.
Mine community development (MCD)		From 2010 to 2014, the mine supplied communities with water, primary school, roads and health care centres.

Sources: Controller Auditor General (2015); State Mining Corporation (2017); Tanzania Minerals Audit Agency (2012, 2013, 2014, 2015 and 2016a)

From Figure 4.4, whilst tanzanite export sales increased from 2465162 carats in 2012 to 15628191 carats in 2013, royalty paid by the mine to the TZGT declined from US$371,296.19 in 2012 to US$229,545 in 2013. However, the results indicate that there is a query on whether a fair mining royalty was paid to the government by MTM in year 2013 following data anomaly. This was due to a mismatch of tanzanite production from 2012 to 2013 vis-a-vis royalty payments in the same period.

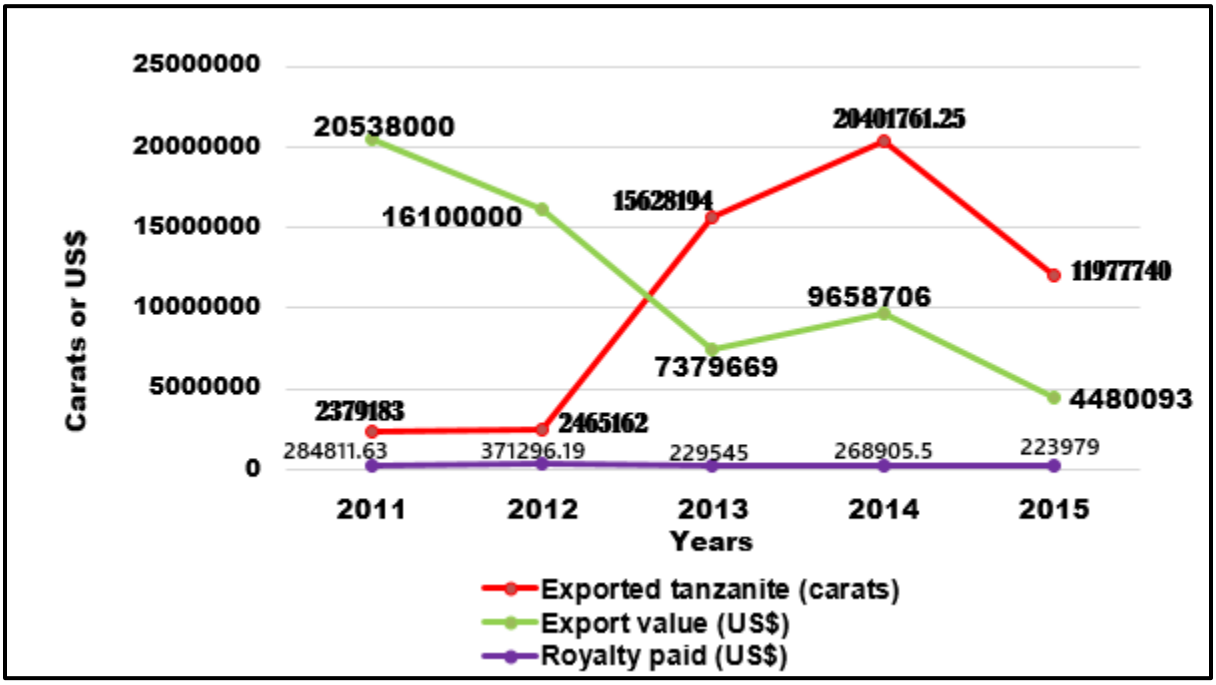

Figure 4.4 Tanzanite production and exports by MTM from 2011 to 2015

Source: Tanzania Minerals Audit Agency (2012, 2013, 2014, 2015 and 2016a)

From Figure 4.5, MTM paid US$8.64 million and US$2.58 million to TZGT for other taxes and corporate income taxes covering a period from 2006 to 2014 respectively. The main reason for corporate income taxes to be lower than other taxes is that from 2009 to 2014 MTM did not pay any corporate income taxes due to non-profit working operations.

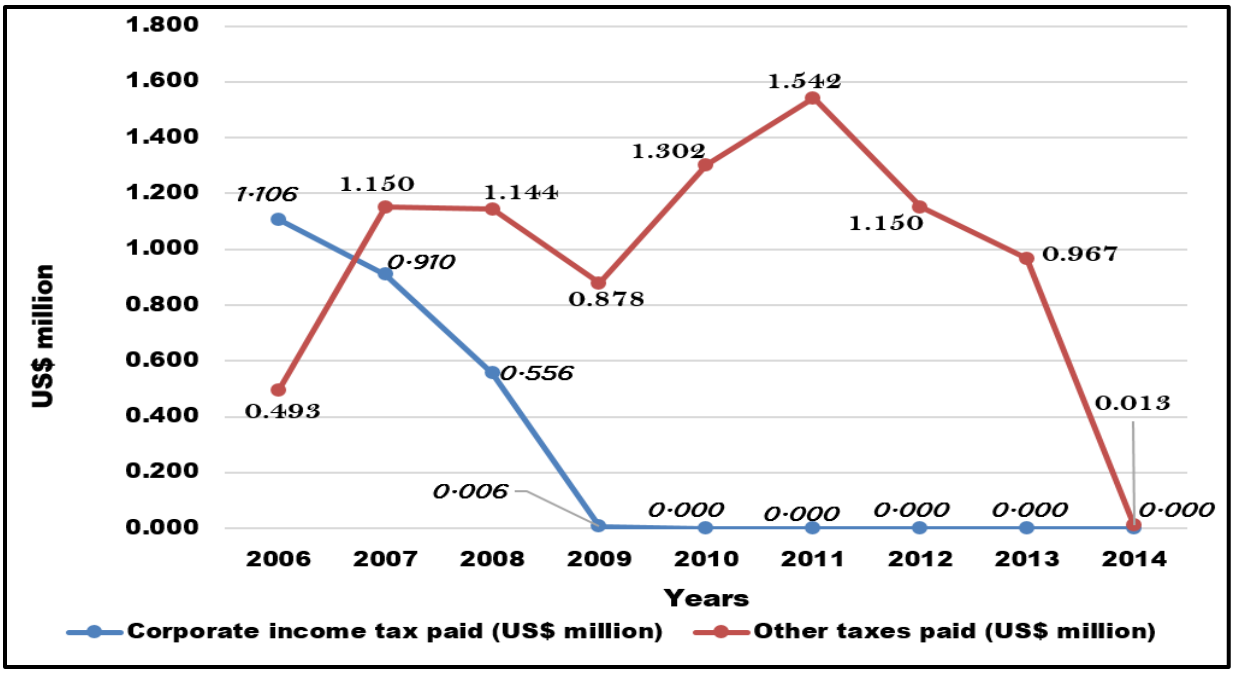

Figure 4.5 Corporate income tax and other taxes paid by MTM from 2006 to 2014

Source: Tanzania Minerals Audit Agency (2015)

4.3.2 Kigosi Gold Mine (KGM)

Table 4.3 depicts general information and data retrieved from various sources, analysed and/or evaluated in relation to TZGT's carried equity role in Kigosi Gold Mine (KGM). The required payable levy to the government was approximately US$59,460 from 2013 to 2015. There was no corporate income tax paid to the government because there were no mining activities carried out at the mine. This is due to non-provision of written consent of the lawful occupier of the surface right to the miner (KTM).

Table 4.3 General information on the status of the Kigosi gold Mine (KGM)

Carried Equity Role in Medium Scale Mining		
Kigosi Gold Mine: STAMICO and Tanzania American International Development Corporation 2000 Limited (TANZAM 2000)		
Location and background		Kigosi Gold Mine (KGM) is located in Kigosi game reserve in Bukombe District in Geita region. The Wildlife Conservation Act of 2013 regulates the game reserve area. KGM is under the licence ML 496/2013. The mine orebody is of inferred mineral resources of 6.30 million tons at an average grade of 0.3g/t of gold. At first ownership of KGM was by TANZAM 2000 at 100%. Then later STAMICO and TANZAM 2000 formed a partnership to hold the mine at 15/85 percent of ownership shares. It is worth noting that TANZAM 2000 is a fully owned subsidiary of Intra Energy Corporation (IEC) of Australia.
Ownership		STAMICO: 15%.
		TANZAM 2000: 85%.
Licence validity	**Approval date**	11 October 2013.
	Expiry date	10 October 2023.
Mining operations		No carrying out of mining operations had taken place at the mine. This is due to non-provision of written consent of the lawful occupier of the surface right (Minister of Natural Resources and Tourism) to permit mining operations at the mine for the Mining Licence being issued on the Minister's surface right.
Mineral production		There were no mineral production at the mine as the mine had been awaiting the written consent from the Minister of Natural Resources and Tourism.
Mining royalty		None.
Payable annual levy		Total of US$59,460.00 from 2013 to 2015.
Corporate income tax		None.
Other taxes (PAYE, SDL, WHT, VAT, stamp duty, Import duty, Excise duty and service levy)		None.
Employment equity		No data displayed in public domains.
Human resource development		No data displayed in public domains.
Procurement and enterprise development		No data displayed in public domains.
Mine community development (MCD)		None.

Source: Eastern Standard Time (2011); Tanzanian Royalty Exploration Corporation (2016)

4.3.3 Ngaka Coal Mine (NCM)

Ngaka Coal Mine is owned by NDC and IETL having 30% and 70% shareholding, respectively. Table 4.4 outlines general data analysed and/or evaluated in relation to TZGT carried equity role in Ngaka Coal Mine (NCM). There was no corporate income tax collected during the period under study, this may be due to the mine not being profitable. Figure 4.6 depicts that from 2011 to 2015, NCM paid a total of US$1.11 million mining royalty to the TZGT. However, there was a sharp increase in mining royalty paid to the TZGT by NCM from 2011 to 2015. This increment in mining royalty was due to both increase in coal production and price. On the contrary, there was a slight fall in mining royalty by US$3,602 from 2014 to 2015. This was due to fewer coal exports, lower coal price and lesser coal consumption by some of local cement manufacturers. Some of local cement manufactures chose to import foreign coal at the expense of local coal, thereby, affecting NCM negatively.

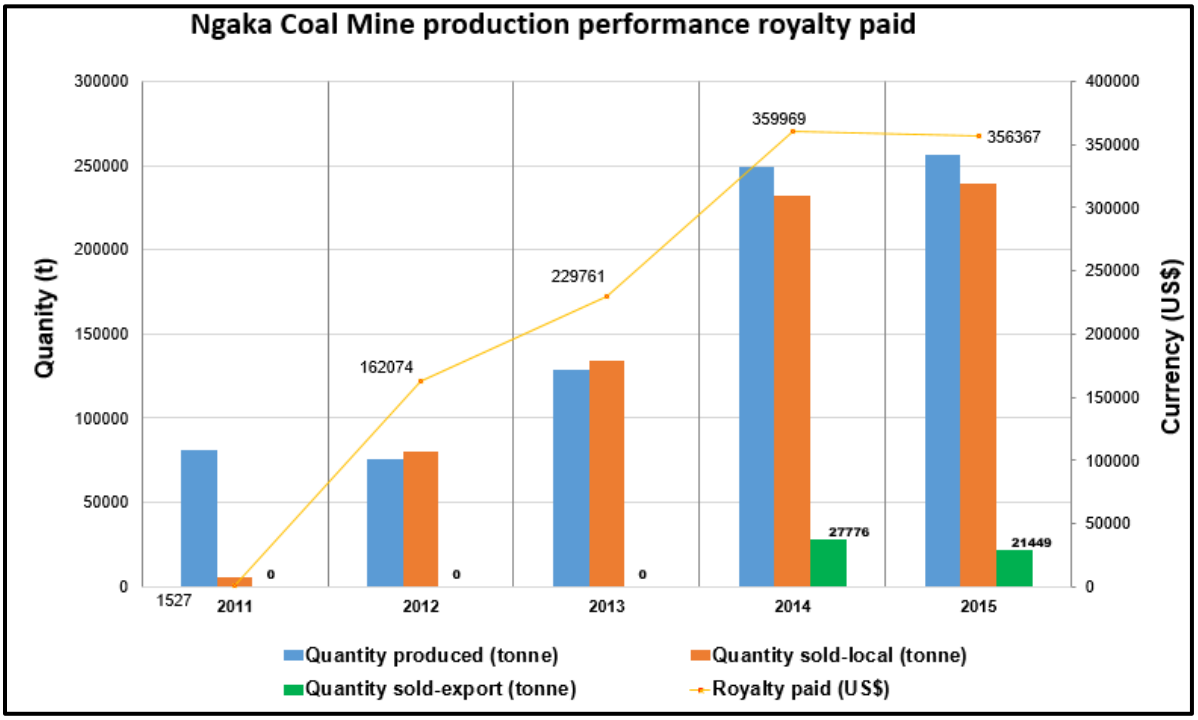

Figure 4.6 Trends in NCM coal production and royalty payment by NCM

Source: Tanzania Minerals Audit Agency (2012, 2013, 2014 and 2015 and 2016a)

Table 4.4 General information of the status of the Ngaka Coal Mine (NCM)

Carried Equity Role in Medium Scale Mining		
Ngaka Coal Mine: NDC and Intra Energy (Tanzania) Limited (IETL)		
Location and background		Ngaka Coal Mine (NCM) is located in Ngaka area in Mbinga District in Ruvuma region. The mine is under the licence ML 439/2011. Tancoal Energy Limited (TEL) made up of two shareholders namely NDC and IETL owns the mine. The proven coal reserves at the NCM stands at 412 million tons It is worth noting that IETL is a fully owned subsidiary of Intra Energy Corporation (IEC) of Australia.
Ownership		NDC: 30%.
		IETL: 70%.
Licence validity	**Approval date**	18 August 2011.
	Expiry date	17 August 2021.
Mining operations		IETL is the main operator of the NCM carrying out mining operations.
Mineral production		A total of 790,761 tons of coal was produced, 690,494 tons sold locally and 49,225 tons exported from 2011 to 2015. Dividends had not been declared due to non-realisation of profitable returns by TEL.
Mining royalty		US$1.11 million from 2011 to 2015.
Payable annual levy		Total of US$119,760.00 from 2011 to 2015.
Corporate income tax		None.
Other taxes (PAYE, SDL, WHT, VAT, stamp duty, Import duty, Excise duty and service levy)		None.
Employment equity		No data displayed in public domains.
Human resource development		Fairly achieved despite lack of monitoring and enforcement mechanisms put in place by the government to ensure skills and knowledge transfer.
Procurement and enterprise development		No data displayed in public domains.
Mine community development (MCD)		No data displayed in public domains.

Source: TanzaniaInvest (2017a); Tanzania Minerals Audit Agency (2012, 2013, 2014, 2015 and 2016a)

4.4 Tanzanian government equity role in large scale mining

There are three types of equity roles that the Tanzanian government is engaged in for large scale mining participation namely: carried equity, paid equity and free carry equity. The government participation is through the roles played by STAMICO, NDC and TR.

4.4.1 Carried equity role of STAMICO, NDC and TR in large scale mining

Tanzanian government through STAMICO, NDC and TR conducted carried equity role in four large scale mines namely Buckreef Gold Mine, Liganga Iron ore Mine, Mchuchuma Coal Mine and Williamson Diamonds Mine respectively. This section discusses the benefits and challenges realised/experienced by the government through its proxies in these mines.

4.4.1.1 Buckreef Gold Mine (BKGM)

Table 4.5 summaries general information analysed and/or evaluated in relation to TZGT's carried equity role in Buckreef Gold Mine (BKGM). The mine is owned by STAMICO and TANZAM 2000 with a 45% and 55% shareholding values, respectively. There are no taxes paid to the government because the mine has not commenced producing gold.

Table 4.5 General information of the status of the Buckreef Gold Mine (BKGM)

Carried Equity Role in Large Scale Mining		
Buckreef Gold Mine: STAMICO and Tanzania American International Development Corporation 2000 Limited (TANZAM 2000)		
Location and background		Buckreef Gold Mine (BKGM) is located in Rwamgasa area in Geita District in Geita region. The mine is under the licence SML 04/92. Buckreef Gold company Limited (BKGCL) made up of two shareholders namely STAMICO and TANZAM 2000 owns the mine. The mine orebody is of measured and indicated gold ore reserves of 60 million tonnes with average grade of 1,26g/t of Au. It is worth noting that TANZAM 2000 is a fully owned subsidiary of Tanzanian Royalty Corporation (TRX).
Ownership		STAMICO: 45% and TANZAM 2000: 55%.
Licence validity	**Approval date**	12 June 2000.
	Expiry date	11 June 2027.
Mining operations		TANZAM 2000 carried out mining operations for BKGCL since 2000 despite none of profitable returns.
Mineral production		There had been no gold production since 2000.
Mining royalty		None.
Payable annual levy		Total of US$0.16 million from 2011 to 2015.
Corporate income tax		None.
Other taxes (PAYE, SDL, WHT, VAT, stamp duty, Import duty, Excise duty and service levy)		None.
Employment equity		No data displayed in public domains.
Human resource development		Fairly achieved despite lack of monitoring and enforcement mechanisms put in place by the government to ensure skills and knowledge transfer.
Procurement and enterprise development		No data displayed in public domains.
Mine community development (MCD)		No data displayed in public domains.

Sources: State Mining Corporation (2017); Tanzania Minerals Audit Agency (2016a)

4.4.1.2 Liganga Iron ore Mine (LIOM)

Table 4.6 outlines general information analysed and/or evaluated in relation to TZGT carried equity role in Liganga Iron ore Mine (LIOM). The mine is owned by NDC and SHG with 20% and 80% shareholding, respectively. Mine is under development and its operations commencement is dependent on the completion of ongoing on constructions of: (i) Mchuchuma Coal Mine, (ii) 600MW Mchuchuma Thermal Power Station, (iii) 220kV transmission line from Mchuchuma to Liganga and (iv) Liganga Iron Ore Mine. There has been no royalty and taxes paid but only levies of US$0.15 million has been paid to the government.

4.4.1.3 Mchuchuma Coal Mine (MCM)

Table 4.7 summaries information in relation to TZGT carried equity role in Mchuchuma Coal Mine (MCM). The mine is owned by NDC and SHG with 20% and 80% shareholding, respectively. There had been no coal production since 2014, thus, the government could only receive a levy of approximately US$0.13 million.

4.4.1.4 Williamson Diamonds Mine (WDM)

Table 4.8 summaries information in relation to government carried equity role in Williamson Diamonds Mine (WDM). TR and Petra Diamonds Limited own the mine with 25% and 75% shareholding, respectively. The government was able to collect taxes and levies totalling to approximately US$36 million from 2006 and 2014. From 2010 to 2014, the mine spent US$1.16 million in CSR activities on communities around the mine. CSR activities performed by the mine included supplying the communities with water, upgrading roads and numerous classrooms provision of infrastructures well as agriculture improvements. However, there was a decline on the amount spent on CSR activities (i.e., from US$381, 813 in 2010 to 125,323 in 2014 respectively).

Table 4.6 General information of the status of the Liganga Iron ore Mine (LIOM)

Carried Equity Role in Large Scale Mining		
Liganga Iron ore Mine: NDC and Sichuan Hongda Group of China (SHG)		
Location and background		Liganga Iron ore Mine (LIOM) is located in Liganga area in Ludewa District in Njombe region. The mine is under the licence is SML 533/2014. Tanzania China International Mineral Resources Limited (TCIMRL) made up of two shareholders NDC and SHG owns the mine. The mine orebody is with 126 million tons mineable iron ore reserves. SHG is a fully owned subsidiary of Hongda Group of China. LIOM is one of the two subprojects under the large Liganga Iron Coal Project (LIOP). The other is Liganga Iron and Steel Metallurgical Complex specifically for the production of iron and steel products namely vanadium pentoxide and titanium dioxide. The two subprojects under LIOP will depend entirely on power and coal supplies from Mchuchuma Coal Project (MCP). This means that MCP has to start operations in advance of LIOP. LIOP and SHG will invest US$1.8 billion in the two aforementioned subprojects.
Ownership		NDC: 20% and SHG: 80%
Licence validity	**Approval date**	09 October 2014.
	Expiry date	08 October 2039.
Mining operations		Mine is under development and its operations commencement is dependent on the completion of ongoing on constructions of: (i) Mchuchuma Coal Mine, (ii) 600MW Mchuchuma Thermal Power Station, (iii) 220kV transmission line from Mchuchuma to Liganga and (iv) Liganga Iron Ore Mine.
Mineral production		There had been no iron ore production since 2014.
Mining royalty		None.
Payable annual levy		US$0.15 million from 2014 to 2015.
Corporate income tax		None.
Other taxes (PAYE, SDL, WHT, VAT, stamp duty, Import duty, Excise duty and service levy)		None.
Employment equity		LIOM together with MCM will employ 32,000 locals.
Human resource development		Fairly achieved despite lack of monitoring and enforcement mechanisms
Procurement and enterprise development		No data displayed in public domains.
Mine community development (MCD)		No data displayed in public domains.

Source: TanzaniaInvest (2017b); National Development Corporation (2012b)

Table 4.7 General information of the status of the Mchuchuma Coal Mine (MCM)

Carried Equity Role in Large Scale Mining		
Mchuchuma Coal Mine: NDC and Sichuan Hongda Group of China (SHG)		
Location and background		Mchuchuma Coal Mine (MCM) is located in Mchuchuma area in Ludewa District in Njombe region. The mine is under the licence is SML 534/2014. Tanzania China International Mineral Resources Limited (TCIMRL) made up of two shareholders namely NDC and SHG owns the mine. Mine deposits are with 428 million tons proven coal reserves. MCM is among three subprojects under the large Mchuchuma Coal Project (MCP). The other two include: (i) 600MW Mchuchuma Thermal Power Station and (ii) 220kV transmission line from Mchuchuma to Liganga. MCM and SHG will invest US$1.2 billion in the three aforementioned subprojects.
Ownership		NDC: 20% and SHG:80%
Licence validity	**Approval date**	09 October 2014.
	Expiry date	08 October 2039.
Mining operations		Mine is under development in conjunction with the other two subprojects under MCP.
Mineral production		There had been no coal production since 2014.
Mining royalty		None.
Payable annual levy		US$0.13 million from 2014 to 2015.
Corporate income tax		None.
Other taxes (PAYE, SDL, WHT, VAT, stamp duty, Import duty, Excise duty and service levy)		None.
Employment equity		MCM together with LIOM will employ 32,000 locals. However, there had been no data in public domains outlining the number of expatriates employed at the MCM.
Human resource development		Fairly achieved despite lack of monitoring and enforcement mechanisms put in place by the government to ensure skills and knowledge transfer.
Procurement and enterprise development		No data displayed in public domains.
Mine community development (MCD)		No data displayed in public domains.

Source: TanzaniaInvest (2017b); National Development Corporation (2012c)

Table 4.8 General information of the status of the Williamson Diamonds Mine (WDM)

Carried Equity Role in Large Scale Mining		
Williamson Diamonds Mine: TR and Petra Diamonds Limited		
Location and background		Williamson Diamonds Mine (WDM) is located in Mwadui area in Kishapu District in Shinyanga region. The mine is under the licence SML 216/2005. Ownership of the mine is by the partnership between TR and Petra Diamonds Limited of South Africa. The deposits have about 40.39 million carats of diamond.
Ownership		TR: 25% and Petra Diamonds Limited: 75%.
Licence validity	**Approval date**	25 May 2005.
	Expiry date	24 May 2030.
Mining operations		Petra Diamonds Ltd had carried out mining operations for the partnerships holding.
Mineral production		Total of 702,692 carats of tanzanite (all exported) from 2011-2015 at a value of US$202.92 million. In 2013, the mine paid to TZGT, corporate income tax of worth US$0.75 million an indication of profitable returns realisation at the mine. However, there were no data in public substantiating resulted dividends for TZGT via TR due to that payment.
Mining royalty		Total of US$9.44 million from 2011 to 2015.
Payable annual levy		US$0.31 million from 2011 to 2015.
Corporate income tax		Total of US$0.11million from 2006 to 2014.
Other taxes (PAYE, SDL, WHT, VAT, stamp duty, Import duty, Excise duty and service levy)		Total of US$25.92 million from 2006 to 2014.
Employment equity		Mine cumulatively employed 558 locals and 11 expatriates from 2009 to 2015. However, from 2010 to 2012 about 76 locals left. 24 new employees (locals) were employed in 2013 and 2014.
Human resource development		Fairly achieved despite lack of monitoring and enforcement mechanisms
Procurement and enterprise development		Local procurement of goods was at 80.5% from 2012 to 2014 at a value of US$98.91 million.
Mine community development (MCD)		The mine spent US$1.16 million in CSR activities on communities around the mine. CSR activities such as supplying the communities with water, roads and schools.

Source: Tanzania Minerals Audit Agency (2012, 2013, 2014, 2015 and 2016a)

Figure 4.7 shows that WDM paid to the TZGT corporate income tax of US$0.11 million for the year 2013 after having realised profit returns. The mine operated under losses in the remaining years from 2006 to 2012 and 2014 respectively. These impeded payments of corporate income taxes and government dividends. However, it is not clear whether WDM paid government dividends during the time of paying the aforementioned corporate income tax. This is due to lack of information or data in public domains by Petra Diamonds Ltd, TR, MEM and TEITI. Other notable payments by WDM to the TZGT in the 2006-2014 period were of the other taxes totalling to approximately US$26 million.

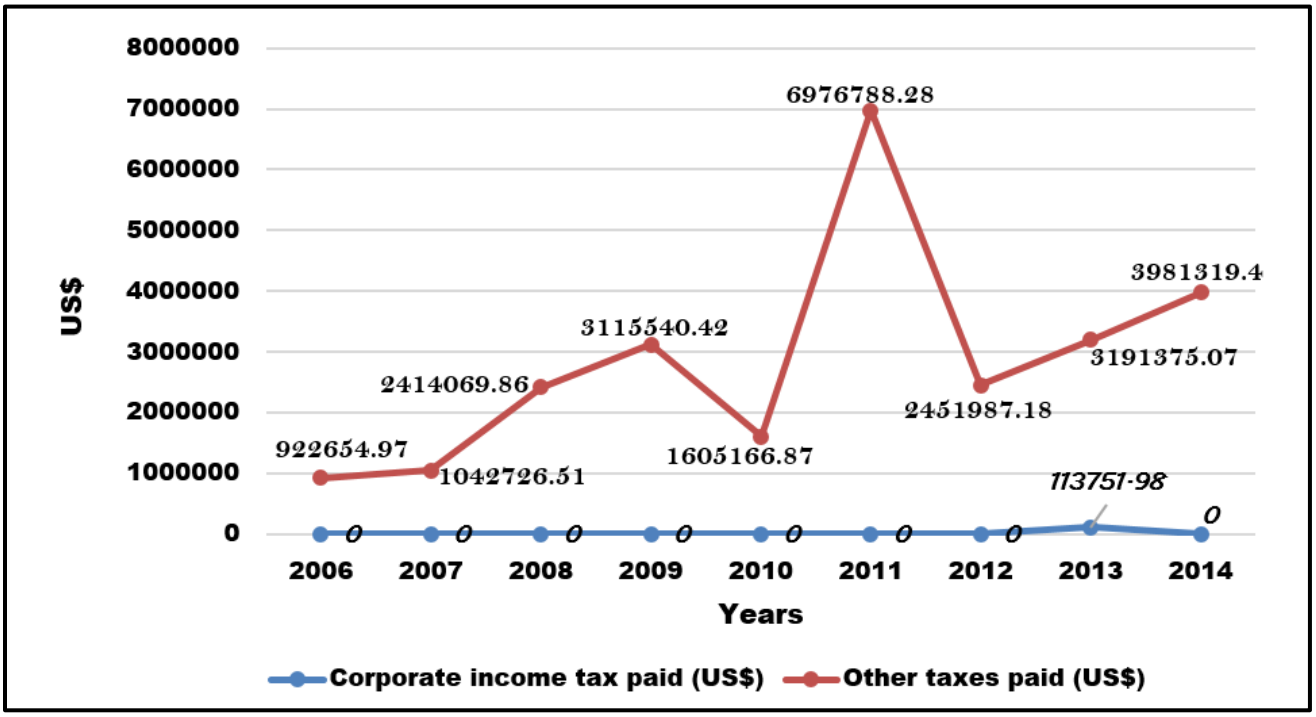

Figure 4.7 Corporate income tax and other taxes paid by WDM from 2006 to 2014

Source: Tanzania Minerals Audit Agency (2015)

4.4.2 Paid equity role of STAMICO in large scale mining

Tanzania through STAMICO conducted paid equity role in two large scale mines namely: Kiwira Coal Mine (KCM) and Stamigold Biharamulo Mine (SBM). These mines are discussed in this section.

4.4.2.1 Kiwira Coal Mine (KCM)

Table 4.9 outlines general information and data retrieved from various sources, analysed and/or evaluated in relation to TZGT paid equity role in Kiwira Coal Mine (KCM). Kiwira Coal and Power Ltd (KCPL) owns KCM and the 6MW Power Station within the SML area. The plant is set to power the mine and generate revenues for KCPL through electricity selling to TANESCO. KCPL is a sole commercial entity and a wholly owned subsidiary of STAMICO. The proved coal reserves at the NCM stands at 35.4 million tonnes.

4.4.2.2 Stamigold Biharamulo Mine (SBM)

Table 4.10 outlines general information in relation to TZGT paid equity role in Stamigold Biharamulo Mine (SBM), which is owned by Stamigold Company Limited. Stamigold Company Limited is a subsidiary of STAMICO. Before 2013, Pangea Minerals Ltd and MDN Inc. owned SBM formerly known as known Tulawaka Gold Mine. As Tulawaka gold Mine was approaching its end of life, its owners settled with the TZGT for the government to acquire the mine in order to mine the remnant gold bearing areas of 200,000 troy ounces. In this deal, Pangea Minerals Ltd and MDN Inc. had to give TZGT US$11.6 million out of US$16.1 million of mine rehabilitation fund. The remaining US$4.5 million acted as a compensation for giving government the mine. TZGT tasked STAMICO to operate the mine and be responsible for the mine rehabilitation. In order to address these, it formulated Stamigold Company Ltd, its fully owned subsidiary in October 2013. TR and STAMICO are shareholders in this mine as per government with 1% and 99% shareholding, respectively. The mine has paid a total of approximately US$2.7 million of taxes and levy to the government; however, these taxes do not include corporate income tax.

Table 4.9 General information of the status of the Kiwira Coal Mine (KCM)

Paid Equity Role in Large Scale Mining		
Kiwira Coal Mine: NDC Kiwira Coal and Power Limited (KCPL)		
Location and background		Kiwira Coal Mine (KCM) is located in Kiwira area crossing two Districts of Ileje and Rungwe both in Mbeya region. The mine is under the licence SML 233/2005. Kiwira Coal and Power Ltd (KCPL) owns KCM and the 6MW Power Station within the SML area. The plant is set to power the mine and generate revenues for KCPL through electricity selling to TANESCO.
Ownership		KCPL: 100%.
Licence validity	**Approval date**	17 November 2005.
	Expiry date	16 November 2030.
Mining operations		Operations not yet started awaiting tendering for re-development of the mine and 6MW Power Station.
Mineral production		None.
Mining royalty		None.
Payable annual levy		US$0.23 million from 2011 to 2015
Corporate income tax		None.
Other taxes (PAYE, SDL, WHT, VAT, stamp duty, Import duty, Excise duty and service levy)		None.
Employment equity		No data displayed in public domains.
Human resource development		No data displayed in public domains.
Procurement and enterprise development		No data displayed in public domains.
Mine community development (MCD)		No data displayed in public domains.

Sources: State Mining Corporation (2017); TanzaniaInvest (2017c); Tanzania Minerals Audit Agency (2016a)

Table 4.10 General information of the status of the Stamigold Biharamulo Mine (SBM)

Paid Equity Role in Large Scale Mining		
Stamigold Biharamulo Mine: Stamigold Company Limited and Treasury Registrar (TR)		
Location and background		Stamigold Biharamulo Mine (SBM) is located in Tulawaka area crossing four Districts in two regions. These are Geita, Bukombe and Chato Districts in Geita region and Biharamulo District in Kagera region. The mine is under the licence SML 157/2003.
Ownership		STAMICO: 99% and Treasury Registrar (TR): 1%.
Licence validity	**Approval date**	03 November 2003.
	Expiry date	02 November 2028.
Mining operations		Stamigold company Ltd had carried out mining operations at the mine since July 2014.
Mineral production		Exportation of gold and silver was 21,236 and 2,240 troy ounces of value US$24.67 million from 2014 to 2015.
Mining royalty		US$0.82 million from 2014 to 2015.
Payable annual levy		Total of US$0.30 million from 2011 to 2015.
Corporate income tax		None.
Other taxes (PAYE, SDL, WHT, VAT, stamp duty, Import duty, Excise duty and service levy)		Total of US$1.61million 2011 to 2015.
Employment equity		Only locals employed at the mine, 340 skilled and 43 non-skilled employed at the mine.
Human resource development		Fairly achieved despite lack of monitoring and enforcement mechanisms
Procurement and enterprise development		Mine spent US$63,076.92 in purchasing locally produced and supplied food stuffs from 2011 to 2015.
Mine community development (MCD)		From 2011 to 2015, the mine spent a total of US$101,238.47 on CSR activities for community around the mine. CSR activities performed included facilitation of desks to pupils and renovations of water storage facilities, feeder roads as well as classrooms.

Sources: State Mining Corporation (2017); Tanzania Minerals Audit Agency (2014, 2016a)

4.4.3 Free carry equity role of TZGT in large scale mining

Following the inception of Mineral Policy of 2009 in Tanzania, TZGT introduced free carry equity role in large scale mining. This is another form of government equity role in large scale mining apart from carried and paid forms (Section 4.4).

Mining companies under free carry equity pay free carried interest (FCI) in terms of dividends to the government during profits-making periods (Section 2.5.4). However, according to Ministry of Energy and Minerals (2010a), minerals development agreement (MDA) deems to incorporate mechanism for mining companies to grant FCI to the government. In addition, other crucial things relative to FCI, MDA incorporates include:

- The grant of SMLs;
- The conduct of mining operations under a SML;
- The grant of the TZGT free carried interest by the mining company under the carry equity role;
- State participation in mining; and
- Financing of any mining operations under a special mining licence.

The Minister for Energy and Minerals is empowered to enter into MDA with holders of or applicants for SMLs. However, in order for MDA to be endorsed, prior negotiations between government and mining company take place. In the negotiations of the MDA on the project under free equity carry, there are also discussions about the value of the FCI. The aim is to obtain agreeable FCI to be applied in the project. However, types of minerals and level of investment determine FCI as rationales (Ministry of Energy and Minerals, 2010a). It is worth highlighting here that, in 2014 TZGT had decided to acquire free carried interest from two large scale mining projects for its carry equity role. The two projects pertaining to this government strategy are Nachu Graphite Project (NGRP) and Mkuju River Uranium Project (MRUP) owned by Uranex (Tanzania) Limited and Mantra Tanzania Limited, respectively.

Reserves of graphite in NGRP stand at about 174 million tonnes with an average grade of 5.4% graphitic carbon (Cg). This project applied a cut-off grade of 3%. The uranium deposit

at MRUP contains approximately 56,517 tonnes measured and indicated (Mining Technology, 2017; Tanzania Minerals Audit Agency, 2016a). In addition, Uranex (Tanzania) Limited is a wholly owned subsidiary of Magnis Resources Limited whilst Mantra Tanzania Limited is a subsidiary of Mantra Resources Pty Ltd.

The negotiations for having FCI for each project between the TZGT and the projects owners took place from 2014 to 2015. However, these negotiations could not lead to agreeable FCIs for signing of minerals development agreements (MDAs) as they ended up fruitless in 2015. This therefore made the Tanzanian government not to practice free carry equity role in NGRP and MRUP.

4.5 Chapter summary

In the period from 1996 to 2015, the equity role of the Tanzanian government focused on prospecting, medium and large scale mining. In prospecting, execution of carried form of TZGT equity role took place in 13 and 43 PLs partially owned by STAMICO and NDC respectively. At the same time, the paid equity was applied in 41 PLs of the same parastatals. Carried and paid forms of TZGT equity role were also applied in medium and large scale mines as follows:

- Three medium scale mines, i.e. MTM, KGM and NCM, applied carried equity role;
- Four large scale mines, i.e. BKGM, LIOM, MCM and WDM, practiced the same carried equity role: and
- Two large scale mines notably: KCM and SBM conducted paid equity role.

In addition, TZGT introduced free carry equity, which obliges mining companies under this form of equity role to grant free carried interests (FCIs) to the TZGT (Ministry of Energy and Minerals (2010a). In 2014, two large scale mining projects namely Nachu Graphite Project (NGRP) and Mkuju River Uranium Project (MRUP) were in the process of adopting the free carry role. Ministry of Energy and Minerals (2010a) requires that FCIs be determined through negotiations between TZGT and mining companies set to pursue the strategy. In addition, negotiations for having FCI for NGRP and MRUP took place from 2014 to 2015. Despite

parties carrying out the negotiations, they did not arrive at agreeable FCIs for signing of minerals development agreements (MDAs) which could not take place.

5 RESULTS AND DISCUSSION

5.1 Introduction

This chapter discusses results of analyses pertinent to objectives of the research study including challenges (shortfalls or shortcomings) faced by Tanzanian government's equity role strategy from 1996 to 2015. In addition, this chapter discusses also causes of such shortfalls or challenges faced by the strategy.

5.2 Results of all mineral rights owned by Tanzanian government

The analysis of all mineral rights owned by the TZGT focused on PLs, MLs and SMLs partially and wholly owned by STAMICO and NDC and TR. In this study, Appendices 8.11, 8.16 and 8.3.1 were used to determine a number of mineral rights owned by the TZGT from 1996 to 2015. More importantly to note, is that Appendix 8.11 generated from information presented in Appendices 8.1.1, 8.1.2, 8.2.1, 8.3.1 and 8.3.2 while Appendix 8.16 emanated from Appendices 8.1.3, 8.1.4 and 8.3.1.

Data in Appendix 8.11 was used to produce Figure 5.1, which indicates that STAMICO partially and wholly owned 17 and 20 mineral rights from 1996 to 2015, respectively. Partially owned mineral rights by STAMICO were 13 PLs, 2 MLs and 2 SMLs whilst wholly owned ones included 19 PLs and 1 SML. Minerals sought in the mineral rights were gold, tanzanite, phosphate, REE, gypsum, kaolin, feldspar and coal.

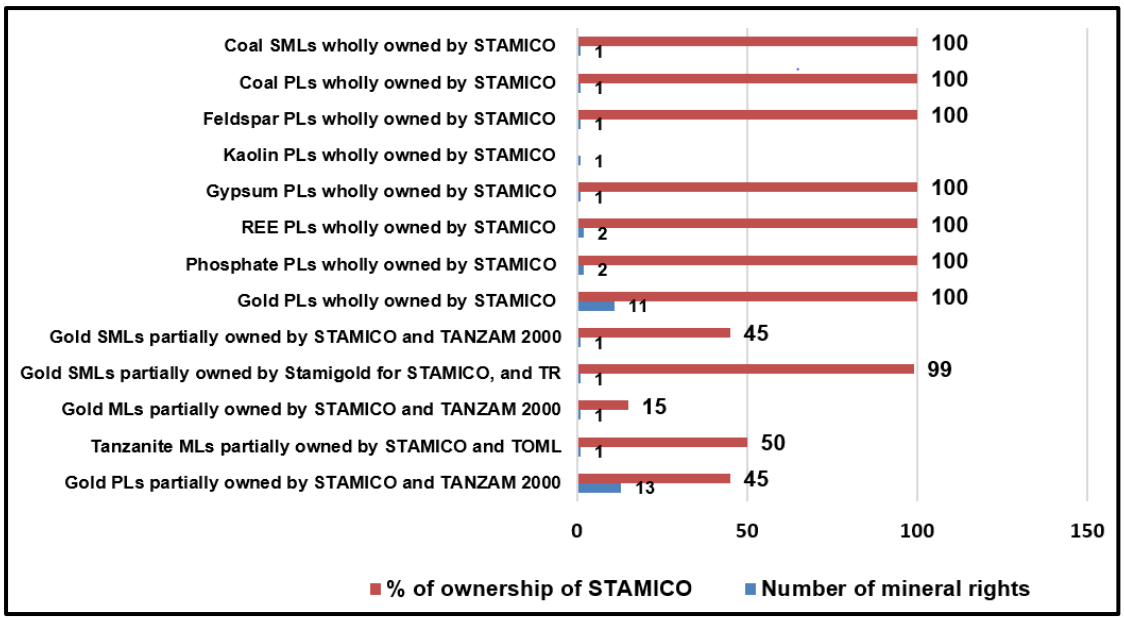

Figure 5.1 Mineral rights partially and wholly owned by STAMICO

Data in Appendix 8.16 was used to produce Figure 5.2, which depicts that NDC partially and wholly owned 46 and 22 mineral rights, respectively from 1996 to 2015. As shown in Figure 5.2 partially owned mineral rights by NDC were 43 PLs, 1 ML and 2 SMLs while wholly owned ones were 22 PLs. Minerals sought in mineral rights included coal, iron, dolomite, soda ash, AOBG and gold.

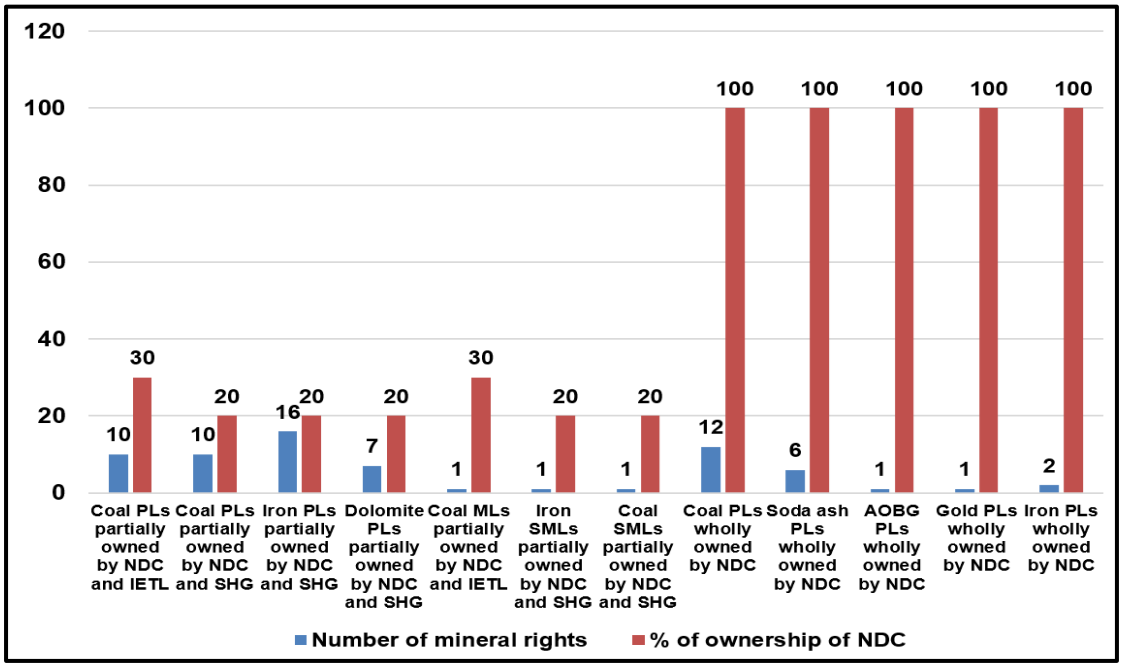

Figure 5.2 Mineral rights partially and wholly owned by NDC

NDC played its role in the minerals industry by going into joint venture with IETL and SHG through TEL and TCIMRL companies, respectively. According to Figure 5.3, TEL was awarded 10 coal Prospecting Licences and 1 coal Mining Licence. In addition, TCIMRL acquired 10 coal, 17 iron, 7 dolomite Prospecting Licences and 1 coal Special Mining Licences.

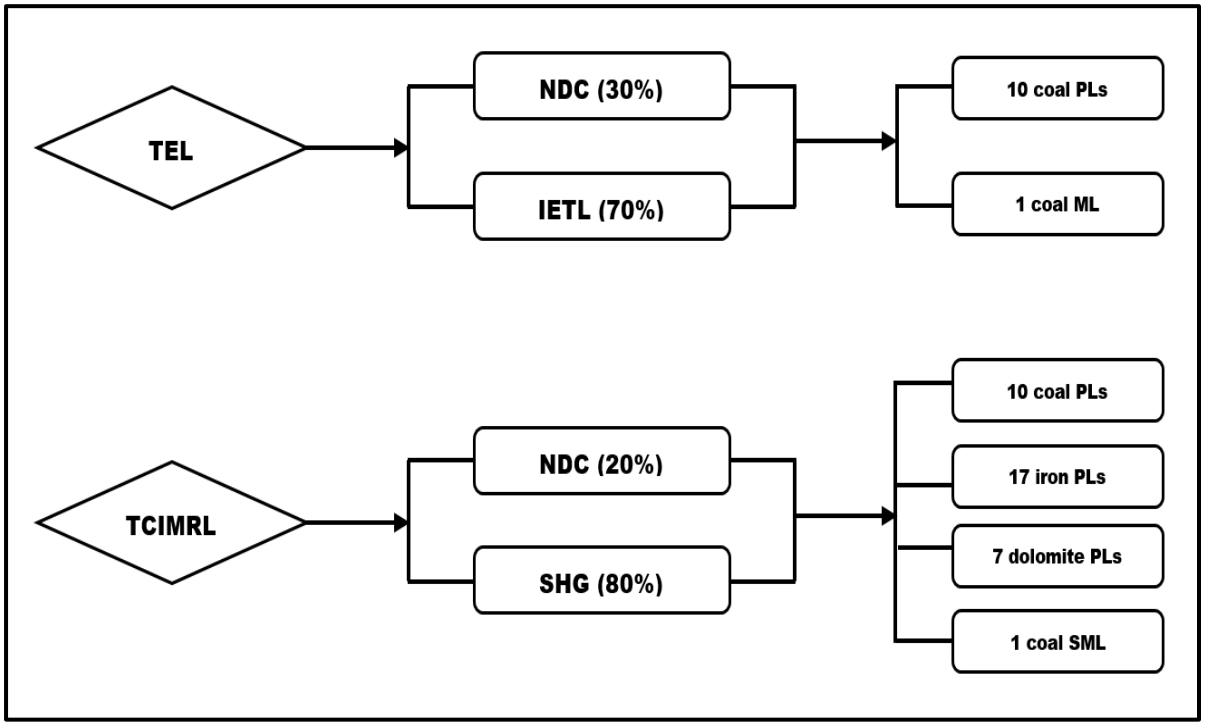

Figure 5.3 Shareholders of TEL and TCIMRL private JV companies and mineral rights

Looking into the equity role of TR in mineral rights, Appendix 8.3.1 indicates that TR partially owned one diamond SML namely SML 216/2005. The TR's percentage of ownership of a mineral right vis-a-vis private investor was 25%. The private investor that owns the diamond SML with TR is Petra Diamonds Ltd, owning 75% shares in the Licence.

In this research study, it was also important to analyse the number of mineral rights issued per mineral type (Figure 5.4). This together with the analysis of business structures (business ownerships) holding mineral rights as indicated in Figure 5.5 was useful in the understanding of:

- The mineral seeking intensity in Tanzania under government equity role in the mining industry; and
- Entities holding mineral rights, their nature of business ownerships and types of mineral rights held under TZGT equity role in the mining industry.

On the mineral seeking intensity under TZGT equity role from 1996 to 2015, seeking of coal was at higher rate as compared to other minerals followed by gold and iron (Figures 5.4 and 5.5). This was presumably due to high granting of coal mineral rights by the Ministry of Energy and Minerals (MEM). For instance, from 1996 to 2015, MEM granted 36 coal, 28 gold and 19 iron mineral rights in line with TGZGT equity role in the minerals industry.

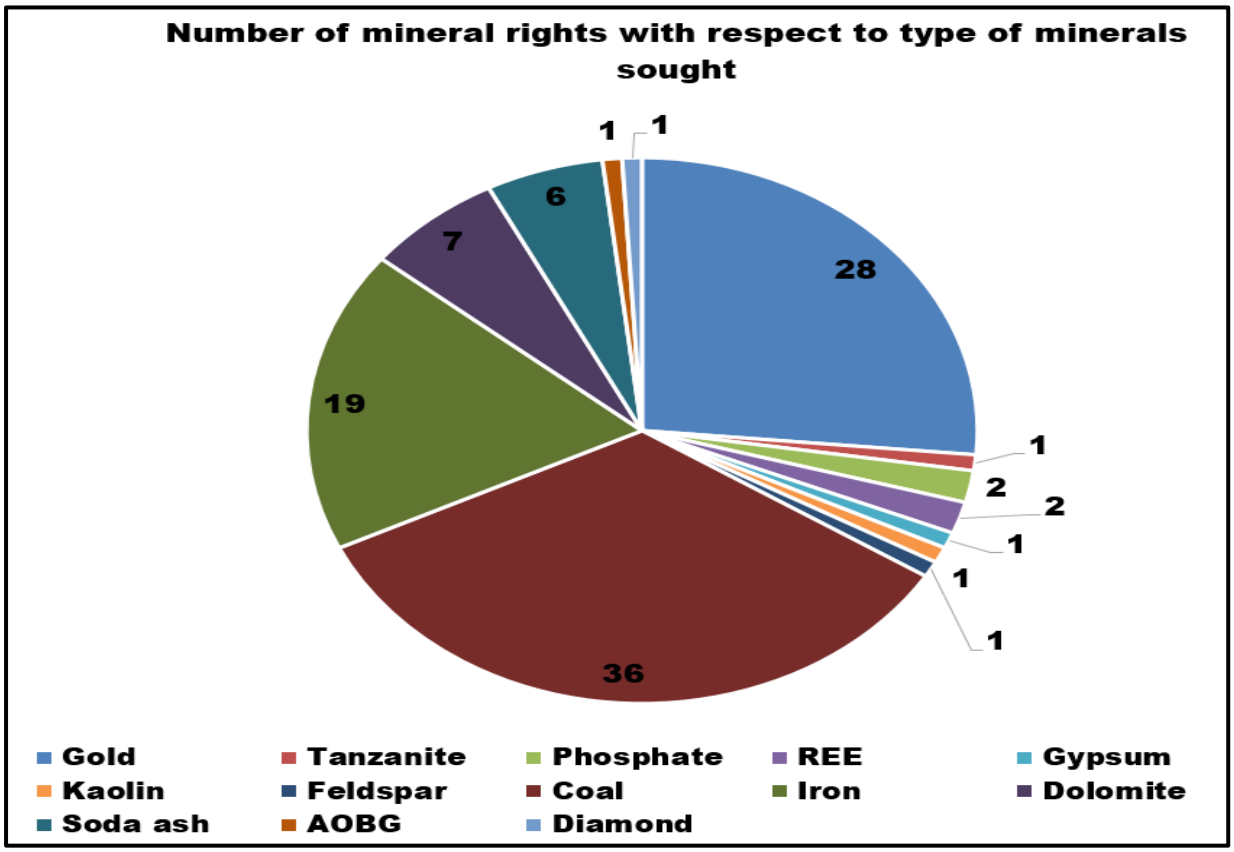

Figure 5.4 Mineral rights sought under equity role from 1996 to 2015

Figure 5.5 presents entities, which owned mineral rights from 1996 in relation to TZG equity role in the mining industry. Each indicator in the presentation in Figure 5.5 comprised of the mineral type, type of mineral right and percentage of ownership by the shareholder(s). Deducing from Figure 5.5:

- 60 mineral rights out of 106 were owned through private JV companies;
- 42 mineral rights out of 106 were fully owned by STAMICO and NDC as sole commercial entities, thus making a 39.6% ownership; and
- Four mineral rights out of 106 were owned through partnerships, thus making a 3.8% of ownership.

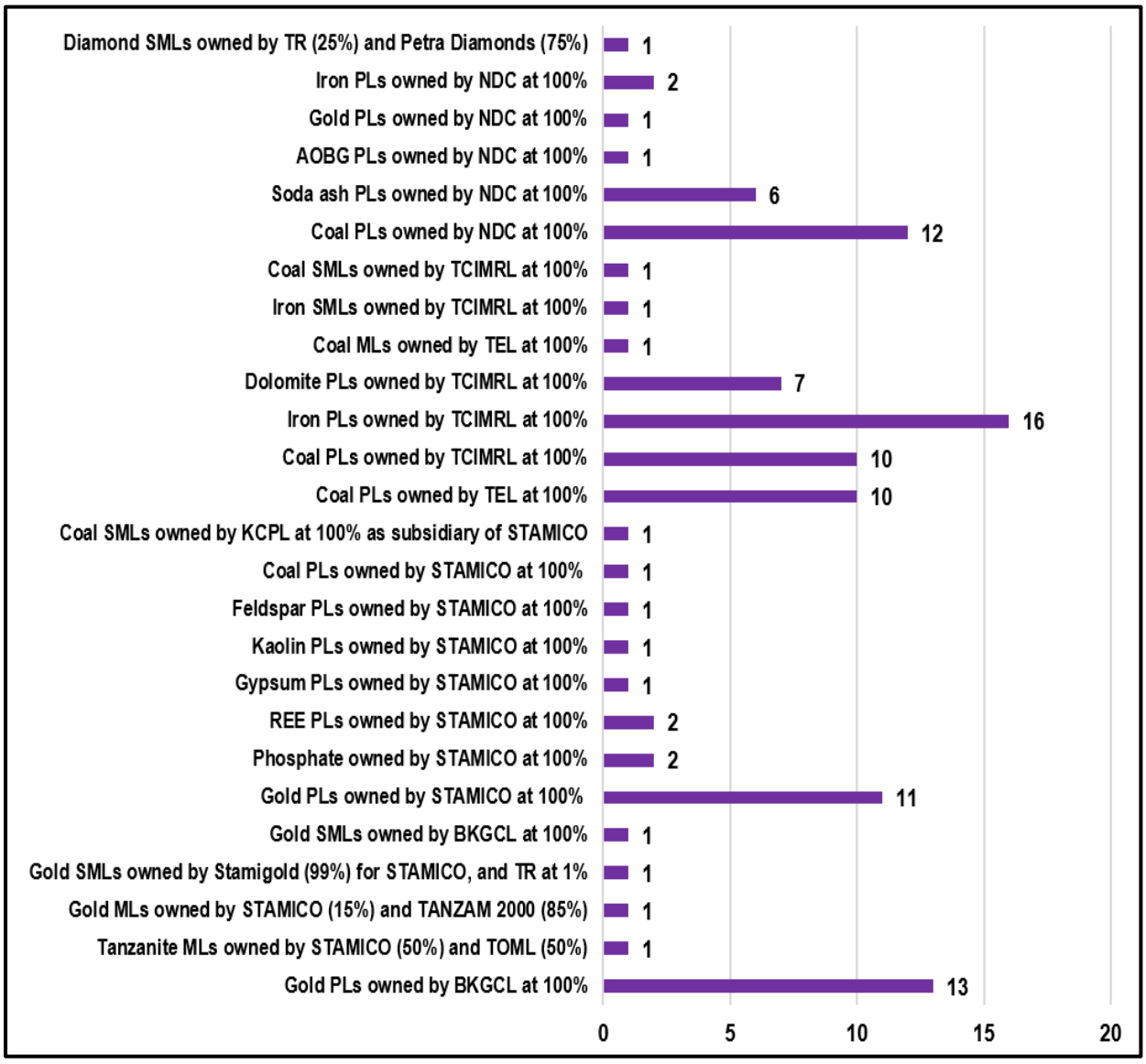

Figure 5.5 Mineral types, mineral rights and business ownerships by TZGT

5.3 Results of minimum allowable exploration expenditures in PLs

This section presents the analysis of minimum allowable exploration expenditures in PLs under STAMICO and NDC. Table 5.1 was generated from information presented in Table 4.1 and Appendix 8.9, whilst Table 5.2 was from information shown in Appendices 8.12 and 8.14.

Table 5.1 presents minimum allowable exploration expenditures in 32 PLs under STAMICO from 2011 to 2015. TANZAM 2000 contributed its capital share and the required share of STAMICO for the 13 PLs. The minimum required expenditure for these 13 PLs was estimated to be at least US$222,038 for exploration activities from 2011 to 2015 (Table 5.1). In addition, STAMICO was required to spend at least US$231,880 on its 19 wholly owned PLs for exploration activities. Thus, the total minimum allowable exploration expenditures on 32 PLs was approximately US$0.45 million.

Table 5.1 Minimum allowable exploration expenditures in PLs under STAMICO

Nature of PLs ownership from 2011 to 2015	Mineral rights description	No. of mineral rights	Percentage of ownership of STAMICO in mineral rights (%)	Exploration expenditures share of STAMICO (US$)	Exploration expenditures share of private investor		Minimum allowable exploration expenditures in PLs (US$)
					%	Amount (US$)	
Partial ownership	Gold PLs wholly owned by STAMICO and TANZAM 2000	13	45	99,917.10	55	122,120.90	222,038.00
	Subtotal	**13**		**99,917.10**		**122,120.90**	**222,038.00**
Wholly ownership	Gold PLs wholly owned by STAMICO	11	100	185,685.00	-	-	185,685.00
	Phosphate PLs wholly owned by STAMICO	2	100	3,875.00	-	-	3,875.00
	REE PLs wholly owned by STAMICO	2	100	13,275.00	-	-	13,275.00
	Gypsum PL wholly owned by STAMICO	1	100	1,980.00	-	-	1,980.00
	Kaolin PLs wholly owned by STAMICO	1	100	1,350.00	-	-	1,350.00
	Feldspar PL wholly owned by STAMICO	1	100	9,025.00	-	-	9,025.00
	Coal PLs wholly owned by STAMICO	1	100	16,690.00	-	-	16,690.00
	Subtotal	**19**	-	**231,880.00**	-	-	**231,880.00**
	Total	**32**	-	**331,797.10**	-	**122,120.90**	**453,918.00**

Table 5.2 depicts minimum allowable exploration expenditures on 57 PLs under NDC from 2011 to 2015. IETL and SHG were deemed to have spent at least US$764,330 for exploration activities on 37 PLs from 2011 to 2015. However, due to the carried equity role of the TZGT on 37 PLs, IETL and SHG had to contribute both US$189,880.50 (TZGT's equity capital share supposed to be contributed by NDC on behalf TZGT) and US$574,449.50 (Private sector investor's equity capital share specifically sourced from IETL and SHG themselves). As NDC was also deemed to have spent US$849,860 for exploration activities on its 20 wholly owned PLs, the total minimum allowable exploration expenditures in the 57 PLs was about US$1.61 million. The totals in Tables 5.1 and 5.2 add up to US$2.06 million as the total minimum allowable exploration expenditures from 2011 to 2015.

Table 5.2 Minimum allowable exploration expenditures in PLs under NDC

Nature of PLs ownership from 2011 to 2015	Mineral rights description	No. of mineral rights	Percentage of ownership of NDC in mineral rights (%)	Exploration expenditures share of NDC(US$)	Exploration expenditures share of private investor		Minimum allowable exploration expenditures in PLs (US$)
					%	Amount (US$)	
Partial ownership	Coal PLs partially owned by NDC and IETL	10	30	111,043.50	70	370,145.00	370,145.00
	Coal PLs partially owned by NDC and SHG	8	20	30,907.00	80	123,628.00	154,535.00
	Iron PLs partially owned by NDC and SHG	12	20	44,462.00	80	177,848.00	222,310.00
	Dolomite PLs partially owned by NDC and SHG	7	20	3,468.00	80	13,872.00	17,340.00
	Subtotal	**37**	-	**189,880.50**	-	**574,449.50**	**764,330.00**
Wholly ownership	Coal PLs wholly owned by NDC	11	100	298,820.00	-	-	298,820.00
	Soda Ash PLs wholly owned by NDC	5	100	455,700.00	-	-	455,700.00
	AOBG PLs wholly owned by NDC	1	100	74,580.00	-	-	74,580.00
	Gold PLs wholly owned by NDC	1	100	16,365.00	-	-	16,365.00
	Iron PLs wholly owned by NDC	2	100	4,395.00	-	-	4,395.00
Subtotal		**20**	-	**849,860.00**	-	-	**849,860.00**
Total		**57**	-	**1,039,740.50**	-	**574,449.50**	**1,614,190.00**

Figure 5.6 illustrates minimum exploration expenditures for held PLs from 2011 to 2015. The nature of contribution of minimum exploration expenditures included contributions from private sector companies and parastatals. Tables 5.1 and 5.2 were used to produce Figure 5.6.

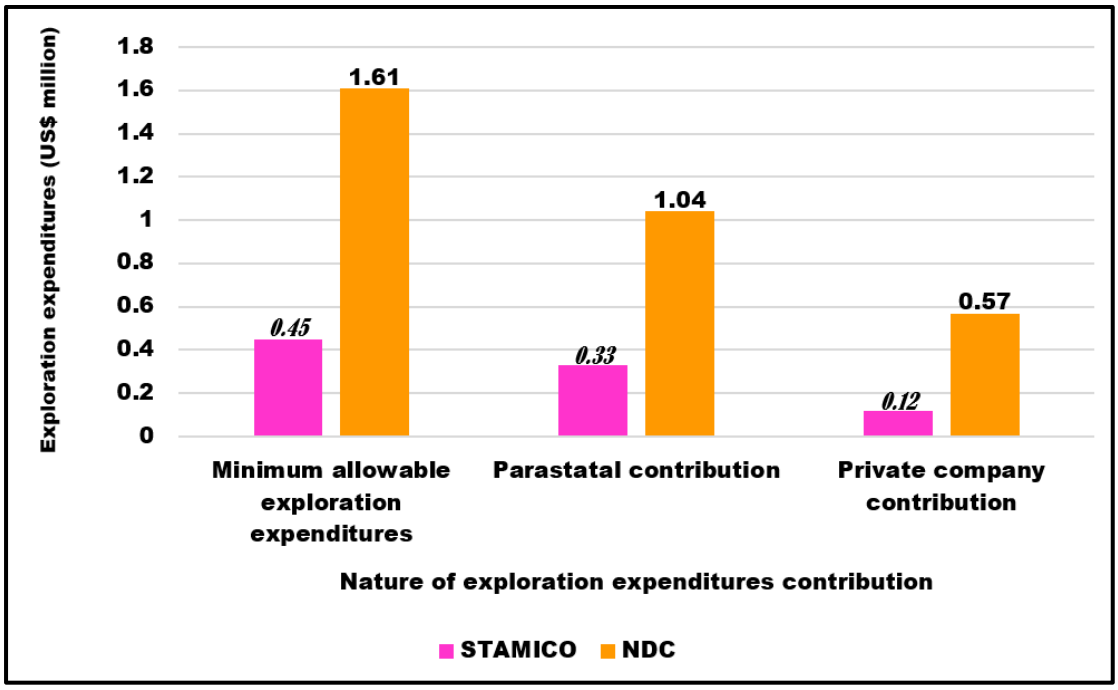

Figure 5.6 Minimum allowable exploration expenditures for held PLs

From Figure 5.6 it can be deduced that:

- From 2011 to 2015, the parastatals' contribution in the total minimum allowable exploration expenditures for held PLs was deemed to be US$1.37 million (66.5%) whilst the contribution from the private companies was US$0.69 million (33.5%); and
- Parastatals' contribution was higher than private companies' contribution by US$0.68 million (33%) which implied a need for government to assess the value for money on its coffers deemed to have been spent in exploration activities in the held PLs.

5.4 Analysis of receivable annual levies for licences

This section analyses the levies the Tanzanian government received for the period under study. The government received levies for licences issued under prospecting, mining and special licence categories.

5.4.1 Payable annual levies under STAMICO

Table 5.3 depicts payable annual levies from licences partially or wholly owned by NDC for the period 2011 to 2015. The total levies paid to government were approximately US$855,866. The contribution from wholly owned licences by STAMICO was about US$679,191 given the fact that majority of licences issued to STAMICO are wholly owned.

5.4.2 Payable annual levies under NDC

Table 5.4 displays payable annual levies from licences partially or wholly owned by NDC for the period 2011 to 2015. The total levies paid to government were approximately US$595,503. The contribution from private sector investors namely IETL and SHGL was about US$374,254. This was attributed to many partially owned mineral rights issued to NDC having higher shareholding ownerships than private sector investors.

Table 5.3 Payable annual levies from licences under STAMICO

Mineral rights description	No. of mineral rights	Percentage of ownership of STAMICO in mineral rights (%)	Payable annual levies share of STAMICO (US$)	Payable annual levies share of private or other TZGT partner		Payable annual levies (US$)
				%	Amount (US$)	
Partially owned licences						
Gold PLs partially owned by STAMICO and TANZAM 2000	13	45	9,873.765	55	12,067.935	21,941.70
Tanzanite ML (ML 490/2013) partially owned by STAMICO and TOML	1	50	22,880.00	50	22,880.00	45,600.00
Gold ML (ML 496/2013) partially owned by STAMICO and TANZAM 2000	1	15	8,919.00	85	50,541.00	59,460.00
Gold SML (SML 157/2003) partially owned by STAMICO and TR	1	99	301,514.40	1	3,045.60	304,560.00
Gold SML (SML 04/92) partially owned by STAMICO and TANZAM 2000	1	45	72,180.00	55	88,220.00	160,400.00
Wholly owned licences						
Gold PL wholly owned by STAMICO	11	100	24,265.30	N/A	0.00	24,265.30
Phosphates PLs wholly owned by STAMICO	2	100	775.00	N/A	0.00	775.00
REE PLs wholly owned by STAMICO	2	100	2,655.00	N/A	0.00	2,655.00
Gypsum PL wholly owned by STAMICO	1	100	396.00	N/A	0.00	396.00
Kaolin PLs wholly owned by STAMICO	1	100	270.00	N/A	0.00	270.00
Feldspar PL wholly owned by STAMICO	1	100	1,805.00	N/A	0.00	1,805.00
Coal PLs wholly owned by STAMICO	1	100	3,338.00	N/A	0.00	3,338.00
Coal SML (SML 233/2005) wholly owned by STAMICO	1	100	230,400.00	N/A	0.00	230,400.00
Grand total	**37**	N/A	**679,191.465**	N/A	**176,674.535**	**855,866.00**

Table 5.4 Payable annual levies from licences under NDC

Mineral rights description	No. of mineral rights	Percentage of ownership of NDC in mineral rights (%)	Payable annual levies share of NDC (US$)	Payable annual levies share of private investor		Payable annual levies (US$)
				%	Amount (US$)	
Partially owned licences						
10 Coal PLs partially owned by NDC and IETL	10	30	13,649.475	70	45,498.25	45,498.25
8 Coal PLs partially owned by NDC and SHG	8	20	3,928.42	80	15,713.68	19,642.10
12 Iron PLs partially owned by NDC and SHG	12	20	4,151.35	80	16,605.40	20,756.75
7 Dolomite PLs partially owned by NDC and SHG	7	20	693.60	80	2,774.40	3,468.00
1 Coal ML (ML 439/2011) partially owned by NDC and IETL	1	30	35,928.00	70	83,832.00	119,760.00
1 Iron ore SML (SML 533/2014) partially owned by NDC and SHG	1	20	30,410.00	80	121,640.00	152,050.00
1 Coal SML (SML 534/2014) partially owned by NDC and SHG	1	20	25,460.00	80	101,840.00	127,300.00
Wholly owned licences						
11 Coal PLs wholly owned by NDC	11	100	31,777.10	-	-	31,777.10
5 Soda Ash PLs wholly owned by NDC	5	100	56,183.40	-	-	56,183.40
1 AOBG PLs wholly owned by NDC	1	100	14,916.00	-	-	14,916.00
1 Gold PLs wholly owned by NDC	1	100	3,273.00	-	-	3,273.00
2 Iron PLs wholly owned by NDC	2	100	879.00	-	-	879.00
Grand total	**60**	**-**	**221,249.345**	**-**	**374,254.255**	**595,503.60**

5.4.3 Payable annual levies under TR

The total receivable annual levies by the government for mineral rights partially owned by TR from 2011 to 2015 were US$306,000 (Table 5.5).

Table 5.5 Payable annual levies from licences under TR

Mineral rights description	No. of mineral rights	Percentage of ownership of TR in the mineral right (%)	Annual levies share of TR (US$)	Annual levies share of private partner		Payable annual levies (US$)
				%	Amount (US$)	
1 Diamond SML (SML 216/2005) partially owned by TR and Petra Diamonds Limited	1	25	76,500.00	75	229,500.00	306,000.00
Grand Total	**1**	**25**	**76,500.00**	**75**	**229,500.00**	**306,000.00**

Adding together grand total values of payable annual levies from Tables 5.3, 5.4 and 5.5, the total annual levies that were payable to the government from 2011 to 2015 was approximately US$1.76 million. Figure 5.7 presents payable annual levies for held licences by STAMICO, NDC and TR to the TZGT from 2011 to 2015.

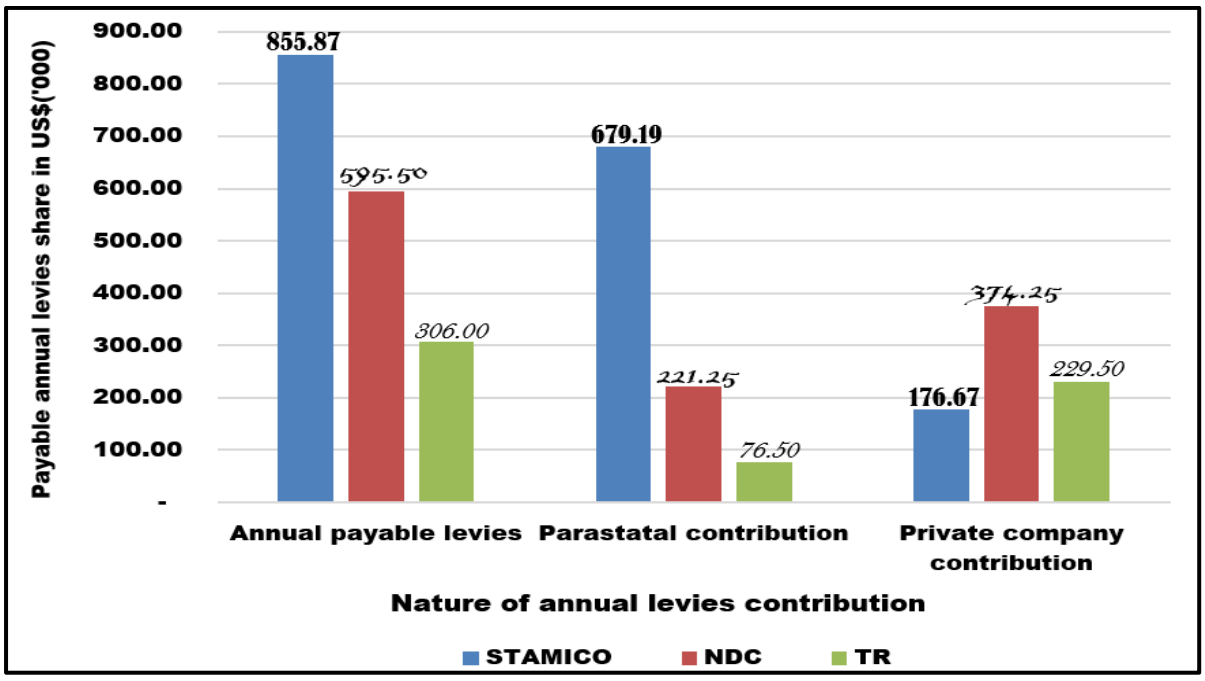

Figure 5.7 Payable annual levies for held licences

From Figure 5.7, the annual payable levies share of STAMICO from 2011 to 2015 on its wholly and partially owned mineral rights exceeded the ones of NDC's and TR'S mineral rights. This was because STAMICO owned more MLs and SMLs than NDC and TR with greater ownership shares (Table 5.3, Table 5.4 and Table 5.5). It should be underscored here that the annual levy rates of MLs and SMLs expressed in US$/km^2/year (Appendix 8.5) are far much higher than in PLs which caused higher payable annual levies on mineral rights under STAMICO at the tune of approximately US$0.9 million (Figure 5.7).

Figure 5.7 further demonstrates that unlike STAMICO, which had more shares of ownership in mineral rights than NDC and TR, a rationale that mostly necessitated its self-commitment in settling of payable annual levies, NDC relied on the private sector investors in settling of the payable annual levies. However, on the further analysis of the Figure 5.7, the deemed expected parastatals' contribution of payable annual levies on TZGT partially and wholly owned PLs outdid the private sector investors' contribution.

5.5 Analysis of forms of the Tanzanian government equity role

5.5.1 Role of government in prospecting licences

The government plays a role in the prospecting licences through partial or wholly ownership through parastatals such as STAMICO and NDC. There are two forms of ownership exercised by the government, that is, carried and paid equity participation. The parastatals held 56 and 41 licences under paid equity and carried equity participation roles, respectively. Table 5.6 shows that STAMICO had 19 PLs and 13 PLs under paid equity and carried equity, respectively. Whereas NDC exercised more carried equity participation than paid equity at 43 PLs and 22 PLs, respectively. Therefore, the government carries more business risk in the investments under STAMICO compared to those under NDC.

Table 5.6 Forms of equity role of government in prospecting

Category/Aspect	PLs partially owned by STAMICO	PLs wholly owned by STAMICO	PLs partially owned by NDC	PLs wholly owned by NDC
	13 PLs	19 PLs	43 PLs	22 PLs
Government (TZGT) role	Carried equity	Paid equity	Carried equity	Paid equity
Main operator	TANZAM 2000	STAMICO	IETL in 10 coal PLs and SHG in 10 coal, 16 iron and 7 dolomite PLs	NDC
Overseer of TZGT interests	STAMICO	STAMICO	NDC	NDC
PLs ownership	13 gold PLs owned by BGCL	19 PLs owned by STAMICO	10 coal PLs owned by TEL	22 PLs owned by NDC
			10 coal PLs owned by TCIMRL	
			16 iron PLs owned by TCIMRL	
			10 dolomite PLs owned by TCIMRL	
PLs ownership shareholding	TANZAM 2000 (55%) and STAMICO (45%) in 13 goal PLs	STAMICO	IETL (70%) and NDC (30%) in 10 coal PLs	NDC
			SHG (80%) and NDC (20%) in 10 coal PLs	
			SHG (80%) and NDC (20%) in 16 iron PLs	
			SHG (80%) and NDC (20%) in 7 dolomite PLs	
Receivable profits (dividends) for TZGT interests (inclusive of mineral resources)	45% of total profits from BGCL through a sale of 13 gold PLs	100% total profits by STAMICO through a sale of 19 PLs	30% of total profits from TEL through a sale of 10 coal PLs	100% total profits by NDC through a sale of 22 PLs
			20% of total profits from TCIMRL through a sale of 10 coal PLs	
			20% of total profits from TCIMRL through a sale of 16 Iron PLs and 7 dolomite PLs.	

5.5.2 Role of government in medium scale mining licences

STAMICO and NDC are involved in carried equity in three medium scale mines as indicated in Table 5.7. The government did not earn any dividends from these mines under the period of the research study. This was may be due to a non- going concern situation experienced by STAMICO and at the same time, some of its mines were not in operation (Controller and Auditor General, 2015). STAMICO and NDC may not have paid any amount to the government due to type of equity engagement involved where NDC could only receive any payments from the mine after the foregone dividends have covered the amount initially invested by the private partner to cover the parastatals ownership costs.

5.5.3 Role of government in large scale mining licences

The government involved in large scale mining through exercising paid and carried equity roles (Tables 5.8 and 5.9). The paid equity role is through SBM and KCM while carried equity is through BKGM, MCM, LIOM and WDM. The parastatals tasked with heading and protecting the role of government are STAMICO, NDC and TR (the government agent). Tables 5.8 and 5.9 show that the government did not receive any earnings from these roles. This may be alluded to the fact that some operations can only begin after certain activities have occurred, such as constructions of Mchuchuma's coal mine, thermal power station and a transmission line from Mchuchuma to Liganga.

Table 5.7 Forms of equity role of government in medium scale mining

Category/Aspect	STAMICO		NDC
	Merelani Tanzanite Mine (MTM)	**Kigosi Gold Mine (KGM)**	**Ngaka Coal Mine (NCM)**
Government (TZGT) role	Carried equity	Carried equity	Carried equity
Mineral reserves	100 million carets of tanzanite	6.30 million tonnes of gold at a grade 0.3g/t	423 million tonnes of coal
Date licence issued	20 June 2013	11 October 2013	18 August 2011
Expiry date	19 June 2023	10 October 2023	17 August 2021
Mine ownership	Mine owned by partnership of TOML and STAMICO	Mine owned by partnership of TANZAM 2000 and STAMICO	Mine owned by Tancoal Energy Limited (TEL), a private JV company
Mine ownership shareholding	TOML (50%) and STAMICO (50%)	TANZAM 2000 (85%) and STAMICO (15%)	IETL (70%) and NDC (30%)
Linkages of shareholders	TOML is a wholly owned subsidiary of Sky Associates Group Limited (SAGL) whilst STAMICO is a parastatal in TZGT	TANZAM 2000 is a wholly owned subsidiary of Tanzanian Royalty Exploration Corporation	IETL is a wholly owned subsidiary of Intra Energy Corporation (IEC)
Mine operator	TOML	TANZAM 2000	IETL
TZGT interests	50% of total profits (dividends) payable to TZGT via STAMICO	15% of total profits (dividends) payable to TZGT via STAMICO	30% of total profits (dividends) payable to TZGT via NDC
TZGT contribution to the project	TZGT absolved from making contribution undertaken by TOML on its behalf	TZGT absolved from making contribution undertaken by TANZAM 2000 on its behalf	TZGT absolved from making contribution undertaken by IETL on its behalf
Level of TZGT equity participation in the mine	At 50% carried interest by TOML overseen by STAMICO	At 15% carried interest by TANZAM 2000 overseen by STAMICO	At 30% carried interests by IETL overseen by NDC
Mode of recovery of carried government contribution by the contributor (a private sector partner with TZGT)	Through STAMICO's foregone dividends with interests during profits making times	Through STAMICO's foregone dividends with interests during profits making times	Through NDC foregone dividends with interests during profits making times
Recent earned profits or received dividends by TZGT	None	None	None
Status of mining operations	Ongoing	Operations not undertaken awaiting written consent from Minister for Natural Resources and Tourism	Ongoing

Table 5.8 Forms of equity role of government in large scale mining: STAMICO and TR

Category/Aspect	STAMICO		
	Biharamulo Stamigold Mine (SBM)	**Buckreef Gold Mine (BKGM)**	**Kiwira Coal Mine (KCM)**
Government (TZGT) role	Paid equity	Carried equity	Paid equity
Mineral reserves	200,000 troy ounces of gold	60 million tonnes of gold with average 1.26 g/t Au	35.4 million tonnes of coal
Date licence issued	3 November 2003	12 June 2000	17 November 2005
Expiry date	2 November 2028	11 June 2027	16 November 2030
Mine ownership	Mine is owned by partnership of Stamigold Company Ltd and Treasury Registrar	Mine is owned by Buckreef Gold Company Ltd (BKGCL), a private JV company	Mine is owned by Kiwira Coal Power Ltd (KCPL), a subsidiary sole commercial entity of STAMICO
Mine ownership shareholding	Stamigold Company Ltd (99%) and TR (1%)	TANZAM 2000 (55%) and STAMICO (45%)	KCPL (100%)
Linkages of shareholders	Stamigold Company Ltd is a wholly owned subsidiary of STAMICO	TANZAM 2000 is a wholly owned subsidiary of Tanzanian Royalty Exploration Corporation	KCPL is a wholly owned subsidiary of STAMICO
Mine operator	Stamigold Company Ltd	TANZAM 2000	KCPL
TZGT interests	99% and 1% of total profits (dividends) payable to TZGT via STAMICO and TR	45% of total profits (dividends) payable to TZGT via STAMICO	100% total profits earned by TZGT through STAMICO via KCPL
TZGT contribution to the project	Is met by Stamigold	TANZAM 2000 contributed on behalf of the government.	Is met by KCPL
Level of TZGT equity role in the mine	100%	45% carried interest by TANZAM 2000 overseen by STAMICO	100%
Mode of recovery of carried government contribution by the contributor (a private sector partner with TZGT)	Not applicable	Through STAMICO's foregone dividends with interests during profits making times	Not applicable
Recent earned profits or received dividends by TZGT	None	None	None
Status of mining operations	Ongoing	Ongoing	Operations not yet started awaiting tendering for re-development of the mine and 6MW Power Station within the mine

Table 5.9 Forms of equity role of government in large scale mining: NDC and TR

Category/Aspect	NDC		TR
	Mchuchuma Coal Mine (MCM)	**Liganga Iron ore Mine (LIOM)**	**Mwadui Diamond Mine (WDM)**
Government (TZGT) role	Carried equity participation	Carried equity participation	Carried equity participation
Mineral reserves	428 million tonnes of coal	126 million tonnes of coal	40.39 million carets of diamond
Date licence issued	9 October 2014	9 October 2014	25 May 2005
Expiry date	8 October 2039	8 October 2039	24 May 2030
Mine ownership	Mine is owned by Tanzania China International Mineral Resources Ltd (TCIMRL), a private JV company	Mine is owned by Tanzania China International Mineral Resources Ltd (TCIMRL), a private JV company	Mine is owned by a partnership of Petra Diamonds Ltd and Treasury Registrar
Mine ownership shareholding	SHG (80%) and NDC (20%)	SHG (80%) and NDC (20%)	Petra Diamonds Ltd (75%) and TR (25%)
Linkages of shareholders	SHG is a wholly owned subsidiary of Honda Group of China		None
Mine operator	SHG	SHG	Petra Diamonds Ltd
TZGT interests	20% of total profits (dividends) payable to TZGT via NDC		25% of total profits via TR
TZGT contribution to the project	TZGT absolved from making contribution undertaken by SHG on its behalf	TZGT absolved from making contribution undertaken by SHG on its behalf	TZGT absolved from making contribution undertaken by Petra Diamonds on its behalf
Level of TZGT equity role in the mine	20% carried interest by SHG overseen by NDC	20% carried interest by SHG overseen by NDC	25% carried interest by Petra Diamonds overseen by TR
Mode of recovery of carried government contribution by the contributor (a private sector partner with TZGT)	Foregone dividends with interests during profits making times		
Recent earned profits or received dividends by TZGT	None	None	None
Status of mining operations	Operations to start after mine construction going on is completed	Operations to start after constructions	Ongoing

5.6 Summary of the forms of government equity role in the minerals sector

Table 5.10 summarises results of forms of TZGT equity role in prospecting, medium and large scale mining. The government did not participate in mining equity role through the application of free carry equity principles. This was attributed by failure of parties in negotiations (TZGT Vs owners of each mining project) to reach consensus on FCs which also impeded signing of MDAs (Section 4.4.3).

Table 5.10 Forms of TZGT equity role in use in Tanzania

Area of participation	Form of TZGT equity role	Prospecting Licences (PLs) and Mining projects (mines) exercising respective forms of TZGT equity role			Total
		STAMICO	NDC	TR	
Prospecting	Carried	13 PLs	43 PLs	None	56 PLs
	Paid	19 PLs	22 PLs	None	41 PLs
Medium scale mining	Carried	MTM and KGM	NCM	None	3 medium scale mines
Large scale mining	Carried	BKGM,	LIOM and MCM	WDM	4 large scale mines
	Paid	KCM and SBM	None	None	2 large scale mines
	Free carry	In 2014, TZGT planned to apply free carry equity role in NGRP and MRUP pending meeting first of agreeable FCIs (through negotiations between TZGT and projects owners) and signing of MDAs. Negotiations for FCIs between parties started from 2014 to 2015 where in 2015 they were halted for being futile.			

5.7 Results of benefits of government equity role in prospecting

In this research study, total payable annual levies for 89 PLs partially and wholly owned by STAMICO and NDC are the financial benefits of the TZGT equity role in prospecting. Table 5.11 depicts a derivation of financial benefits of the TZGT equity role in prospecting. The total derived benefits amounted to approximately US$252,000.

Table 5.11 Derivation of financial benefits of the TZGT equity role in prospecting

Payable annual levies retrieved	Category of financial benefit from 2011 to 2015	Amount (US$)
Table 5.4	Payable annual levies from 13 PLs partially owned by STAMICO	21,941.70
	Payable annual levies from 19 PLs wholly owned by STAMICO	33,504.30
Table 5.5	Payable annual levies from 37 PLs partially owned by NDC	89,365.10
	Payable annual levies from 20 PLs wholly owned by NDC	107, 028.50
	Total	**251,839.60**

In this study, both TZGT carried and paid equity roles on prospecting activities through STAMICO and NDC were analysed to look into non-financial benefits they generate. Performances were analysed vis-a-vis three set of non-financial benefit indicators in prospecting namely geo-knowledge, government confidence in undertaking mining and national capacity building. It is observed from Table 5.12 that:

- Geo-knowledge, government confidence in undertaking mining and national capacity building fairly improved through carried equity role of STAMICO and both carried and paid roles in NDC; and
- Geo-knowledge, government confidence in undertaking mining and national capacity building negligibly improved through paid equity role of STAMICO.

Table 5.12 Non-financial benefits of TZGT equity role in prospecting

Item	STAMICO		NDC	
	Carried equity role	Paid equity role	Carried equity role	Paid equity role
Geo-knowledge	Fairly improved	Negligibly improved	Fairly improved	Fairly improved
Government confidence in undertaking mining	Fairly improved	Negligibly improved	Fairly improved	Fairly improved
National capacity building	Fairly improved	Negligibly improved	Fairly improved	Fairly improved

Results of the non-financial benefits of the TZGT equity role in medium and large scale mining were compiled in Appendix 8.17 using information presented in Tables 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 4.9 and 4.10 respectively. Appendix 8.17 presents degree of performances of each mine on areas of non-financial benefits. Areas of non-financial benefits include greater control of the minerals sector, employment equity, human resource development, procurement and enterprise development and community development.

There were two major shortcomings faced by the TZGT equity role in prospecting, medium and large scale mining. Firstly, STAMICO had been in financial constraints since 2013 through 2014 for it being not in a going concern situation (Table 5.13). In this case as highlighted by Controller and Auditor General (2015), STAMICO had been having a recurrence of losses, for instance losses of approximately US$450,293 and US$632,452 in 2013 and 2014, respectively.

Table 5.13 Features of income statement of STAMICO for 6 months ended June 2014

Financial year	**2014 (US$)**	**2013 (US$)**
Income		
Total Income	1,074,067.87	1,363,418.24
Expenditure		
Total Expenditure	1,572,453.44	2,484,822.74
Net (Loss)/Profit for before tax	-498,385.57	-1,121,404.51
Deferred taxation	0.00	671,110.70
Net (Loss)/Profit after tax	-498,385.57	- 450,293.81
Total Net (Loss)/Profit after tax for 18 months		**-948,679.38**
Net (Loss)/Profit after tax per month		**-52,704.41**
Average Net (Loss)/Profit after tax per year		**-632,452.92**

Source: Controller and Auditor General (2015)

Lastly, the secrecy in agreements or contracts in partnerships, private JV companies and mineral developments between the TZGT and the private sector investors. The secretive nature of business structures than in public single or JV companies is another cause of the shortfall. Secrecy attributed to non-transparency and unaccountability in the prospecting, medium and large scale mining projects under TZGT equity role. In addition, non-transparency and unaccountability in these projects risked TZGT entering unfair and/or objectionable agreements or contracts.

Public single or JV companies are supposed to release public certified copies of their annual financial statements with the Registrar of Companies (Correia *et al*, 1993; Marx *et al*, 1999). In addition, they are obliged to furnish their shareholders with mid-yearly interim reports and audited annual financial statements (Correia *et al*, 1993; Marx *et al*, 1999). All these two

requirements for public single and JV companies are the reflection of how transparent and accountable they are as compared to the aforementioned business ownerships.

5.8 Chapter summary

This chapter has presented the results, analysis and challenges faced by TZGT equity role strategy. This means the results of the mineral rights, minimum allowable expenditures, receivable expenditures, etc., sought in the research together with shortfalls were illustrated. In this chapter, a number of challenges faced by the strategy were identified and their causes discussed. The implications of these shortfalls and recommendations for dealing with them are covered in Chapter 6.

It was important to undertake computations of minimum allowable exploration expenditures on PLs partially and wholly owned by STAMICO and NDC in order to understand the cost effectiveness of the two parastatals in meeting such costs in paid and carried equity roles on behalf of the TZGT. As highlighted in Appendices 8.9 and 8.12, Table 4.1 and Figure 4.1, exploration expenditures on wholly owned PLs by STAMICO and NDC inflicted more costs to the TZGT than on partially owned PLs. Non-strategic and incautious government spending on exploration activities of wholly owned PLs that results into non-improvement of geo-knowledge, government confidence in undertaking mining and national capacity building termed as non-financial benefits should be avoided for financial benefits realisation (Table 5.12).

A comparison of costs (exploration expenditures and payable annual levies) against financial benefits generated from mineral rights from 2006 to 2015 based on collected data is shown in Table 5.14. It is worth noting here that, Tables 4.2-4.10, 5.1 & 5.2 and 5.11 were used to produce Table 5.14. Based on Table 5.14, the financial benefits to the TZGT at the period 2006 to 2015 on mineral rights was inadequate for TZGT's sporadic receipt of corporate income taxes, mining royalty and other taxes. Furthermore, the Tanzania government could not receive any sort of profits or interests (dividends) from its wholly and partially owned mines (Tables 5.7, 5.8 and 5.9) undermining its equity role strategy in making financial benefits out of the projects.

Table 5.14 Summary of financial benefits of the government from 2006 to 2015

Mineral right	Costs incurred in mineral rights			Financial benefits from mineral rights					
	Minimum allowable exploration expenditures (US$ million)	Payable annual levies (US$ million)	Total costs (US$ million)	Receivable annual levies (US$ million)	Corporate income tax (US$ million)	Mining Royalty (US$ million)	Receivable profits or interests (dividends) through equity roles	Other taxes (US$ million)	Total financial benefits (US$ million)
13 PLs partially owned by STAMICO	0.22	0.02	0.24	0.02	-	-	-	-	0.02
19 PLs wholly owned by STAMICO	0.23	0.03	0.26	0.03	-	-	-	-	0.03
37 PLs partially owned by NDC	0.76	0.09	0.85	0.09	-	-	-	-	0.09
20 PLs wholly owned by NDC	0.85	0.11	0.96	0.11	-	-	-	-	0.11
Subtotal US$)	**2.06**	**0.25**	**2.31**	**0.25**	**-**	**-**	**-**	**-**	**0.25**
ML 490/2013 of MTM	-	0.05	0.05	0.05	2.60	1.38	-	8.64	12.67
ML 496/2013 of KGM	-	0.06	0.06	0.06	-	-	-	-	0.06
ML 439/2011 of NCM	-	0.12	0.12	0.12	-	1.11	-	-	1.23
Subtotal US$)	**-**	**0.23**	**0.23**	**0.23**	**2.60**	**2.49**	**-**	**8.64**	**13.96**
SML 04/92 of BKGM	-	0.16	0.16	0.16	-	-	-	-	0.16
SML 533/2014 of LIOM	-	0.15	0.15	0.15	-	-	-	-	0.15
SML 534/2014 of MCM	-	0.13	0.13	0.13	-	-	-	-	0.13
SML 216/2005 of WDM	-	0.31	0.31	0.31	0.11	9.44	-	25.92	35.78
SML 233/2005 of KCM	-	0.23	0.23	0.23	-	-	-	-	0.23
SML 157/ 2003 of SBM	-	0.30	0.30	0.30	-	0.82	-	1.61	2.73
Subtotal US$)	**-**	**1.28**	**1.28**	**1.28**	**0.11**	**10.26**	**-**	**27.53**	**39.18**
Total (US$)	**2.06**	**1.76**	**3.82**	**1.76**	**2.71**	**12.75**	**-**	**36.17**	**53.39**

Based on data collected and analysed in this research study, the financial benefits stood at US$53.39 million against exploration costs of US$2.06 million (for all PLs) and payable annual levies of US$1.76 million (for all mineral rights) respectively (Table 5.14). In economics context, minimum allowable exploration expenditures and payable annual levies would be termed as operating costs. These two costs may be incorporated in the income statements together with mineral sales revenues, cost of minerals sold, other operating costs/expenses, depreciation expenses, etc. Then, projects' net profits before and after taxes would be determined for companies' payments of corporate income taxes to the government and dividends to the shareholders respectively (Correia *et al*, 1993).

In addition, as seen in Section 5.7 and Table 2.5, there are more advantages for the government to collaborate in business with the private sector investors through public single or JV companies rather than in partnerships and private JV companies. Due to the complexes underlying business ownerships revealed in this study, it is worth noting that government shareholding is just one side of a complex commercial structure in business ownerships.

Skills to be part of the auditing of the value chain is important to be satisfied with how the companies get to the profits/losses before sharing.

On the area of transfer pricing, whilst the author accepts that transfer pricing plays a role in reduced financial benefits to governments as mentioned in Tables 1.1, 2.3 and Section 2.5.2, however, due to lack of information as highlighted in Section 1.5, was not interrogated.

However, there is a need for future work for the TZGT as a sole commercial entity or as itself with private sector investors collaborating in prospecting or mining projects to undertake comprehensive routine projects' financial valuations. These would help in divulging appropriate compensations and/or financial benefits the TZGT is supposed to enjoy during projects' life spans.

6 CONCLUSIONS AND RECOMMENDANTIONS

6.1 Introduction

This research study entitled “Evaluation of government equity participation in the minerals sector: A case study of Tanzania from 1996 to 2015” was carried out. Based on the problem statement and research question, tackling of four research objectives took place in the line of answering the research question.

6.2 Conclusions

This section outlines conclusions on areas of equity role of Tanzanian government, financial benefits, non-financial benefits and challenges faced by the equity role in the minerals sector. These conclusions reflect objectives of the study vis-a-vis the research question. Later Section 6.3 provides the way forward through recommendations for addressing conclusions and challenges highlighted in this section.

6.2.1 Equity role of Tanzanian government in minerals sector

Results in this research show that the Tanzanian government’s equity role from 1996 to 2015 in PLs, medium and large scale mines involving carried and paid forms (Table 5.10) was counterproductive. This was due to non-transparency and unaccountability in agreements in business ownerships in which government and private sector investors pursued (Section 5.7). Also sole commercial entities, partnerships and private JV companies business ownerships adopted in TZGT equity role are secretive in nature that too causes their counter productivity.

6.2.2 Financial benefits

Results indicate that Tanzanian government inadequately realised financial benefits through its equity role in the prospecting, medium and large scale mining. Inadequacy in financial benefits was characterised by unreliable payments of corporate income tax, mining royalty and other taxes by the mining companies (Table 5.14). Another reason alluding to this problem was the non-realisation of profits and receipt of dividends by government from mining

enterprises in which the government is a sole commercial entity (via parastatals) or a shareholder with the private sector investors (Tables 5.7, 5.8 and 5.9).

6.2.3 Non-financial benefits

Results indicate that Tanzanian government fairly realised non-financial benefits through its equity role in the prospecting, medium and large scale mining (Table 5.12 and Appendix 8.17). Areas of non-financial benefits were TZGT greater control of the minerals sector, employment equity, human resource development, procurement and enterprise development as well as community development. However, in Tanzania there are no solid mechanisms and frameworks for overseeing of non-financial benefits (Ramdoo, 2016; Columbia Center on Sustainable Investment, nd.).

6.2.4 Challenges faced by Tanzanian government equity role

More importantly to note is that TZGT equity participation in prospecting, medium and large scale mining from 1996 to 2015 met with a number of challenges (shortfalls and shortcomings). Amongst challenges, include:

- STAMICO's financial constraints caused by a non-going concern situation of the company itself (Section 5.7);
- Secrecy in agreements or contracts in partnerships, private JV companies and mineral developments between the TZGT and the private sector investors. This attributed to non-transparency and unaccountability risking TZGT entering unfair and/or objectionable agreements or contracts (Section 5.7);
- A query on lower mining royalty payments by Merelani Tanzanite Mine (MTM) in 2013 (Figure 4.4); and
- Lack of some mining companies to unveil their mines' status information into public domains (Tables 4.4 and 4.5).

The above findings indicate that there was ineffective equity role performance of the Tanzanian government in prospecting, medium and large scale mining. Section 6.3 outlines

recommendations as a way forward for improving the government effective performance in equity role.

In this research study, the research question was *"How effectively has the equity role performance of the TZGT in prospecting, medium and large scale mining been since the enactment of Mining Act of 2010?"* Considering the achievement in the objectives of the study, it is fairly speaking that the research question was adequately answered.

6.3 Recommendations

It is recommended that the following issues be considered for improving the government's effective performance in the equity role strategy.

- Government to engage in public single or JV companies registered in DSE when executing equity role for transparency and accountability than in sole commercial entities, partnerships and private JV companies business ownerships;
- Government to review Mining Act of 2010 and Regulations of 2010 to allow government incorporation of Parliament in the approval, monitoring, implementation or review of partnerships, private JV companies and minerals development agreements or contracts;
- Government to review Mining Act of 2010 to include provisions of solid mechanisms and frameworks for all forms of government equity role, assessing, and measuring performance in equity role;
- Government to review Mining Act of 2010 and Regulations of 2010 to include frameworks for derivation, validation and auditing of operating and capital costs used in mining projects;
- Government to review Tax Act of 2008 and Companies Act of 2002 to include frameworks for computation of corporate income taxes in mines and distribution of dividends to shareholders respectively (Ministry of Finance and Planning, 2008; Ministry of Industry and Trade, 2002);
- TZGT to revisit incentives it offers to mining investors serving as tax shields to have a 50/50 win situation (Appendix 8.6);

- Government to formulate legislations with solid mechanisms and frameworks to oversee non-financial benefits in the country;
- Government through MEM to immediately track the aforementioned queried tanzanite sales in 2013. In case there was any mining royalty evasion, MD should recover it immediately; (Figure 4.4);
- Government to make interventions into STAMICO's operations with workable strategic solutions in rescuing the parastatal from dwindling; and (Section 5.7);
- Government to amend Mining of 2010 and Mining Regulations of 2010 to include provisions tasking all mining companies having valid mineral rights to be annually submitting to MEM, sustainability, financial and accounts reports. It is suggested also that the mining companies submit the same to the Registrar of Companies and to the DSE for the listed ones (Ministry of Industry and Trade, 2002; Dar es Salaam Stock Exchange, 2016).

6.4 Recommendations for future work

Carrying out of this research had raised a number of issues that would attract research work. In this study however, areas for future work proposed include:

- Determining if using a fixed rate for FCIs will be beneficial;
- Developing frameworks or guidelines for establishing private and public JV mining companies between government and private sector partners;
- How to improve reporting compliance by mining parastatals and companies in Tanzania in relation to internationally accepted standards; and
- Conducting financial valuations on mining projects under TZGT equity role to divulge appropriate compensations and/or financial benefits in which the TZGT is supposed to enjoy during the projects' life spans.

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8 APPENDICES

8.1 PLs partially and wholly owned by STAMICO and NDC

8.1.1 PLs partially owned by STAMICO from 1996 to 2015

Licence No.	Size (Km^2)	Mineral	PL Locality		Validity of licence		% of ownership in the licence		Private Partner's name	Private JV company holding licence (100%)
			District	Region	Date issued	Expiry date	STAMICO	Private Partner		
PL 6427/2010	2.1	Gold	Geita	Geita	21.06.2010	20.06.2018	45	55	TANZAM 2000	BKGCL
PL 6428/2010	2.99	Gold	Geita	Geita	21.06.2010	20.06.2018	45	55	TANZAM 2000	BKGCL
PL 6429/2010	19.99	Gold	Geita	Geita	21.06.2010	20.06.2018	45	55	TANZAM 2000	BKGCL
PL 6430/2010	8.9	Gold	Geita	Geita	21.06.2010	20.06.2018	45	55	TANZAM 2000	BKGCL
PL 6431/2010	2.67	Gold	Geita	Geita	21.06.2010	20.06.2018	45	55	TANZAM 2000	BKGCL
PL 6432/2010	1.97	Gold	Geita	Geita	21.06.2010	20.06.2018	45	55	TANZAM 2000	BKGCL
PL 6544/2010	2.58	Gold	Geita	Geita	12.07.2010	11.07.2018	45	55	TANZAM 2000	BKGCL
PL 6545/2010	5.28	Gold	Geita	Geita	12.07.2010	11.07.2018	45	55	TANZAM 2000	BKGCL
PL 6546/2010	17.41	Gold	Geita	Geita	12.07.2010	11.07.2018	45	55	TANZAM 2000	BKGCL
PL 6547/2010	5.29	Gold	Geita	Geita	12.07.2010	11.07.2018	45	55	TANZAM 2000	BKGCL
PL 6548/2010	1.89	Gold	Geita	Geita	12.07.2010	11.07.2018	45	55	TANZAM 2000	BKGCL
PL 6549/2010	2.66	Gold	Geita	Geita	12.07.2010	11.07.2018	45	55	TANZAM 2000	BKGCL
PL 9968/2014	5.6	Gold	Geita	Geita	10.07.2014	09.07.2018	45	55	TANZAM 2000	BKGCL

Source: Ministry of Energy and Minerals (nd.)

8.1.2 PLs wholly owned by STAMICO from 1996 to 2015

Licence No.	Size (Km^2)	Mineral	PL Locality		Validity of licence		% of ownership in the licence by STAMICO
			District	Region	Date issued	Expiry date	
PL 6477/2010	7.98	Gold	Geita	Geita	16.07.2010	15.07.2016	100
PL 6537/2010	7.61	Gold	Chato	Geita	13.08.2010	12.08.2016	100
PL 6755/2010	24.00	Gold	Nzega	Tabora	21.09.2010	20.09.2016	100
PL 7132/2011	9.98	Gold	Butiama	Mara	04.07.2011	03.07.2018	100
PL 8356/2012	8.53	Gold	Nyang'wale	Geita	25.10.2012	24.10.2016	100
PL 8794/2013	8.1	Gold	Biharamulo, Chato	Kagera, Geita	28.01.2013	27.01.2017	100
PL 9243/2013	7.1	Gold	Bukombe	Geita	28.06.2013	27.06.2017	100
PL 9548/2014	3.77	Gold	Chato	Geita	15.01.2014	14.01.2018	100
PL 9549/2014	10.94	Gold	Biharamulo	Kagera	15.01.2014	14.01.2018	100
PL 9550/2014	7.01	Gold	Bukombe	Geita	15.01.2014	14.01.2018	100
PL 9578/2014	16.2	Gold	Biharamulo, Bukombe	Kagera, Geita	21.02.2014	20.02.2018	100
PL 9594/2014	1.61	Phosphate	Mbozi	Mbeya	12.03.2014	11.03.2018	100
PL 9595/2014	6.14	Phosphate	Bahi	Dodoma	12.03.2014	11.03.2018	100
PL 9856/2014	15.86	REE	Nkasi, Sumbawanga Urban	Rukwa	02.07.2014	01.07.2018	100
PL 9857/2014	10.69	REE	Nkasi	Rukwa	02.07.2014	01.07.2018	100
PL 9858/2014	3.96	Gypsum	Chamwino	Dodoma	02.07.2014	01.07.2018	100
PL 9859/2014	2.7	Kaolin	Mufindi	Iringa	02.07.2014	01.07.2018	100
PL 9860/2014	18.05	Feldspar	Mvomero	Morogoro	02.07.2014	01.07.2018	100
PL 9963/2014	33.38	Coal	Ileje, Kyela	Mbeya	10.07.2014	09.07.2018	100

Source: Ministry of Energy and Minerals (nd.)

8.1.3 PLs partially owned by NDC from 1996 to 2015

Licence No.	Size (Km^2)	Mineral	PL Locality		Validity of licence		% of ownership in the licence		Private Partner's name	Private JV company holding licence (100%)
			District	Region	Date issued	Expiry date	NDC	Private Partner		
PL 5030/2008	16.69	Coal	Mbinga	Ruvuma	09.05.2008	08.05.2016	30	70	IETL	TEL
PL 5756/2009	14.77	Coal	Songea Rural	Ruvuma	12.06.2009	11.06.2017	30	70	IETL	TEL
PL 5903/2009	14.72	Coal	Mbinga	Ruvuma	12.06.2009	11.06.2017	30	70	IETL	TEL
PL 6285/2009	4.71	Coal	Mbinga	Ruvuma	31.12.2009	30.12.2017	30	70	IETL	TEL
PL 7391/2011	19.80	Coal	Mbinga	Ruvuma	28.11.2011	27.11.2018	30	70	IETL	TEL
PL 7392/2011	20.00	Coal	Mbinga	Ruvuma	28.11.2011	27.11.2018	30	70	IETL	TEL
PL 7620/2012	17.39	Coal	Mbinga	Ruvuma	01.02.2012	31.01.2016	30	70	IETL	TEL
PL 8999/2013	58.47	Coal	Mbinga	Ruvuma	27.03.2013	26.03.2017	30	70	IETL	TEL
PL 9807/2014	6.93	Coal	Nyasa	Ruvuma	13.06.2014	12.06.2018	30	70	IETL	TEL
PL 10417/2014	15.44	Coal	Songea Rural	Ruvuma	02.12.2014	01.12.2018	30	70	IETL	TEL
PL 6005/2009	11.22	Iron	Ludewa	Njombe	31.12.2009	30.12.2017	20	80	SHG	TCIMRL
PL 6006/2009	15.73	Iron	Ludewa	Njombe	31.12.2009	30.12.2017	20	80	SHG	TCIMRL
PL 6007/2009	3.32	Iron	Ludewa	Njombe	31.12.2009	30.12.2017	20	80	SHG	TCIMRL
PL 6008/2009	12.28	Iron	Ludewa	Njombe	31.12.2009	30.12.2017	20	80	SHG	TCIMRL
PL 6009/2009	3.6	Iron	Ludewa	Njombe	31.12.2009	30.12.2017	20	80	SHG	TCIMRL
PL 6010/2009	12.52	Coal	Ludewa	Njombe	31.12.2009	30.12.2015	20	80	SHG	TCIMRL
PL 6643/2010	9.9	Iron	Ludewa	Njombe	13.10.2010	12.10.2016	20	80	SHG	TCIMRL
PL 6712/2010	18.77	Coal	Ludewa	Njombe	13.10.2010	12.10.2016	20	80	SHG	TCIMRL
PL 7413/2011	4.4	Iron	Ludewa	Njombe	06.12.2011	05.12.2018	20	80	SHG	TCIMRL
PL 7461/2011	4.95	Iron	Ludewa	Njombe	19.12.2011	18.12.2018	20	80	SHG	TCIMRL
PL 6986/2012	6.48	Coal	Ludewa	Njombe	07.08.2012	06.08.2016	20	80	SHG	TCIMRL
PL 7714/2012	1.83	Dolomite	Ludewa	Njombe	23.02.2012	22.02.2016	20	80	SHG	TCIMRL
PL 7716/2012	12.96	Coal	Ludewa	Njombe	23.02.2012	22.02.2016	20	80	SHG	TCIMRL
PL 7717/2012	1.66	Dolomite	Ludewa	Njombe	23.02.2012	22.02.2016	20	80	SHG	TCIMRL

PL 7718/2012	1.8	Dolomite	Ludewa	Njombe	23.03.2012	22.03.2016	20	80	SHG	TCIMRL
PL 8128/2012	3.65	Dolomite	Ludewa	Njombe	12.07.2012	11.07.2016	20	80	SHG	TCIMRL
PL 9056/2013	2.2	Dolomite	Ludewa	Njombe	27.03.2013	26.03.2017	20	80	SHG	TCIMRL
PL 9533/2014	12.62	Coal	Ludewa	Njombe	15.01.2014	14.01.2018	20	80	SHG	TCIMRL
PL 9766/2014	1.66	Dolomite	Ludewa	Njombe	02.06.2014	01.06.2018	20	80	SHG	TCIMRL
PL 9767/2014	1.8	Dolomite	Ludewa	Njombe	05.06.2014	04.06.2018	20	80	SHG	TCIMRL
PL 9881/2014	6.48	Coal	Ludewa	Njombe	30.06.2014	30.06.2018	20	80	SHG	TCIMRL
PL 10110/2014	18.77	Coal	Ludewa	Njombe	13.08.2014	12.08.2018	20	80	SHG	TCIMRL
PL 10259/2014	5.59	Iron	Ludewa	Njombe	25.09.2014	24.09.2018	20	80	SHG	TCIMRL
PL 10260/2014	8.09	Iron	Ludewa	Njombe	25.09.2014	24.09.2018	20	80	SHG	TCIMRL
PL 10261/2014	6.14	Iron	Ludewa	Njombe	25.09.2014	24.09.2018	20	80	SHG	TCIMRL
PL 10263/2014	12.62	Coal	Ludewa	Njombe	25.09.2014	24.09.2018	20	80	SHG	TCIMRL
PL 10418/2014	4.95	Iron	Ludewa	Njombe	02.12.2014	01.12.2018	20	80	SHG	TCIMRL
PL 10680/2015	6.14	Iron	Ludewa	Njombe	18.09.2015	17.09.2019	20	80	SHG	TCIMRL
PL 10681/2015	5.61	Iron	Ludewa	Njombe	18.09.2015	17.09.2019	20	80	SHG	TCIMRL
PL 10682/2015	10.38	Iron	Ludewa	Njombe	18.09.2015	17.09.2019	20	80	SHG	TCIMRL
PL 10683/2015	5.75	Coal	Ludewa	Njombe	18.09.2015	17.09.2019	20	80	SHG	TCIMRL
PL 10684/2015	22.8	Coal	Ludewa	Njombe	18.09.2015	17.09.2019	20	80	SHG	TCIMRL
PL 10747/2015	6.88	Iron	Ludewa	Njombe	27.10.2015	26.10.2019	20	80	SHG	TCIMRL

Source: Ministry of Energy and Minerals (nd.)

8.1.4 PLs wholly owned by NDC from 1996 to 2015

Licence No.	Size (Km^2)	Mineral	PL Locality		Validity of licence		% of ownership of the licence by NDC
			District	Region	Date issued	Expiry date	
PL 4679/2007	8.42	Coal	Ludewa	Njombe	18.09.2007	17.09.2017	100
PL 5325/2008	18.94	Coal	Ludewa	Njombe	25.07.2008	24.07.2016	100
PL 6245/2009	41.03	Soda Ash	Longido, Monduli	Arusha	31.12.2008	30.12.2017	100
PL 6246/2009	39.33	Soda Ash	Monduli	Arusha	31.12.2009	30.12.2017	100
PL 6708/2010	7.16	Coal	Ludewa	Njombe	13.10.2010	12.10.2016	100
PL 6710/2010	14.73	Coal	Ludewa	Njombe	13.10.2010	12.10.2016	100
PL 6711/2010	9.78	Coal	Ludewa	Njombe	13.10.2010	12.10.2016	100
PL 6917/2011	9.47	Coal	Ludewa	Njombe	22.02.2011	21.02.2018	100
PL 6923/2011	7.36	Coal	Ludewa	Njombe	22.02.2011	21.02.2018	100
PL 6959/2011	11.87	Coal	Ludewa	Njombe	28.02.2011	27.02.2018	100
PL 7713/2012	10.91	Gold	Songea Rural	Ruvuma	23.02.2012	22.02.2019	100
PL 7715/2012	15.53	Coal	Ludewa	Njombe	23.02.2012	22.02.2019	100
PL 8065/2012	49.72	AOBG	Ngorongoro	Arusha	20.06.2012	19.06.2016	100
PL 8797/2013	99.21	Soda Ash	Ngorongoro	Arusha	28.01.2013	27.01.2017	100
PL 9573/2014	82.08	Soda Ash	Longido, Monduli	Arusha	24.01.2014	23.01.2018	100
PL 9575/2014	68.38	Soda Ash	Longido, Monduli	Arusha	24.01.2014	23.01.2018	100
PL 9751/2014	9.47	Coal	Ludewa	Njombe	05.06.2014	04.06.2018	100
PL 9577/2014	6.18	Iron	Ludewa	Njombe	24.01.2014	23.01.2018	100
PL 10081/2014	7.36	Coal	Ludewa	Njombe	11.08.2014	10.08.2018	100
PL 10193/2014	2.61	Iron	Ludewa	Njombe	29.08.2014	28.08.2018	100
PL 10611/2015	49.71	Soda Ash	Ngorongoro	Arusha	08.05.2015	07.05.2019	100
PL 10692/2015	11.87	Coal	Ludewa	Njombe	18.09.2015	17.09.2019	100

Source: Ministry of Energy and Minerals (nd.)

8.2 MLs and medium scale mines owned by STAMICO and NDC

8.2.1 MLs partially owned by STAMICO and NDC from 1996 to 2015

Licence No.	Size (Km^2)	Mineral	Licence Locality	Validity of Mining Licence as at 31 December, 2015	Ownership of the licence		Ownership of the licence by private investor		Partnership or company holding the licence (100%)
					STAMCO or NDC	% of ownership of the licence	Private partner's name	% of ownership of the licence	
ML 490/2013	7.6	Tanzanite	Simanjiro District, Manyara region	Valid till 19.06.2023, issued on 20.06.2013	STAMICO	50	TOML	50	Partnership of STAMICO (50%) and TOML (50%)
ML 496/2013	9.91	Gold	Bukombe District, Geita region	Valid till 10.10.2023, issued on 11.10.2013	STAMICO	15	TANZAM 2000	85	Partnership of STAMICO (15%) and TANZAM 2000 (85%)
ML 439/2011	9.98	Coal	Mbinga District, Ruvuma region	Valid till 17/08/2021, issued on 18/08/2011	NDC	30	IETL	70	TEL (Private JV company)

Source: Ministry of Energy and Minerals (nd.)

8.2.2 Medium scale mines partially owned by STAMICO and NDC

Name of mine	Licence No.	Mineral	Ownership of the mine by STAMICO and NDC from 2011 to 2015		Ownership of the mine by private investor from 2011 to 2015		Partnership or company holding the mine (100%)	Status of mining operations as at 31st Dec, 2015
			STAMICO or NDC	% of ownership of the mine	Private partner's name	% of ownership of the mine		
Merelani Tanzanite Mine	ML 490/2013	Tanzanite	STAMICO	50	TOML	50	Partnership of STAMICO (50%) and TOML (50%)	In operation since June, 2013
Kigosi Gold Mine	ML 496/2013	Gold	STAMICO	15	TANZAM 2000	85	Partnership of STAMICO (15%) and TANZAM 2000 (85%)	Operations not yet started
Ngaka Coal Mine	ML 439/2011	Coal	NDC	30	IETL	70	TEL (Private JV company)	In operation since August, 2011

Source: Ministry of Energy and Minerals (2015b); Tanzania Minerals Audit Agency (2016a)

8.3 SMLs and large scale mines partially owned by STAMICO, NDC and TR

8.3.1 SMLs partially owned by STAMICO, NDC and TR from 1996 to 2015

Licence No.	Size (Km^2)	Mineral	Licence locality	Validity of Mining Licence as at 31 December, 2015	Ownership of the licence		Ownership of the licence by private or other TZGT partner		Partnership or company holding the licence (100%)
					STAMICO, NDC or TR	% of ownership of the licence	Private or other TZGT partner's name	% of ownership of the licence	
SML 157/2003	25.38	Gold	Biharamuro	Valid till 02.11.2028, issued on 03.11.2003	STAMICO	99	TR (Other TZGT partner)	1	Partnership of Stamigold (99%) and TR (1%)
SML 04/92	16.04	Gold	Geita District, Geita region	Valid till 11.06.2027, issued on 12.06.2000	STAMICO	45	TANZAM 2000 (Private investor)	55	BKGCL (Private JV company)
SML 533/2014	30.41	Iron	Ludewa District, Njombe region	Valid till 08.10.2039, issued on 09.10.2014	NDC	20	SHG (Private investor)	80	TCIMRL (Private JV company)
SML 534/2014	25.46	Coal	Ludewa District, Njombe region	Valid till 08.10.2039, issued on 09.10.2014	NDC	20	SHG (Private investor)	80	TCIMRL (Private JV company)
SML 216/2005	30.6	Diamond	Kishapu District, Shinyanga region	Valid till 24.05.2030, issued on 25.05.2005	TR	25	Petra Diamonds Ltd (Private investor)	75	Partnership of TR (25%) and Petra Diamonds Ltd (75%)

Source: Ministry of Energy and Minerals (2015b); Tanzania Minerals Audit Agency (2016a)

8.3.2 SMLs wholly owned by STAMICO from 1996 to 2015

Licence No.	Size (Km^2)	Mineral	Licence locality	Validity of Mining Licence as at 31 December, 2015	% of ownership of the mine
SML 233/2005	19.2	Coal	Ileje and Rungwe Districts in Mbeya region	Valid till 16.11.2030, issued on 17.11.2005	100

Source: Ministry of Energy and Minerals (nd.)

8.3.3 Large scale mines partially owned by STAMICO, NDC and TR

Name of mine	Licence No.	Mineral	Ownership of the mine by STAMICO, NDC and TR		Ownership of the mine by private or other TZGT partner		Partnership or company holding the mine (100%)	Status of mining operations as at 31st Dec, 2015
			STAMICO, NDC or TR	% of ownership of the mine	Private or other TZGT partner's name	% of ownership of the mine		
Stamigold Biharamuro Mine	SML 157/2003	Gold	STAMICO	99	TR	1	Partnership of Stamigold (99%) and TR (1%)	In operation since June, 2013
Buckreef Gold Mine	SML 04/92	Gold	STAMICO	45	TANZAM 2000	55	BKGCL (Private JV company)	In operation since June, 2013
Liganga Iron ore Mine	SML 533/2014	Iron ore	NDC	20	SHG	80	TCIMRL (Private JV company)	Operations not yet started
Mchuchuma Coal Mine	SML 534/2014	Coal	NDC	20	SHG	80	TCIMRL (Private JV company)	Operations not yet started
Williamson Diamonds Mine	SML 216/2005	Diamond	TR	25	Petra Diamonds Ltd	75	TR (25%) and Petra Diamonds Ltd (75%)	In operation since 1940

Source: Ministry of Energy and Minerals (2015b); Tanzania Minerals Audit Agency (2016a)

8.3.4 Large scale mines wholly owned by STAMICO from 1996 to 2015

Name of mine	Licence No.	Mineral	% of ownership of the mine	Company operating the mine	Status of mining operations as at 31st Dec, 2015
Kiwira Coal Mine	SML 233/2005	Coal	100	KCPL	In operation since August, 2011

8.4 Application, preparation and renewal fees for mineral rights in Tanzania

A: Application, preparation, and renewal fees for PLs, RLs, SMLs, MLs and MLs		
Type of geological fee	**Fees from 1st November, 2010 to 15th July, 2012 (US$)**	**Fees from 16th July, 2012 to 31st December, 2015 (US$)**
Application fees for PL for metallic minerals, energy minerals and kimberlitic diamond	100.00	300.00
Application fees for PL for building materials and gemstones excluding kimberlitic diamond	100.00	300.00
Application fees for PL for industrial minerals	50.00	200.00
Application fees for RL	500.00	4,000.00
Application fees for SML	2,000.00	5,000.00
Application fees for ML	1,000.00	2,000.00
Application fees for ML for building materials	500.00	2,000.00
Application fees fee for transfer of PML	100.00	200.00
Application fees for transfer of shares in PML	100.00	500.00
Application fees for renewal of PL for metallic minerals, energy minerals and kimberlitic diamond	100.00	300.00
Application fees for renewal of RL	500.00	4,000.00
Application fees fee for renewal of SML	1,000.00	5,000.00
Application fees for renewal of ML	500.00	2,000.00
Application fees for renewal of ML for building materials and industrial minerals	500.00	2,000.00
Preparation fees for PL for all minerals	200.00	500.00
Preparation fees for ML for all minerals	500.00	1,000.00
Preparation fees for SML	1,000.00	2,000.00
Preparation fees for RL	1,000.00	2,000.00
Type of geological fee	**Fees from 1st November, 2010 to 15th July, 2012 (TZS/US$)**	**Fees from 16th July, 2012 to 31st December, 2015 (US$)**
Application fees for PCL	TZS100,000.00	US$200.00
Application fees for SL	TZS100,000.00	US$200.00
Application fees for RFL	TZS100,000.00	US$200.00

Preparation fees for PCL	TZS100,000.00	US$200.00
Preparation fees for SL	US$500.00	US$200.00
Preparation fees for RFL	US$500.00	US$200.00
Application fees for renewal of PCL	TZS100,000.00	US$200.00
Application fees for renewal of SL	US$500.00	US$200.00
Application fees for renewal of RFL	US$500.00	US$200.00

Source: Ministry of Energy and Minerals (2010b and 2012)

8.5 Annual levies for mineral rights in Tanzania

A: Annual levies for PLs, RLs, SMLs, MLs and PMLs		
Type of Annual levies	**Annual levy rates from 1st November, 2010 to 15th July, 2012 (US$/km^2/year)**	**Annual levy rates from 16th July, 2012 to 31st December, 2015 (US$/km^2/year)**
Annual levy for IPP of PL for metallic minerals, energy minerals and kimberlitic diamonds for initial period	40.00	100.00
Annual levy for IPP of PL for building materials	40.00	100.00
Annual levy for IPP of PL for gemstones excluding kimberlitic diamonds	40.00	100.00
Annual levy for FRP of PL	50.00	150.00
Annual levy for SRP of a PL	60.00	200.00
Annual levy for RL	500.00	2,000.00
Annual levy for SML	2,000.00	5,000.00
Annual levy for ML for metallic minerals, energy minerals, gemstones and kimberlitic diamonds	1,000.00	3,000.00
Annual levy for ML for building materials and industrial minerals	500.00	2,000.00
B: Annual levies for PCLs, SLs and RFLs		
Type of Annual levies	**Fees from 1 November 2010 to 15 July 2012 (US$/year)**	**Fees from 16 July 2012 to 31 December 2015 (US$/year)**
Annual levy for PCL	TZS1000,000/year	US$1000/year
Annual levy for SL	US$2000/year	US$1000/year
Annual levy for RFL	US$2000/year	US$1000/year

Source: Ministry of Energy and Minerals (2010b and 2012)

8.6 Some mining related taxes and incentives adopted in Tanzania

Type of tax or incentive	From 1998 to 2003	From 2004 to 2009	From 2010 to 2015
	Description of tax or incentive and application	Description of tax or incentive and application	Description of tax or incentive and application
Corporate income tax on unlisted company at DSE	Charged annually at 30%.	Charged annually at 30%.	Charged annually at 30%.
Corporate income tax on shortlisted company at DSE	Charged annually at 25%.	Charged annually at 25%.	Charged annually at 25%.
Withholding tax (On technical services fees paid to resident and non-residents for their such services)	Charged at 3% on payments made to residents.	Charged at 5% made to residents.	Charged at 5% made to residents.
	Charged at 3% on payments made to non-residents.	Charged at 15% on payments made to non-residents.	Charged at 15% on payments made to non-residents.
Withholding tax (On interest paid to banks on loans provided)	0% on foreign currency loan from third party.	Charged at 10% on interest income earned by individuals (resident and non-residents) in all sectors. Financial institutions collect it on behalf of TZGT.	Charged at 10% on interest income earned by individuals (resident and non-residents) in all sectors. Financial institutions collect it on behalf of TZGT.
	15% on foreign currency loan from affiliates		
Withholding tax (On management fees paid to residents)	Charged at 3% on payments made to residents for their managerial, technical and professional services in the country. However, the tax was only valid if 30% of such payments did not exceed 20% of the total operating costs. The amount was set not to exceed 20% of payments.	Charged at 3% on payments made to residents for their managerial, technical and professional services in the country. However, the tax was only valid if 30% of such payments did not exceed 20% of the total operating costs. The amount was set not to exceed 20% of payments.	Charged at 3% on payments made to residents for their managerial, technical and professional services in the country. However, the tax was only valid if 30% of such payments did not exceed 20% of the total operating costs. The amount was set not to exceed 20% of payments.
Withholding tax (On management fees paid to non-residents)	Charged at 3% on payments made to non-residents for their managerial, technical and professional services they had provided in the country.	Charged at 15% on payments made to non-residents for providing managerial, technical and professional services in the country.	Charged at 15% on payments made to non-residents for providing managerial, technical and professional services in the country.
Withholding tax (On dividends paid to residents from shortlisted companies at DSE)	Charged at 5% on dividends payments made to locals by companies shortlisted at DSE.	Charged at 5% on dividends payments made to locals by companies shortlisted at DSE.	Charged at 5% on dividends payments made to locals by companies shortlisted at DSE.
Withholding tax (On dividends paid to residents from un shortlisted companies at DSE)	Charged at 10% on dividends payments made to locals by companies not shortlisted at DSE.	Charged at 10% on dividends payments made to locals by companies not shortlisted at DSE.	Charged at 10% on dividends payments made to locals by companies not shortlisted at DSE.
Skills and Development Levy (SDL)	Charged at 6% on emoluments paid to employee by employer.	Charged at 6% on emoluments paid to employee by employer.	Charged at 6% on emoluments paid to employee by employer.
Value Added Tax (VAT)	Granting of VAT relief to both imports and domestic consumers took place.	Granting of VAT relief to both imports and domestic consumers took place.	VAT on domestic sales is 18% and exports are 0% rated. VAT paid on exploration and mining equipment is reclaimable.

Fuel levy	Charged at TZS200 per litre and fuel consumers were capable of claiming back the money.	Fuel Taxes (Fuel levy and Excise Duty on fuel) are charged at US$200,000 per annum.	Fuel Taxes (Fuel levy and Excise Duty on fuel) are charged at US$200,000 per annum.
Excise duty	Charged at TZS314 per litre and fuel consumers were capable of claiming back the money.		
Import duty	0% charged on Cost, Insurance and Freight (CIF) of the imported capital goods and supplies and consumables directly related to exploration and mining operations in the first year and 5 % thereafter.	0% charged on Cost, Insurance and Freight (CIF) of the imported capital goods and supplies and consumables directly related to exploration and mining operations in the first year and 5 % thereafter.	• 0% charged on CIF of the imported raw materials, intermediate goods and finished goods within East African Community countries. • On importation made outside EAC: 0% charged on CIF of the imported raw materials 10% for intermediate goods and 25% of finished goods.
Contribution to the National Social Security Fund (NSSF) or Parastatal Pension Fund (PPF)	NSSF contribution were of a twofold scenario; one is 10% of employers' salary is to be paid by the employer and second is 10% of employee's salary from the employee himself/herself. On PPF, employer contributes 15% while employer pays 5%. All contribution are monthly basis.	NSSF contribution are a twofold scenario; one is 10% of employer's salary is to be paid by the employer and second is 10% of employee's salary from the employee himself/herself. On PPF, employer contributes 15% while employer pays 5%. All contribution are monthly basis.	NSSF contribution are a twofold scenario; one is 10% of employer's salary is to be paid by the employer and second is 10% of employee's salary from the employee himself/herself. On PPF, employer contributes 15% while employer pays 5%. All contribution are monthly basis.
Ring fencing	Ring fencing was by company	Ring fencing was by company	Ring fencing is by Mine
Local government service Levy	Charged US$200,000.00 annually	Charged annually at the rate of 0.3% of total turnover of the mining company.	Charged annually at the rate of 0.3% of total turnover of the mining company.
Capital allowances for taxable income	Mine development capital expenditures were immediately expensed at 100% followed with a 15% additional capital allowance to recoup capital from unredeemable qualifying capital (unrecoverable development capital expenditures).	Continued being applied to Mining companies with MDAs signed with TZGT before 1 July 2001.	Continued being applied to mining companies with MDAs signed with TZGT before 1 July 2001.
Indefinitely carrying out of losses	Losses were carried out indefinitely until recovered against income.	Losses were carried out indefinitely until recovered against income.	Losses are carried out indefinitely until recovered against income.
Depreciation allowance for taxable income and profits	Reduced at a rate of 100% on capital expenditures of exploration and mining equipment held by Mining companies having MDAs.	Reduced at a rate of 100% on capital expenditures of exploration and mining equipment held by mining companies with MDAs.	Reduced at a rate of 100% on capital expenditures of exploration and mining equipment held by Mining companies having MDAs.

Sources: Tanzania Extractive Industries Transparency Initiative (2015); Muganyizi (2012)

8.7 Life phases reflection of PLs under NDC from 2011 to 2015

Some PLs of the same group	A demo PL in the group	Conformity to Mining Regulations, 1999				Conformity to Mining Regulations, 2010
		From	To	Year(s)	Life phase under Mining Regulations, 1999 (3:2:2)	Life phase reflection in Mining Regulations, 2010 (4:3:2)
PL 4679/2007	PL 4679/2007	18.09.2007	17.09.2008	1	An IPP of 3 years was valid and didn't cross over a year 2011	The IPP of 3 years under Mining Regulations 1999 expired on 31st October 2010 before commencement of Mining Regulations, 2010 on1st November 2010. So could not be reflected into Mining Regulations, 2010
		18.09.2008	17.09.2009	2		
		18.09.2009	17.09.2010	3		
		18.09.2010	17.09.2011	4	A FRP of 2 years was valid and crossed over a year 2011	The FRP of 2 years under Mining Regulations, 1999 was assumed to be equal to the IPP of 4 years under Mining Regulations, 2010
		18.09.2011	17.09.2012	5		
		18.09.2012	17.09.2013	6	Mining Regulations, 1999were inapplicable	A FRP of 3 years was valid under Mining Regulations, 2010
		18.09.2013	17.09.2014	7		
		18.09.2014	17.09.2015	8		
		18.09.2015	17.09.2016	9	Mining Regulations, 1999were inapplicable	A SRP of 2 years was valid under Mining Regulations, 2010
		18.09.2016	17.09.2017	10		
PL 5325/2008 and PL 5030/2008	PL 5325/2008	25.07.2008	24.07.2009	1	An IPP of 3 years was valid and crossed over a year 2011	The IPP of 3 years under Mining Regulations, 1999was assumed to be equal to the IPP of 4years under Mining Regulations, 2010
		25.07.2009	24.07.2010	2		
		25.07.2010	24.07.2011	3		
		25.07.2011	24.07.2012	4	Mining Regulations, 1999 were inapplicable	A FRP of 3 years was valid under Mining Regulations, 2010
		25.07.2012	24.07.2013	5		
		25.07.2013	24.07.2014	6		
		25.07.2014	24.07.2015	7	Mining Regulations, 1999 were inapplicable	A SRP of 2 years was valid under Mining Regulations, 2010
		25.07.2015	24.07.2016	8		

PL 6245/2009, PL 6246/2009, PL 5756/2009, PL 5903/2009 and PL 6285/2009	PL 6246/2009	31.12.2009	30.12.2010	1	Mining Regulations, 1999 were inapplicable	The IPP of 3 years under Mining Regulations, 1999was assumed to be equal to the IPP of 4years under Mining Regulations, 2010
		31.12.2010	30.12.2011	2		
		31.12.2011	30.12.2012	3		
		31.12.2012	30.12.2013	4	Mining Regulations, 1999 were inapplicable	A FRP of 3 years applicable under Mining Act, 2010
		31.12.2013	30.12.2014	5		
		31.12.2014	30.12.2015	6		
		31.12.2015	30.12.2016	7	Mining Regulations, 1999 were inapplicable	A SRP of 2 years was valid under Mining Regulations, 2010
		31.12.2016	30.12.2017	8		
PL 6708/2010, PL 6710/2010, PL 6711/2010, PL 6643/2010 and PL 6712/2010	PL 6708/2010	13.10.2010	12.10.2011	1	An IPP of 3 years was valid and crossed over a year 2011	The IPP of 3 years under Mining Regulations, 1999was assumed to be equal to the IPP of 4years under Mining Regulations, 2010
		13.10.2011	12.10.2012	2		
		13.10.2012	12.10.2013	3		
		13.10.2013	12.10.2014	4	Mining Regulations, 1999were inapplicable	A FRP of 3 years is valid under Mining Regulations, 2010
		13.10.2014	12.10.2015	5		
		13.10.2015	12.10.2016	6		
PL 6917/2011, PL 6923/2011, PL 6959/2011, PL 7413/2011 and PL 7461/2011	PL 6959/2011	28.02.2011	27.02.2012	1	Mining Regulations, 1999were inapplicable	An IPP of 4 years was valid under Mining Regulations, 2010
		28.02.2012	27.02.2013	2		
		28.02.2013	27.02.2014	3		
		28.02.2014	27.02.2015	4		
		28.02.2015	27.02.2016	5	Mining Regulations, 1999were inapplicable	A FRP of 3 years is valid under Mining Regulations, 2010
		28.02.2016	27.02.2017	6		
		28.02.2017	27.02.2018	7		

PL 8797/2013 and PL 9056/2013	PL 8797/2013	28.01.2013	27.01.2014	1	Mining Regulations, 1999were inapplicable	An IPP of 4 years is valid under Regulations, 2010
		28.01.2014	27.01.2015	2		
		28.01.2015	27.01.2016	3		
		28.01.2016	27.01.2017	4		

Source: Ministry of Energy and Minerals (nd., 1998, 1999, 2010a and 2010b)

8.8 Payable annual levies for 13 gold PLs by BKGCL from 2011 to 2015

Licence No. and mineral sought	Initial Prospecting Period (IPP)			First Renewal Period (FRP)			Total Payable annual levies in IPP and FRP (US$)
	Period and No. of years	Rate per km^2 per year (US$)	Payable levies in IPP (US$)	Period and No. of years and reduced size of PL	Rate per km^2 per year (US$)	Payable annual levies in FRP (US$)	
PL 6427/2010	2011-2013 (2)	40 for 2011-2012 and 100 for 2012-2013	294.00	2013-2015 (2)	150	315.00	609.00
PL 6428/2010	2011-2013 (2)	40 for 2011-2012 and 100 for 2012-2013	418.60	2013-2015 (2)	150	448.50	867.10
PL 6429/2010	2011-2013 (2)	40 for 2011-2012 and 100 for 2012-2013	2,798.60	2013-2015 (2)	150	2,998.50	5,797.10
PL 6430/2010	2011-2013 (2)	40 for 2011-2012 and 100 for 2012-2013	1,246.00	2013-2015 (2)	150	1,335.00	2,581.00
PL 6431/2010	2011-2013 (2)	40 for 2011-2012 and 100 for 2012-2013	373.80	2013-2015 (2)	150	400.50	774.30
PL 6432/2010	2011-2013 (2)	40 for 2011-2012 and 100 for 2012-2013	275.80	2013-2015 (2)	150	295.50	571.30
PL 6544/2010	2011-2013 (2)	40 for 2011-2012 and 100 for 2012-2013	361.20	2013-2015 (2)	150	387.00	748.20

PL 6545/2010	2011-2013 (2)	40 for 2011-2012 and 100 for 2012-2013	739.20	2013-2015 (2)	150	792.00	1,531.20
PL 6546/2010	2011-2013 (2)	40 for 2011-2012 and 100 for 2012-2013	2,437.40	2013-2015 (2)	150	2,611.50	5,048.90
PL 6547/2010	2011-2013 (2)	40 for 2011-2012 and 100 for 2012-2013	740.60	2013-2015 (2)	150	793.50	1,534.10
PL 6548/2010	2011-2013 (2)	40 for 2011-2012 and 100 for 2012-2013	264.60	2013-2015 (2)	150	283.50	548.10
PL 6549/2010	2011-2013 (2)	40 for 2011-2012 and 100 for 2012-2013	372.40	2013-2015 (2)	150	399.00	771.40
PL 9968/2014	2014-2015(1)	100	560.00	-	-	-	560.00
		Total	**10,882.20**			**11,059.50**	**21,941.70**

8.9 Exploration expenditures in 19 PLs wholly owned by STAMICO

Initial Prospecting Period (IPP) in which minimum allowable exploration expenditure rate per km² per year is US$500			First Renewal Period (FRP) in which minimum allowable exploration expenditure rate per km² per year is US$2000			Total minimum allowable expenditure in IPP and FRP (US$)
Licence No., Initial size (km²) of PL and mineral sought	**Period & No. of years**	**Minimum allowable expenditures in IPP (US$)**	**Reduced size (km²) of PL**	**Period and No. of years**	**Minimum allowable expenditures in FRP (US$)**	
PL 6477/2010 (Gold), size 7.98 km²	2011-2013 (2 years)	7980	3.99	2013-2015 (2 years)	15960	23940
PL 6537/2010 (Gold), size 7.61 km²	2011-2013 (2 years)	7610	3.805	2013-2015 (2 years)	15220	22830
PL 6755/2010 (Gold), size 24 km²	2011-2013 (2 years)	24000	12	2013-2015 (2 years)	48000	72000
PL 7132/2011 (Gold), size 9.98 km²	2011-2015 (4 years)	19960	-	-	-	19960
PL 8356/2012 (Gold), size 8.53 km²	2012-2015 (3 years)	12795	-	-	-	12795
PL 8794/2013 (Gold), size 8.1 km²	2013-2015 (2 years)	8100	-	-	-	8100
PL 9243/2013 (Gold), size 7.1 km²	2013-2015 (2 years)	7100	-	-	-	7100
PL 9548/2014 (Gold), size 3.77 km²	2014-2015 (1 year)	1885	-	-	-	1885
PL 9549/2014 (Gold), size 10.94 km²	2014-2015 (1 year)	5470	-	-	-	5470
PL 9550/2014 (Gold), size 7.01 km²	2014-2015 (1 year)	3505	-	-	-	3505
PL 9578/2014 (Gold), size 16.2 km²	2014-2015 (1 year)	8100	-	-	-	8100
PL 9594/2014 (Phosphates), size 1.61 km²	2014-2015 (1 year)	805	-	-	-	805
PL 9595/2014 (Phosphates), size 6.14 km²	2014-2015 (1 year)	3070	-	-	-	3070

PL 9856/2014 (REE), size 15.86 km^2	2014-2015 (1 year)	7930	-	-	-	7930
PL 9857/2014 (REE), size 10.69 km^2	2014-2015 (1 year)	5345	-	-	-	5345
PL 9858/2014 (Gypsum), size 3.96 km^2	2014-2015 (1 year)	1980	-	-	-	1980
PL 9859/2014 (Kaolin), size 2.7 km^2	2014-2015 (1 year)	1350	-	-	-	1350
PL 9860/2014 (Feldspar), size 18.05 km^2	2014-2015 (1 year)	9025	-	-	-	9025
PL 9963/2014 (Coal), size 33.38 km^2	2014-2015 (1 year)	16690	-	-	-	16690
	Total	**152700**			**79180**	**231880**

8.10 Payable annual levies for 19 PLs by STAMICO from 2011 to 2015

Licence No. and mineral sought	Initial Period (IPP)			First renewal period (FRP)			Total Payable annual levies in IPP and FRP (US$)
	Period and No. of years	Rate per km^2 per year (US$)	Payable annual levies in IPP (US$)	Period and No. of years and reduced size of PL	Rate per km^2 per year (US$)	Payable annual levies in FRP (US$)	
PL 6477/2010 (Gold), 7.98 km^2	2011-2013 (2 years)	40 /1 year & 100/1 year	1,117.20	2013-2015 (2 years), 3.99 km^2	150	1,197.00	2,314.20
PL 6537/2010 (Gold), 7.61 km^2	2011-2013 (2 years)	40 /1 year & 100/1 year	1,065.40	2013-2015 (2 years), 3.805 km^2	150	1,141.50	2,206.90
PL 6755/2010 (Gold), 24 km^2	2011-2013 (2 years)	40 /1 year & 100/1 year	3,360.00	2013-2015 (2 years), 12 km^2	150	3,600.00	6,960.00
PL 7132/201 (Gold), 9.98 km^2	2011-2015 (4 years)	40 /1 year & 100/3 years	3,393.20	-	-	-	3,393.20
PL 8356/2012 (Gold), 8.53 km^2	2012-2015 (3 years)	100	2,559.00		-	-	2,559.00
PL 8794/2013 (Gold, 8.1 km^2	2013-2015 (2 years)	100	1,620.00	-	-	-	1,620.00
PL 9243/2013 (Gold), 7.1 km^2	2013-2015 (2 years)	100	1,420.00	-	-	-	1,420.00
PL 9548/2014 (Gold), 3.77 km^2	2014-2015 (1 year)	100	377.00	-	-	-	377.00
PL 9549/2014 (Gold), 10.94 km^2	2014-2015 (1 year)	100	1,094.00	-	-	-	1,094.00

PL 9550/2014 (Gold), 7.01 km^2	2014-2015 (1 year)	100	701.00	-	-	-	701.00
PL 9578/2014 (Gold), 16.2 km^2	2014-2015 (1 year)	100	1,620.00	-	-	-	1,620.00
PL 9594/2014 (Phosphates), 1.61 km^2	2014-2015 (1 year)	100	161.00	-	-	-	161.00
PL 9595/2014 (Phosphates), 6.14 km^2	2014-2015 (1 year)	100	614.00	-	-	-	614.00
PL 9856/2014 (REE), 15.86 km^2	2014-2015 (1 year)	100	1,586.00		-	-	1,586.00
PL 9857/2014 (REE), 10.69 km^2	2014-2015 (1 year)	100	1,069.00		-	-	1,069.00
PL 9858/2014 (Gypsum), 3.96 km^2	2014-2015 (1 year)	100	396.00	-	-	-	396.00
PL 9859/2014 (Kaolin), 2.7 km^2	2014-2015 (1 year)	100	270.00	-	-	-	270.00
PL 9860/2014 (Feldspar), 8.05 km^2	2014-2015 (1 year)	100	1,805.00	-	-	-	1,805.00
PL 9963/2014 (Coal), 33.38 km^2	2014-2015 (1 year)	100	3,338.00	-	-	-	3,338.00
		Total	**27,565.80**			**5,938.50**	**33,504.30**

NB: (i) 40 /1 year & 100/1 year means that US$40 is applied in 1km^2 of PL per year in the first year and US$100 in 1km^2 of PL per year in the 2nd year.

(ii) 40 /1 year & 100/3 years means that US$40 is applied in 1km^2 of PL per year in the first year and US$100 in 1km^2 of PL per year in the next 3 years.

8.11 Mineral rights partially and wholly owned by STAMICO

Nature of mineral rights ownership from 1996 to 2015	Type of mineral rights	Description of mineral rights	No. of mineral rights	Mineral sought	% of ownership of STAMICO in mineral rights	% of ownership of private or other TZGT partner in mineral rights	Sole commercial entity, partnership or company holding mineral rights (100%)
Partial ownership	PLs	Gold PLs partially owned by STAMICO and TANZAM 2000	13	Gold	45	55	BKGCL (Private JV company)
	MLs	Tanzanite MLs partially owned by STAMICO and TOML	1	Tanzanite	50	50	Partnership of STAMICO (50%) and TOML (50%)
		Gold MLs partially owned by STAMICO and TANZAM 2000	1	Gold	15	85	Partnership of STAMICO (15%) and TANZAM 2000 (85%)
	SMLs	Gold SMLs partially owned by Stamigold and TR	1	Gold	99	1	Partnership of Stamigold (99%) and TR (1%)
		Gold SMLs partially owned by STAMICO and TANZAM 2000	1	Gold	45	55	BKGCL (Private JV company)
		Subtotal	**17**				
Wholly ownership	PLs	Gold PLs wholly owned by STAMICO	11	Gold	100	-	STAMICO (Sole commercial entity)
		Phosphate PLs wholly owned by STAMICO	2	Phosphate	100	-	STAMICO (Sole commercial entity)
		REE PLs wholly owned by STAMICO	2	REE	100	-	STAMICO (Sole commercial entity)
		Gypsum PLs wholly owned by STAMICO	1	Gypsum	100	-	STAMICO (Sole commercial entity)

		Kaolin PLs wholly owned by STAMICO	1	Kaolin	100	-	STAMICO (Sole commercial entity)
		Feldspar PLs wholly owned by STAMICO	1	Feldspar	100	-	STAMICO (Sole commercial entity)
		Coal PLs wholly owned by STAMICO	1	Coal	100	-	STAMICO (Sole commercial entity)
	SMLs	Coal SMLs wholly owned by STAMICO	1	Coal	100	-	KCPL (A subsidiary sole commercial entity of STAMICO)
Subtotal			**20**				
Total			**37**				

8.12 Exploration expenditures in 37 PLs partially owned by NDC

Initial Prospecting Period (IPP) in which minimum allowable exploration expenditure rate per km^2 per year is US$500			First Renewal Period (FRP) in which minimum allowable exploration expenditure rate per km^2 per year is US$2000			Second Renewal Period (SRP) in which minimum allowable exploration expenditure rate per km^2 per year is US$6000			Total Minimum allowable expenditures in IPP, FRP and SRP (US$)
Licence No., Initial size (km^2) of PL and mineral sought	**Period & No. of years**	**Minimum allowable expenditures in IPP (US$)**	**Reduced size (km^2) of PL**	**Period and No. of years**	**Minimum allowable expenditures in FRP (US$)**	**Reduced size (km^2) of PL**	**Period and No. of years**	**Minimum allowable expenditures in SRP (US$)**	
PL 5030/2008 size 16.69 km^2	-	-	8.345	2011-2015 (3 years)	50070	4.1725	2014-2015 (1 year)	25035	75105
PL 5756/2009 (Coal), size 14.77 km^2	2011-2012 (I year)	7385	7.385	2012-2015 (3 years)	44310	-	-	-	51695
PL 5903/2009\ (Coal), size 14.72 km^2	2011-2012 (I year)	7360	7.36	2012-2015 (3 years)	44160	-	-	-	51520
PL 6285/2009 (Coal), size 4.71 km^2	2011-2012 (I year)	2355	2.356	2012-2015 (3 years)	14130				16485
PL 7391/2011 (Coal) , size 19.8 km^2	2011-2015 (4 years)	39600	-	-	-	-	-	-	39600
PL 7392/2011 (Coal), size 20 km^2	2011-2015 (4 years)	40000	-	-	-	-	-	-	40000
PL 7620/2012 (Coal), size 17.39 km^2	2012-2015 (3 years)	26085	-	-	-	-	-	-	26085
PL 8999/2013 (Coal), size 58.47 km^2	2012-2015 (2 years)	58470	-	-	-	-	-	-	58470
PL 9807/2014 (Coal), size 6.93 km^2	2014-2015 (1 year)	3465	-	-	-	-	-	-	3465

PL 10417/2014 (Coal), size 15.44 km^2	2014-2015 (1 year)	7720	-	-	-	-	-	-	7720
PL 6005/2009 (Iron), size 11.22 km^2	2011-2012 (I year)	5610	5.61	2012-2015 (3 years)	33660	-	-	-	39270
PL 6006/2009 (Iron), size 15.73 km^2	2011-2012 (I year)	7865	7.865	2012-2015 (3 years)	47190	-	-	-	55055
PL 6007/2009 (Iron), size 3.32 km^2	2011-2012 (I year)	1660	1.66	2012-2015 (3 years)	9960	-	-	-	11620
PL 6008/2009 (Iron), size 12.28 km^2	2011-2012 (I year)	6140	6.14	2012-2015 (3 years)	36840	-	-	-	42980
PL 6009/2009 (Iron), size 3.6 km^2	2011-2012 (I year)	1800	1.8	2012-2015 (3 years)	10800	-	-	-	12600
PL 6010/2009 (Coal), size 12.52 km^2	2011-2012 (I year)	6260	6.26	2012-2015 (3 years)	37560	-	-	-	43820
PL 6643/2010 (Iron), size 9.9 km^2	2011-2013 (2 years)	9900	4.95	2012-2015 (3 years)	19800	-	-	-	29700
PL 6712/2010 (Coal), size 18.77 km^2	2011-2013 (2 years)	18770	9.385	2012-2015 (3 years)	37540	-	-	-	56310
PL 7413/2011 (Iron), size 4.4 km^2	2011-2015 (4 years)	8800	-	-	-	-	-	-	8800
PL 7461/2011 (iron), size 4.95 km^2	2011-2015 (4 years)	9900	-	-	-	-	-	-	9900
PL 6986/2012 (Coal), size 6.48 km^2	2012-2015 (3 years)	9720	-	-	-	-	-	-	9720
PL 7714/2012 (Dolomite), size 1.83 km^2	2012-2015 (3 years)	2745	-	-	-	-	-	-	2745
PL 7716/2012 (Coal), size 12.96 km^2	2012-2015 (3 years)	19440	-	-	-	-	-	-	19440
PL 7717/2012 (Dolomite), size 1.66 km^2	2012-2015 (3 years)	2490	-	-	-	-	-	-	2490
PL 7718/2012 (Dolomite), size 1.8 km^2	2012-2015 (3 years)	2700	-	-	-	-	-	-	2700
PL 8128/2012 (Dolomite), size 3.65 km^2	2012-2015 (3 years)	5475	-	-	-	-	-	-	5475
PL 9056/2013 (Dolomite), size 2.2 km^2	2013-2015 (2 years)	2200	-	-	-	-	-	-	2200
PL 9533/2014 (Coal), size 12.62 km^2	2014-2015 (1 year)	6310	-	-	-	-	-	-	6310

PL 9766/2014 (Dolomite), size 1.66 km^2	2014-2015 (1 year)	830	-	-	-	-	-	-	830
PL 9767/2014 (Dolomite), size 1.8 km^2	2014-2015 (1 year)	900	-	-	-	-	-	-	900
PL 9881/2014 (Coal), size 6.48 km^2	2014-2015 (1 year)	3240	-	-	-	-	-	-	3240
PL 10110/2014 (Coal), size 18.77 km^2	2014-2015 (1 year)	9385	-	-	-	-	-	-	9385
PL 10259/2014 (Iron), size 5.59 km^2	2014-2015 (1 year)	2795	-	-	-	-	-	-	2795
PL 10260/2014 (Iron), size 8.09 km^2	2014-2015 (1 year)	4045	-	-	-	-	-	-	4045
PL 10261/2014 (Iron), size 6.14 km^2	2014-2015 (1 year)	3070	-	-	-	-	-	-	3070
PL 10263/2014 (Coal), size 12.62 km^2	2014-2015 (1 year)	6310	-	-	-	-	-	-	6310
PL 10418/2014 (Iron), size 4.95 km^2	2014-2015 (1 year)	2475	-	-		-	-		2475
	Total	**353275**			**386020**			**25035**	**764330**

8.13 Payable annual levies for 37 PLs by TEL and TCIMR

Licence No., size and mineral sought	Initial Prospecting Period (IPP)			First Renewal Period (FRP)			Second Renewal Period (SRP)			Total Payable annual levies in IPP, FRP and SRP (US$)
	Period and No. of years	Rate per km² per year (US$)	Payable annual levies in IPP (US$)	Period, No. of years and reduced size of PL	Rate per km² per year (US$)	Payable annual levies n FRP (US$)	Period, No. of years and reduced size of PL	Rate per km² per year (US$)	Payable annual levies in SRP (US$)	
PL 5030/2008 (Coal), size 16.69 km²	-	-		2011-2015 (3 years), size 8.345 km²	150	2,920.75	2014-2015 (1 year), size 4.1725 km²	200	834.50	3,755.25
PL 5756/2009 (Coal), size 14.77 km²	2011-2012 (I year)	40	590.80	2012-2015 (3 years), size 7.385 km²	150	3,323.25	-	-	-	3,914.05
PL 5903/2009 (Coal), size 14.72 km²	2011-2012 (I year)	40	588.80	2012-2015 (3 years), size 7.36 km²	150	3,312.00	-	-	-	3,900.80
PL 6285/2009 (Coal), size 4.71 km²	2011-201 (I year)	40	188.40	2012-2015 (3 years), size 2.355 km²	150	1,059.75	-	-	-	1,248.15
PL 7391/2011 (Coal) , size 19.8 km²	2011-2015 (4 years)	40 for 2011-2012 & 100 for 2012-2015	6,732.00	-	-	-	-	-	-	6,732.00
PL 7392/2011 (Coal), size 20 km²	2011-2015 (4 years)	40 for 2011-2012 & 100 for 2012-2015	6,800.00	-	-	-	-	-	-	6,800.00
PL 7620/2012 (Coal), size 17.39 km²	2012-2015 (3 years)	100	5,217.00	-	-	-	-	-	-	5,217.00

PL 8999/2013 (Coal), size 58.47 km^2	2012-2015 (2 years)	100	11,694.00	-	-	-	-	-	-	11,694.00
PL 9807/2014 (Coal), size 6.93 km^2	2014-2015 (1 year)	100	693.00	-	-	-	-	-	-	693.00
PL 10417/2014 (Coal), size 15.44 km^2	2014-2015 (1 year)	100	1,544.00	-	-	-	-	-	-	1,544.00
PL 6005/2009 (Iron), size 11.22 km^2	2011-2012 (I year)	40	448.80	2012-2015 (3 years), size 5.61 km^2	150	2,524.50	-	-	-	2,973.30
PL 6006/2009 (Iron), size 15.73 km^2	2011-2012 (I year)	40	629,20	2012-2015 (3 years), size 7.865 km^2	150	3,539.25	-	-	-	4,168.45
PL 6007/2009 (Iron), size 3.32 km^2	2011-2012 (I year)	40	132.80	2012-2015 (3 years), size 1.66 km^2	150	747.00	-	-	-	879.80
PL 6008/2009 (Iron), size 12.28 km^2	2011-2012 (I year)	40	491.20	2012-2015 (3 years), size 6.14 km^2	150	2,763.00	-	-	-	3,254.20
PL 6009/2009 (Iron), size 3.6 km^2	2011-2012 (I year)	40	144.00	2012-2015 (3 years), size 1.8 km^2	150	810.00	-	-	-	954.00
PL 6010/2009 (Coal), size 12.52 km^2	2011-2012 (I year)	40	500.80	2012-2015 (3 years), size 6.26 km^2	150	2,817.00	-	-	-	3,317.80
PL 6643/2010 (Iron), size 9.9 km^2	2011-2013 (2 years)	40 for 2011-2012 & 100 for 2012-2013	1,386.00	2013-2015 (2 years), size 4.95 km^2	150	1,485.00	-	-	-	2,871.00
PL 6712/2010 (Coal), size 18.77 km^2	2011-2013 (2 years)	40 for 2011-2012 & 100 for 2012-2013	2,627.80	2013-2015 (2 years), size 9.385 km^2	150	2,815.50	-	-	-	5,443.30
PL 7413/2011 (Iron), size 4.4 km^2	2011-2015 (4 years)	40 for	1,496.00	-	-	-	-	-	-	1,496.00

		2011-2012 & 100 for 2012-2015								
PL 7461/2011 (iron), size 4.95 km^2	2011-2015 (4 years)	40 for 2011-2012 & 100 for 2012-2015	1,683.00	-	-	-	-	-	-	1,683.00
PL 6986/2012 (Coal), size 6.48 km^2	2012-2015 (3 years)	100	1,944.00	-	-	-	-	-	-	1,944.00
PL 7714/2012 (Dolomite), size 1.83 km^2	2012-2015 (3 years)	100	549.00	-	-	-	-	-	-	549.00
PL 7716/2012 (Coal), size 12.96 km^2	2012-2015 (3 years)	100	3,888.00	-	-	-	-	-	-	3,888.00
PL 7717/2012 (Dolomite), size 1.66 km^2	2012-2015 (3 years)	100	498,00	-	-	-	-	-	-	498.00
PL 7718/2012 (Dolomite), size 1.8 km^2	2012-2015 (3 years)	100	540.00	-	-	-	-	-	-	540.00
PL 8128/2012 (Dolomite), size 3.65 km^2	2012-2015 (3 years)	100	1,095.00	-	-	-	-	-	-	1,095.00
PL 9056/2013 (Dolomite), size 2.2 km^2	2013-2015 (2 years)	100	440.00	-	-	-	-	-	-	440.00
PL 9533/2014 (Coal), size 12.62 km^2	2014-2015 (1 year)	100	1,262.00	-	-	-	-	-	-	1,262.00
PL 9766/2014 (Dolomite), size 1.66 km^2	2014-2015 (1 year)	100	166,00	-	-	-	-	-	-	166.00
PL 9767/2014 (Dolomite), size 1.8 km^2	2014-2015 (1 year)	100	180.00	-	-	-	-	-	-	180.00
PL 9881/2014 (Coal), size 6.48 km^2	2014-2015 (1 year)	100	648.00	-	-	-	-	-	-	648.00
PL 10110/2014 (Coal), size 18.77 km^2	2014-2015 (1 year)	100	1,877.00	-	-	-	-	-	-	1,877.00
PL 10259/2014 (Iron), size 5.59 km^2	2014-2015 (1 year)	100	559.00	-	-	-	-	-	-	559.00

PL 10260/2014 (Iron), size 8.09 km^2	2014-2015 (1 year)	100	809.00	-	-	-	-	-	-	809.00
PL 10261/201 (Iron), size 6.14 km^2	2014-2015 (1 year)	100	614.00	-	-	-	-	-	-	614.00
PL 10263/2014 (Coal), size 12.62 km^2	2014-2015 (1 year)	100	1,262.00	-	-	-	-	-	-	1,262.00
PL 10418/2014 (Iron), size 4.95 km^2	2014-2015 (1 year)	100	495.00	-	-	-	-	-	-	495.00
		Total	**60,413.60**			**28,117.00**			**834.50**	**89,365.10**

8.14 Exploration expenditures in 20 PLs wholly owned by NDC

Initial Prospecting Period (IPP) in which minimum allowable exploration expenditure rate per km^2 per year is US$500			First Renewal Period (FRP) in which minimum allowable exploration expenditure rate per km^2 per year is US$2000			Second Renewal Period (SRP) in which minimum allowable exploration expenditure rate per km^2 per year is US$6000			Total Minimum allowable expenditures in IPP, FRP and SRP (US$)
Licence No., Initial size (km^2) of PL and mineral sought	**Period & No. of years**	**Minimum allowable expenditures in IPP (US$)**	**Total Minimum allowable expenditures in IPP, FRP and SRP (US$)**	**Period and No. of years**	**Minimum allowable expenditures in FRP (US$)**	**Reduced size (km^2) of PL**	**Period and No. of years**	**Minimum allowable expenditures in SRP (US$)**	
PL 4679/2007 (Coal), size 8.42 km^2	2011-2012 (1)	4210	4.21	2012-2015 (3)	25260	2.105	-	-	29470
PL 5325/2008 (Coal), size 18.94 km^2	-	-	9.47	2011-2015 (3)	56820	4.735	2014-201 (1)	28410	85230
PL 6245/2009 (Soda Ash), size 41.03 km^2	2011-2012 (1)	20515	20.515	2012-2015 (3)	123090	10.2575	-	-	143605
PL 6246/2009 (Soda Ash), size 39.33 km^2	2011-2012 (1)	19665	19.665	2012-2015 (3)	117990	9.8325	-	-	137655
PL 6708/2010 (Coal), size 7.16 km^2	2011-2013 (2)	7160	3.58	2013-2015 (2)	14320		-	-	21480

						1.79			
PL 6710/2010 (Coal), size 14.73km^2	2011-2013 (2)	14730	7.365	2013-2015 (2)	29460	3.6825	-	-	44190
PL 6711/2010 (Coal), size 9.78 km^2	2011-2013 (2)	9780	4.89	2013-2015 (2)	19560	2.445	-	-	29340
PL 6917/2011 (Coal), size 9.47 km^2	2011-2015 (4)	18940	4.735	-	-	2.3675	-	-	18940
PL 6923/2011 (Coal), size 7.36 km^2	2011-2015 (4)	14720	3.68	-	-	1.84	-	-	14720
PL 6959/2011 (Coal), size 11.87km^2	2011-2015 (4)	23740	5.935	-	-	2.9675	-	-	23740
PL 7713/2012 (Gold) size 10.91 km^2	2012-2015 (3)	16365	5.455	-	-	2.7275	-	-	16365
PL 7715/2012 (Coal), size 15.53 km^2	2012-2015 (3)	23295	7.765	-	-	3.8825	-	-	23295

PL 8065/2012 (AOBG), size 49.72 km^2	2012-2015 (3)	74580	24.86	-	-	12.43	-	-	74580
PL 8797/2013 (Soda Ash), size 99.21 km^2	2013-2015 (2)	99210	49.605	-	-	24.8025	-	-	99210
PL 9573/2014 (Soda Ash), size 82.08 km^2	2014-2015 (1)	41040	41.04	-	-	20.52	-	-	41040
PL 9575/2014 (Soda Ash), size 68.38 km^2	2014-2015 (1)	34190	34.19	-	-	17.095	-	-	34190
PL 9751/2014 (Coal), size 9.47 km^2	2014-2015 (1)	4735	4.735	-	-	2.3675	-	-	4735
PL 9577/2014 (Iron), size 6.18 km^2	2014-2015 (1)	3090	3.09	-	-	1.545	-	-	3090
PL 10081/2014 (Coal), size 7.36 km^2	2014-2015 (1)	3680	3.68		-			-	3680

				-		1.84	-		
PL 10193/2014 (Iron), size 2.61 km^2	2014-2015 (1)	1305	1.305	-	-	0.6525	-	-	1305
Total		**434950**			**386500**			**28410**	**849860**

8.15 Payable annual levies for 20 wholly owned PLs by NDC

Licence No., size and mineral sought	Initial Prospecting Period (IPP)			First Renewal Period (FRP)			Second Renewal Period (SRP)			Total Payable annual levies in IPP, FRP and SRP (US$)
	Period and No. of years	Rate per km^2 per year (US$)	Payable Annual in IPP levies (US$)	Period, No. of years and reduced size of PL	Rate per km^2 per year (US$)	Payable Annual levies in FRP (US$)	Period, No. of years and reduced size of PL	Rate per km^2 per year (US$)	Payable annual levies in SRP (US$)	
PL 4679/2007 (Coal), size 8.42 km^2	2011-2012 (1 year)	40	336.80	2012-2015 (3 years), size 4.21 km^2	150	1,894.50				2,231.30
PL 5325/2008 (Coal), size 18.94 km^2				2011-2015 (3 years), size 9.47 km^2	50 for 2011-2012 and 150 for 2012-2014	3,314.50	2014-2015 (1 year), size 4.735 km^2	200	947.00	4,261.50
PL 6245/2009 (Soda Ash), size 41.03 km^2	2011-2012 (1 year)	40	1,641.20	2012-2015 (3 years), size 20.515 km^2	150	9,231.75	-	-	-	10,872.95
PL 6246/2009 (Soda Ash), size 39.33 km^2	2011-2012 (1 year)	40	1,573.20	2012-2015 (3 years), size 19.665 km^2	150	8,849.25	-	-	-	10,422.45
PL 6708/2010 (Coal), size 7.16 km^2	2011-2013 (2 years)	40 for 2011-2012 and 100 for 2012-2013	1,002.40	2013-2015 (2 years), size 3.58 km^2	150	1,074.00	-	-	-	2,076.40

PL 6710/2010 (Coal), size 14.73km^2	2011-2013 (2 years)	40 for 2011-2012 and 100 for 2012-2013	2,062.20	2013-2015 (2 years), size 7.365 km^2	150	2,209.50	-	-	-	4,271.70
PL 6711/2010 (Coal), size 9.78 km^2	2011-2013 (2 years)	40 for 2011-2012 and 100 for 2012-2013	1,369.20	2013-2015 (2 years), size 4.89 km^2	150	1,467.00	-	-	-	2,836.20
PL 6917/2011 (Coal), size 9.47 km^2	2011-2015 (4 years)	40 for 2011-2012 and 100 for 2012-2015	3,219.80	-	-	-	-	-	-	3,219.80
PL 6923/2011 (Coal), size 7.36 km^2	2011-2015 (4 years)	40 for 2011-2012 and 100 for 2012-2015	2,502.40	-	-	-	-	-	-	2,502.40
PL 6959/2011 (Coal), size 11.87km^2	2011-2015 (4 years)	40 for 2011-2012 and 100 for 2012-2015	4,035.80	-	-	-	-	-	-	4,035.80
PL 7713/2012 (Gold) size 10.91 km^2	2012-2015 (3 years)	100	3,273.00	-	-	-	-	-	-	3,273.00
PL 7715/2012	2012-2015 (3 years)	100	4,659.00	-	-	-	-	-	-	4,659.00

(Coal), size 15.53 km^2										
PL 8065/2012 (AOBG), size 49.72 km^2	2012-2015 (3 years)	100	14,916.00	-	-	-	-	-	-	14,916.00
PL 8797/2013 (Soda Ash), size 99.21 km^2	2013-2015 (2 years)	100	19,842.00	-	-	-	-	-	-	19,842.00
PL 9573/2014 (Soda Ash), size 82.08 km^2	2014-2015 (1 years)	100	8,208.00	-	-	-	-	-	-	8,208.00
PL 9575/2014 (Soda Ash), size 68.38 km^2	2014-2015 (1 year)	100	6,838.00	-	-	-	-	-	-	6,838.00
PL 9751/2014 (Coal), size 9.47 km^2	2014-2015 (1 year)	100	947.00	-	-	-	-	-	-	947.00
PL 9577/2014 (Iron), size 6.18 km^2	2014-2015 (1 year)	100	618.00	-	-	-	-	-	-	618.00
PL 10081/2014	2014-2015 (1 year)	100	736.00							736.00

(Coal), size 7.36 km^2				-	-	-	-	-	-	
PL 10193/2014 (Iron), size 2.61 km^2	2014-2015 (1 year)	100	261.00	-	-	-	-	-	-	261.00
Total (US$)			**78,041.00**			**28,040.50**			**947.00**	**107,028.50**

8.16 Mineral rights partially and wholly owned by NDC from 1996 to 2015

Nature of mineral rights ownership from 1996 to 2015	Type of mineral rights	Description of mineral rights	No. of mineral rights	Mineral sought	% of ownership of NDC in mineral rights	% of ownership and name of private investor in mineral rights		Sole commercial entity, partnership or company holding mineral rights (100%)
						% of ownership of private investor	Name	
Partial ownership	PLs	Coal PLs partially owned by NDC and IETL	10	Coal	30	70	IETL	TEL (Private JV company)
		Coal PLs partially owned by NDC and SHG	10	Coal	20	80	SHG	TCIMRL (Private JV company)
		Iron PLs partially owned by NDC and SHG	16	Iron	20	80	SHG	TCIMRL (Private JV company)
		Dolomite PLs partially owned by NDC and SHG	7	Dolomite	20	80	SHG	TCIMRL (Private JV company)
	MLs	Coal MLs partially owned by NDC and IETL	1	Coal	30	70	IETL	TEL (Private JV company)
	SMLs	Iron SMLs partially owned by NDC and SHG	1	Iron	20	80	SHG	TCIMRL (Private JV company)
		Coal SMLs partially owned by NDC and SHG	1	Coal	20	80	SHG	TCIMRL (Private JV company)
		Subtotal	**46**					
Wholly ownership	PLs	Coal PLs wholly owned by NDC	12	Coal	100	-	None	NDC (Sole commercial entity)
		Soda ash PLs wholly owned by NDC	6	Soda ash	100	-	None	NDC (Sole commercial entity)
		AOBG PLs wholly owned by NDC	1	AOBG	100	-	None	NDC (Sole commercial entity)
		Gold PLs wholly owned by NDC	1	Gold	100	-	None	NDC (Sole commercial entity)
		Iron PLs wholly owned by NDC	2	Iron	100	-	None	NDC (Sole commercial entity)
Subtotal			**22**					
Total			**68**					

8.17 Non-financial benefits of TZGT equity role in medium and large scale mining

Scale of mining	Mine	Greater control of the mineral sector (for TZGT having % of ownership shares in the mining share)	Employment equity	Human resource development	Procurement and enterprise development	Community development (MCD)
Medium	**MTM**	Fairly achieved	1,166 locals were cumulative employed from 2009 to 2015 than expatriates at 23.	Fairly achieved despite lack of monitoring and enforcement mechanisms.	Local procurement at 91.6% from 2012 and 2014 at the value of value of US$11.6 million.	Mine supplied water, constructed school classrooms and roads. From 2010 to 2014 at the cost of US$427,967 to zero respectively.
	KGM	Fairly achieved	No data displayed in public domains.	No data displayed in public domains.	No data displayed in public domains.	None.
	NCM	Fairly achieved	No data displayed in public domains.	Fairly achieved despite lack of monitoring and enforcement mechanisms.	No data displayed in public domains.	No data displayed in public domains.
Large	**BKGM**	Fairly achieved	No data displayed in public domains	Fairly achieved despite lack of monitoring and enforcement mechanisms.	No data displayed in public domains.	No data displayed in public domains.
	LIOM	Fairly achieved	LIOM together with MCM will employ 32,000 locals.	Fairly achieved despite lack of monitoring and enforcement mechanisms.	No data displayed in public domains.	No data displayed in public domains.
	MCM	Fairly achieved	MCM together with LIOM will employ 32,000 locals.	Fairly achieved despite lack of monitoring and enforcement mechanisms.	No data displayed in public domains.	No data displayed in public domains.
	WDM	Fairly achieved	558 locals were cumulative employed from 2009 to 2015 than expatriates at 11.	Fairly achieved despite lack of monitoring and enforcement mechanisms.	Local procurement of goods was at 80.5% of total procurement from 2012 to 2014 at a value of US$98.91 million.	Mine supplied water, constructed school classrooms and roads. From 2010 to 2014 at the cost of US$381,813 to US$125,323 respectively.
	KCM	Fairly achieved	No data displayed in public domains	No data displayed in public domains.	No data displayed in public domains.	No data displayed in public domains.
	SBM	Fairly achieved	Only locals, 340 skilled and 43 non-skilled employed at the mine from 2014 to 2015.	Fairly achieved despite lack of monitoring and enforcement mechanisms.	Mine spent US$63,076.92 in local procurement of foodstuffs from 2011 to 2015.	From 2011 to 2015, the mine spent a total of US$101,238.47 on CSR activities including facilitation of desks to pupils, renovations of water storage facilities, feeder roads as well as classrooms.